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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
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JOB DESCRIPTION

BMP Performance-001,002,009 and/or 011 Watersheds

JOB NUMBER

570-116265-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

my EOL

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-1
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-116265-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-116265-1

Comments
No additional comments.

Receipt
The samples were received on 11/8/2022 4:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 7 coolers at receipt time were 1.7º C, 2.2º C, 2.6º C, 3.1º C, 3.3º C, 3.7º C and 3.7º C.

Receipt Exceptions

The laboratory received 250 ml plastic with HNO3 instead of 250 ml unpreserved plastic container for dissolved metals analysis on the following sample: B1BMP009_20221108 (570-116265-1), B1BMP010_20221108 (570-116265-2), B1BMP011_20221108 (570-116265-3), ILBMP004_20221108 (570-116265-4), ILBMP005_20221108 (570-116265-5), ILBMP008_20221108 (570-116265-6), LPBMP0002_20221108 (570-116265-7), LPBMP0003_20221108 (570-116265-8), LPBMP0004_20221108 (570-116265-9), LPBMP0002_DUP_20221108 (570-116265-10) and EPSW001IE01_20221108 (570-116265-11).

Aliquot was taken from 1L Amber glass container for dissolved metals.

The following sample: #9F for job# 570-116265 has a cracked lid, which could not be replaced. Container lid was taped up to prevent leakage or volume loss. There was no leakage or volume lost. LPBMP0004_20221108 (570-116265-9)

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.7 Rev 4.4: The method blank for preparation batch 570-280630 and analytical batch 570-280926 contained Manganese above the method detection limit. This target analyte concentration was less than the reporting limit (RL) or greater than 10X the value found in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-279970 and analytical batch 570-280249 were outside control limits for Cadmium, Copper and Lead. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: B1BMP009_20221108 (570-116265-1), B1BMP010_20221108 (570-116265-2), B1BMP011_20221108 (570-116265-3), ILBMP004_20221108 (570-116265-4), ILBMP005_20221108 (570-116265-5), ILBMP008_20221108 (570-116265-6), LPBMP0002_20221108 (570-116265-7), LPBMP0003_20221108 (570-116265-8), LPBMP0004_20221108 (570-116265-9), LPBMP0002_DUP_20221108 (570-116265-10) and EPSW001IE01_20221108 (570-116265-11). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPSW001IE01_20221108 (570-116265-11). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 570-116265-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Organic Prep

Method D4464: The sample duplicate precision for the following sample associated with analytical batch 570-283613 was flagged as being outside control limits due to a L.I.M.S. limitation: (570-116458-A-2) and (570-116458-A-2 DU). The mean grain size for the sample and sample duplicate were within RPD acceptance criteria. Method D4464.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-1

Client Sample ID: B1BMP009_20221108 — Lab Sample ID: 570-116265-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.25	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	7.0		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	3.1		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	3.2	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Total Suspended Solids	60		2.0	1.7	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	4.55		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	9.42		0.01	0.01	%	1		D4464	Total/NA
Medium Sand (0.25 to 0.5 mm)	0.05		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	63.24		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	67.78		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	22.74		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: B1BMP010_20221108 — Lab Sample ID: 570-116265-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2.9		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.72	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	2.3	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.13	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	6.0		1.0	0.83	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	5.01		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	9.32		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	63.50		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	68.51		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	22.17		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: B1BMP011_20221108 — Lab Sample ID: 570-116265-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	3.9		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.74	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	3.6	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.18	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	10		1.3	1.0	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	3.13		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	13.89		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	49.69		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	52.81		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	33.30		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: ILBMP0004_20221108 — Lab Sample ID: 570-116265-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.20	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	5.8		2.0	0.32	ug/L	1		200.8	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-1

Client Sample ID: ILBMP0004_20221108 (Continued) — Lab Sample ID: 570-116265-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	2.8		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	2.8	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.23	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	49		2.0	1.7	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	9.14		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	9.55		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	59.49		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	68.64		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	21.81		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: ILBMP0005_20221108 — Lab Sample ID: 570-116265-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	12		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.85	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	13	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.25	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	12		2.0	1.7	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	3.61		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	13.22		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	49.83		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	53.44		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	33.35		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: ILBMP0008_20221108 — Lab Sample ID: 570-116265-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.33	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	6.8		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	3.0		1.0	0.12	ug/L	1		200.8	Total Recoverable
Cadmium	0.22	J,DX BU	1.0	0.13	ug/L	1		200.8	Dissolved
Copper	5.1	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.23	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	37		2.0	1.7	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	8.24		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	8.22		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	70.71		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	78.95		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	12.83		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: LPBMP0002_20221108 — Lab Sample ID: 570-116265-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	6.4		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	3.4		1.0	0.12	ug/L	1		200.8	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-1
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: LPBMP0002_20221108 (Continued)
Lab Sample ID: 570-116265-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	4.8	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.24	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	33		2.0	1.7	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	8.82		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	3.58		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	75.62		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	84.43		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	11.99		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: LPBMP0003_20221108
Lab Sample ID: 570-116265-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	5.9		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	3.0		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	4.7	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.24	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	26		2.0	1.7	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	6.80		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	81.80		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	88.60		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	11.40		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: LPBMP0004_20221108
Lab Sample ID: 570-116265-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	8.5		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	1.4		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	8.1	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.38	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	13		1.3	1.0	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	4.92		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	8.44		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	68.82		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	73.74		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	17.82		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: LPBMP0002_DUP_20221108
Lab Sample ID: 570-116265-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	8.3		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	2.1		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	7.6	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.25	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	22		2.0	1.7	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	6.18		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	7.09		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	66.55		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-1

Client Sample ID: LPBMP0002_DUP_20221108 (Continued)

Lab Sample ID: 570-116265-10

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Silt and Clay (0 to 0.0626mm)	72.73		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	20.18		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EPSW001IE01_20221108

Lab Sample ID: 570-116265-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	0.84	J,DX	2.0	0.47	mg/L	2		300.0	Total/NA
Iron	24000		500	56	ug/L	1		200.7 Rev 4.4	Total Recoverable
Manganese	690	MB	50	1.3	ug/L	1		200.7 Rev 4.4	Total Recoverable
Zinc	93	J,DX	250	4.6	ug/L	1		200.7 Rev 4.4	Total Recoverable
Iron	1000	BU	500	56	ug/L	1		200.7 Rev 4.4	Dissolved
Manganese	27	J,DX BU	50	1.3	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	4.7		1.0	0.16	ug/L	1		200.8	Total Recoverable
Cadmium	0.25	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	18		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	13		1.0	0.12	ug/L	1		200.8	Total Recoverable
Selenium	2.2		2.0	0.52	ug/L	1		200.8	Total Recoverable
Arsenic	1.0	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	3.3	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.46	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	850		33	28	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**0.84**	**J,DX**	2.0	0.47	mg/L			11/14/22 08:30	2

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-1
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPSW001IE01_20221108
Lab Sample ID: 570-116265-11
Date Collected: 11/08/22 07:00
Matrix: Water
Date Received: 11/08/22 16:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	24000		500	56	ug/L		11/11/22 08:06	11/11/22 20:16	1
Manganese	690	MB	50	1.3	ug/L		11/11/22 08:06	11/11/22 20:16	1
Zinc	93	J,DX	250	4.6	ug/L		11/11/22 08:06	11/11/22 20:16	1

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**1000**	**BU**	500	56	ug/L			11/09/22 19:01	1
Manganese	**27**	**J,DX BU**	50	1.3	ug/L			11/09/22 19:01	1
Zinc	ND	BU	250	4.6	ug/L			11/09/22 19:01	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: B1BMP009_20221108
Date Collected: 11/08/22 06:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.25**	**J,DX**	1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:24	1
Copper	**7.0**		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:24	1
Lead	**3.1**		1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:24	1

Client Sample ID: B1BMP010_20221108
Date Collected: 11/08/22 06:05
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:32	1
Copper	**2.9**		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:32	1
Lead	**0.72**	**J,DX**	1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:32	1

Client Sample ID: B1BMP011_20221108
Date Collected: 11/08/22 06:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:34	1
Copper	**3.9**		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:34	1
Lead	**0.74**	**J,DX**	1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:34	1

Client Sample ID: ILBMP0004_20221108
Date Collected: 11/08/22 06:25
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.20**	**J,DX**	1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:37	1
Copper	**5.8**		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:37	1
Lead	**2.8**		1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:37	1

Client Sample ID: ILBMP0005_20221108
Date Collected: 11/08/22 06:30
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:44	1
Copper	**12**		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:44	1
Lead	**0.85**	**J,DX**	1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:44	1

Client Sample ID: ILBMP0008_20221108
Date Collected: 11/08/22 06:35
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.33**	**J,DX**	1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:47	1
Copper	**6.8**		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:47	1
Lead	**3.0**		1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:47	1

Client Sample ID: LPBMP0002_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:49	1
Copper	**6.4**		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:49	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: LPBMP0002_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**3.4**		1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:49	1

Client Sample ID: LPBMP0003_20221108
Date Collected: 11/08/22 07:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:52	1
Copper	**5.9**		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:52	1
Lead	**3.0**		1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:52	1

Client Sample ID: LPBMP0004_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:54	1
Copper	**8.5**		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:54	1
Lead	**1.4**		1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:54	1

Client Sample ID: LPBMP0002_DUP_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:57	1
Copper	**8.3**		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:57	1
Lead	**2.1**		1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:57	1

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.7**		1.0	0.16	ug/L		11/11/22 06:54	11/11/22 12:59	1
Cadmium	**0.25**	**J,DX**	1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:59	1
Copper	**18**		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:59	1
Lead	**13**		1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:59	1
Selenium	**2.2**		2.0	0.52	ug/L		11/11/22 06:54	11/11/22 12:59	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: B1BMP009_20221108
Date Collected: 11/08/22 06:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			11/09/22 14:58	1
Copper	**3.2**	**BU**	2.0	0.32	ug/L			11/09/22 14:58	1
Lead	ND	BU	1.0	0.12	ug/L			11/09/22 14:58	1

Client Sample ID: B1BMP010_20221108
Date Collected: 11/08/22 06:05
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			11/09/22 14:31	1
Copper	**2.3**	**BU**	2.0	0.32	ug/L			11/09/22 14:31	1
Lead	**0.13**	**J,DX BU**	1.0	0.12	ug/L			11/09/22 14:31	1

Client Sample ID: B1BMP011_20221108
Date Collected: 11/08/22 06:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			11/09/22 14:33	1
Copper	**3.6**	**BU**	2.0	0.32	ug/L			11/09/22 14:33	1
Lead	**0.18**	**J,DX BU**	1.0	0.12	ug/L			11/09/22 14:33	1

Client Sample ID: ILBMP0004_20221108
Date Collected: 11/08/22 06:25
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			11/09/22 14:36	1
Copper	**2.8**	**BU**	2.0	0.32	ug/L			11/09/22 14:36	1
Lead	**0.23**	**J,DX BU**	1.0	0.12	ug/L			11/09/22 14:36	1

Client Sample ID: ILBMP0005_20221108
Date Collected: 11/08/22 06:30
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			11/09/22 14:38	1
Copper	**13**	**BU**	2.0	0.32	ug/L			11/09/22 14:38	1
Lead	**0.25**	**J,DX BU**	1.0	0.12	ug/L			11/09/22 14:38	1

Client Sample ID: ILBMP0008_20221108
Date Collected: 11/08/22 06:35
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.22**	**J,DX BU**	1.0	0.13	ug/L			11/09/22 14:45	1
Copper	**5.1**	**BU**	2.0	0.32	ug/L			11/09/22 14:45	1
Lead	**0.23**	**J,DX BU**	1.0	0.12	ug/L			11/09/22 14:45	1

Client Sample ID: LPBMP0002_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			11/09/22 14:47	1
Copper	**4.8**	**BU**	2.0	0.32	ug/L			11/09/22 14:47	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: LPBMP0002_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.24**	**J,DX BU**	1.0	0.12	ug/L			11/09/22 14:47	1

Client Sample ID: LPBMP0003_20221108
Date Collected: 11/08/22 07:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			11/09/22 14:49	1
Copper	**4.7**	**BU**	2.0	0.32	ug/L			11/09/22 14:49	1
Lead	**0.24**	**J,DX BU**	1.0	0.12	ug/L			11/09/22 14:49	1

Client Sample ID: LPBMP0004_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			11/09/22 14:51	1
Copper	**8.1**	**BU**	2.0	0.32	ug/L			11/09/22 14:51	1
Lead	**0.38**	**J,DX BU**	1.0	0.12	ug/L			11/09/22 14:51	1

Client Sample ID: LPBMP0002_DUP_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			11/09/22 14:53	1
Copper	**7.6**	**BU**	2.0	0.32	ug/L			11/09/22 14:53	1
Lead	**0.25**	**J,DX BU**	1.0	0.12	ug/L			11/09/22 14:53	1

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.0**	**BU**	1.0	0.16	ug/L			11/10/22 09:57	1
Cadmium	ND	BU	1.0	0.13	ug/L			11/10/22 09:57	1
Copper	**3.3**	**BU**	2.0	0.32	ug/L			11/10/22 09:57	1
Lead	**0.46**	**J,DX BU**	1.0	0.12	ug/L			11/10/22 09:57	1
Selenium	ND	BU	2.0	0.52	ug/L			11/10/22 09:57	1

General Chemistry

Client Sample ID: B1BMP009_20221108
Date Collected: 11/08/22 06:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	60		2.0	1.7	mg/L			11/11/22 11:04	1

Client Sample ID: B1BMP010_20221108
Date Collected: 11/08/22 06:05
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	6.0		1.0	0.83	mg/L			11/11/22 11:04	1

Client Sample ID: B1BMP011_20221108
Date Collected: 11/08/22 06:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	10		1.3	1.0	mg/L			11/11/22 11:04	1

Client Sample ID: ILBMP0004_20221108
Date Collected: 11/08/22 06:25
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	49		2.0	1.7	mg/L			11/11/22 11:04	1

Client Sample ID: ILBMP0005_20221108
Date Collected: 11/08/22 06:30
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	12		2.0	1.7	mg/L			11/11/22 11:04	1

Client Sample ID: ILBMP0008_20221108
Date Collected: 11/08/22 06:35
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	37		2.0	1.7	mg/L			11/11/22 11:04	1

Client Sample ID: LPBMP0002_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	33		2.0	1.7	mg/L			11/11/22 11:04	1

Client Sample ID: LPBMP0003_20221108
Date Collected: 11/08/22 07:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	26		2.0	1.7	mg/L			11/11/22 11:04	1

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-1

General Chemistry

Client Sample ID: LPBMP0004_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	13		1.3	1.0	mg/L			11/11/22 11:04	1

Client Sample ID: LPBMP0002_DUP_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	22		2.0	1.7	mg/L			11/11/22 11:04	1

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	850		33	28	mg/L			11/11/22 11:04	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: B1BMP009_20221108
Date Collected: 11/08/22 06:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**4.55**		0.01	0.01	%			11/22/22 15:15	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			11/22/22 15:15	1
Fine Sand (0.125 to 0.25mm)	**9.42**		0.01	0.01	%			11/22/22 15:15	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			11/22/22 15:15	1
Medium Sand (0.25 to 0.5 mm)	**0.05**		0.01	0.01	%			11/22/22 15:15	1
Silt (0.00391 to 0.0625mm)	**63.24**		0.01	0.01	%			11/22/22 15:15	1
Total Silt and Clay (0 to 0.0626mm)	**67.78**		0.01	0.01	%			11/22/22 15:15	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			11/22/22 15:15	1
Very Fine Sand (0.0625 to 0.125 mm)	**22.74**		0.01	0.01	%			11/22/22 15:15	1

Client Sample ID: B1BMP010_20221108
Date Collected: 11/08/22 06:05
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-2
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**5.01**		0.01	0.01	%			11/22/22 15:33	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			11/22/22 15:33	1
Fine Sand (0.125 to 0.25mm)	**9.32**		0.01	0.01	%			11/22/22 15:33	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			11/22/22 15:33	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			11/22/22 15:33	1
Silt (0.00391 to 0.0625mm)	**63.50**		0.01	0.01	%			11/22/22 15:33	1
Total Silt and Clay (0 to 0.0626mm)	**68.51**		0.01	0.01	%			11/22/22 15:33	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			11/22/22 15:33	1
Very Fine Sand (0.0625 to 0.125 mm)	**22.17**		0.01	0.01	%			11/22/22 15:33	1

Client Sample ID: B1BMP011_20221108
Date Collected: 11/08/22 06:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-3
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**3.13**		0.01	0.01	%			11/22/22 15:41	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			11/22/22 15:41	1
Fine Sand (0.125 to 0.25mm)	**13.89**		0.01	0.01	%			11/22/22 15:41	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			11/22/22 15:41	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			11/22/22 15:41	1
Silt (0.00391 to 0.0625mm)	**49.69**		0.01	0.01	%			11/22/22 15:41	1
Total Silt and Clay (0 to 0.0626mm)	**52.81**		0.01	0.01	%			11/22/22 15:41	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			11/22/22 15:41	1
Very Fine Sand (0.0625 to 0.125 mm)	**33.30**		0.01	0.01	%			11/22/22 15:41	1

Client Sample ID: ILBMP0004_20221108
Date Collected: 11/08/22 06:25
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-4
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**9.14**		0.01	0.01	%			11/22/22 15:48	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			11/22/22 15:48	1
Fine Sand (0.125 to 0.25mm)	**9.55**		0.01	0.01	%			11/22/22 15:48	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			11/22/22 15:48	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			11/22/22 15:48	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Client Sample ID: ILBMP0004_20221108
Date Collected: 11/08/22 06:25
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-4
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Silt (0.00391 to 0.0625mm)	59.49		0.01	0.01	%			11/22/22 15:48	1
Total Silt and Clay (0 to 0.0626mm)	68.64		0.01	0.01	%			11/22/22 15:48	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			11/22/22 15:48	1
Very Fine Sand (0.0625 to 0.125 mm)	21.81		0.01	0.01	%			11/22/22 15:48	1

Client Sample ID: ILBMP0005_20221108
Date Collected: 11/08/22 06:30
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-5
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	3.61		0.01	0.01	%			11/22/22 15:55	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			11/22/22 15:55	1
Fine Sand (0.125 to 0.25mm)	13.22		0.01	0.01	%			11/22/22 15:55	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			11/22/22 15:55	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			11/22/22 15:55	1
Silt (0.00391 to 0.0625mm)	49.83		0.01	0.01	%			11/22/22 15:55	1
Total Silt and Clay (0 to 0.0626mm)	53.44		0.01	0.01	%			11/22/22 15:55	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			11/22/22 15:55	1
Very Fine Sand (0.0625 to 0.125 mm)	33.35		0.01	0.01	%			11/22/22 15:55	1

Client Sample ID: ILBMP0008_20221108
Date Collected: 11/08/22 06:35
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-6
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	8.24		0.01	0.01	%			11/22/22 16:05	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			11/22/22 16:05	1
Fine Sand (0.125 to 0.25mm)	8.22		0.01	0.01	%			11/22/22 16:05	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			11/22/22 16:05	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			11/22/22 16:05	1
Silt (0.00391 to 0.0625mm)	70.71		0.01	0.01	%			11/22/22 16:05	1
Total Silt and Clay (0 to 0.0626mm)	78.95		0.01	0.01	%			11/22/22 16:05	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			11/22/22 16:05	1
Very Fine Sand (0.0625 to 0.125 mm)	12.83		0.01	0.01	%			11/22/22 16:05	1

Client Sample ID: LPBMP0002_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-7
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	8.82		0.01	0.01	%			11/22/22 16:11	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			11/22/22 16:11	1
Fine Sand (0.125 to 0.25mm)	3.58		0.01	0.01	%			11/22/22 16:11	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			11/22/22 16:11	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			11/22/22 16:11	1
Silt (0.00391 to 0.0625mm)	75.62		0.01	0.01	%			11/22/22 16:11	1
Total Silt and Clay (0 to 0.0626mm)	84.43		0.01	0.01	%			11/22/22 16:11	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			11/22/22 16:11	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Client Sample ID: LPBMP0002_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-7
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Very Fine Sand (0.0625 to 0.125 mm)	**11.99**		0.01	0.01	%			11/22/22 16:11	1

Client Sample ID: LPBMP0003_20221108
Date Collected: 11/08/22 07:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-8
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**6.80**		0.01	0.01	%			11/22/22 16:17	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			11/22/22 16:17	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			11/22/22 16:17	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			11/22/22 16:17	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			11/22/22 16:17	1
Silt (0.00391 to 0.0625mm)	**81.80**		0.01	0.01	%			11/22/22 16:17	1
Total Silt and Clay (0 to 0.0626mm)	**88.60**		0.01	0.01	%			11/22/22 16:17	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			11/22/22 16:17	1
Very Fine Sand (0.0625 to 0.125 mm)	**11.40**		0.01	0.01	%			11/22/22 16:17	1

Client Sample ID: LPBMP0004_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-9
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**4.92**		0.01	0.01	%			11/22/22 16:23	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			11/22/22 16:23	1
Fine Sand (0.125 to 0.25mm)	**8.44**		0.01	0.01	%			11/22/22 16:23	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			11/22/22 16:23	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			11/22/22 16:23	1
Silt (0.00391 to 0.0625mm)	**68.82**		0.01	0.01	%			11/22/22 16:23	1
Total Silt and Clay (0 to 0.0626mm)	**73.74**		0.01	0.01	%			11/22/22 16:23	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			11/22/22 16:23	1
Very Fine Sand (0.0625 to 0.125 mm)	**17.82**		0.01	0.01	%			11/22/22 16:23	1

Client Sample ID: LPBMP0002_DUP_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-10
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**6.18**		0.01	0.01	%			11/22/22 16:32	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			11/22/22 16:32	1
Fine Sand (0.125 to 0.25mm)	**7.09**		0.01	0.01	%			11/22/22 16:32	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			11/22/22 16:32	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			11/22/22 16:32	1
Silt (0.00391 to 0.0625mm)	**66.55**		0.01	0.01	%			11/22/22 16:32	1
Total Silt and Clay (0 to 0.0626mm)	**72.73**		0.01	0.01	%			11/22/22 16:32	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			11/22/22 16:32	1
Very Fine Sand (0.0625 to 0.125 mm)	**20.18**		0.01	0.01	%			11/22/22 16:32	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

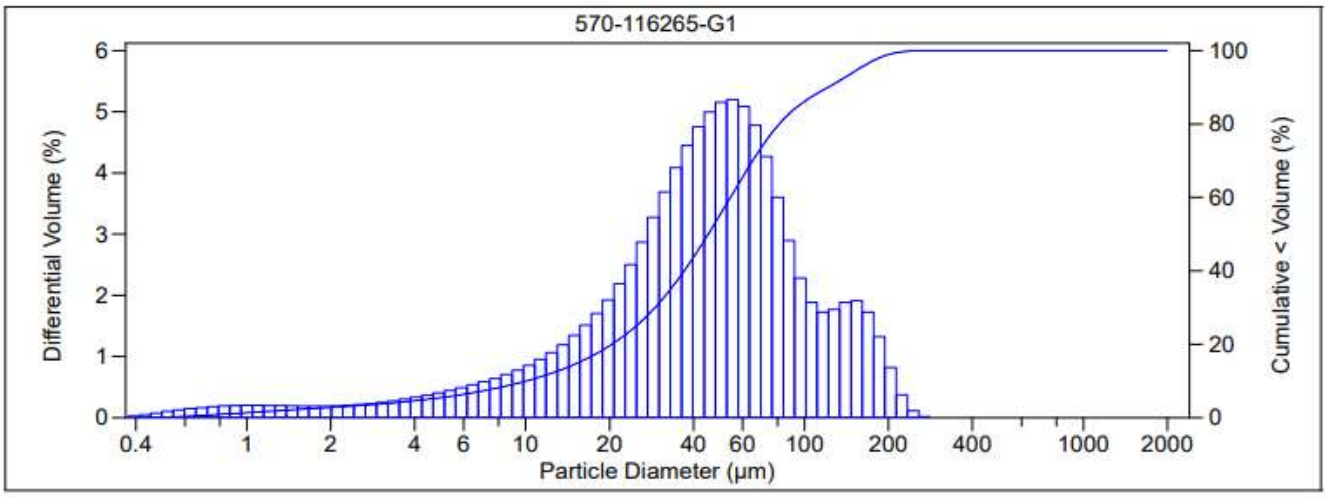
Haley & Aldrich, Inc.

Date Sampled:	11/08/22
Date Received:	11/08/22
Work Order No:	570-116265
Date Analyzed:	11/22/22
Method:	ASTM D4464M

Project: BMP Performance-001,002,009 and/or 011 Watersheds

Sample ID	Depth ft	Description	Mean Grain Size mm
B1BMP009_20221108		Silt	0.056

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.05	9.42	22.74	63.24	4.55	67.78



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

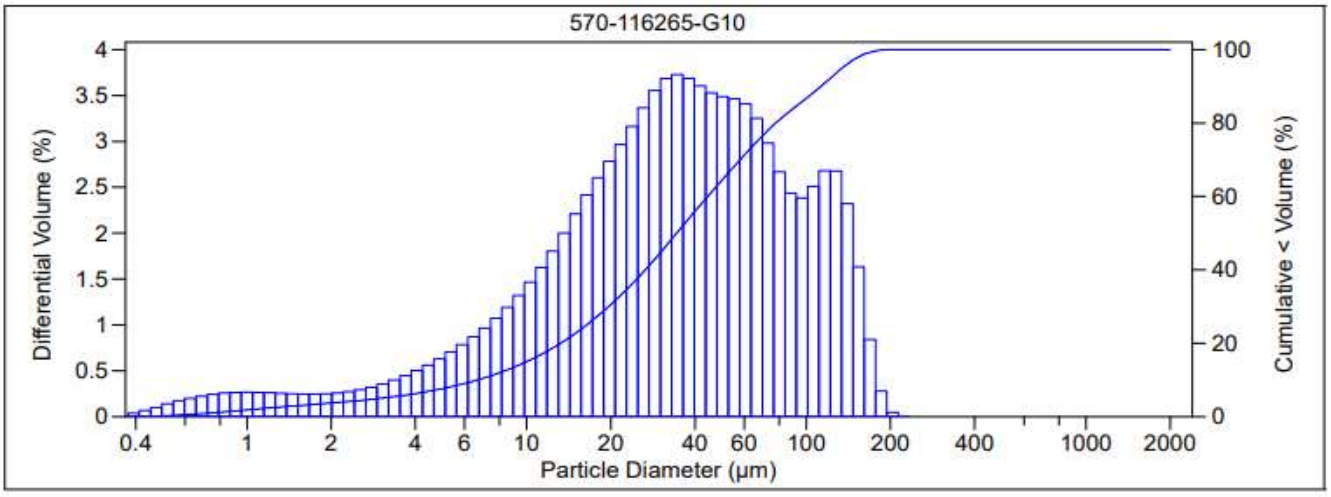
Haley & Aldrich, Inc.

Date Sampled:	11/08/22
Date Received:	11/08/22
Work Order No:	570-116265
Date Analyzed:	11/22/22
Method:	ASTM D4464M

Project: BMP Performance-001,002,009 and/or 011 Watersheds

Sample ID	Depth ft	Description	Mean Grain Size mm
LPBMP0002_DUP_20221108		Silt	0.047

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	7.09	20.18	66.55	6.18	72.73



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

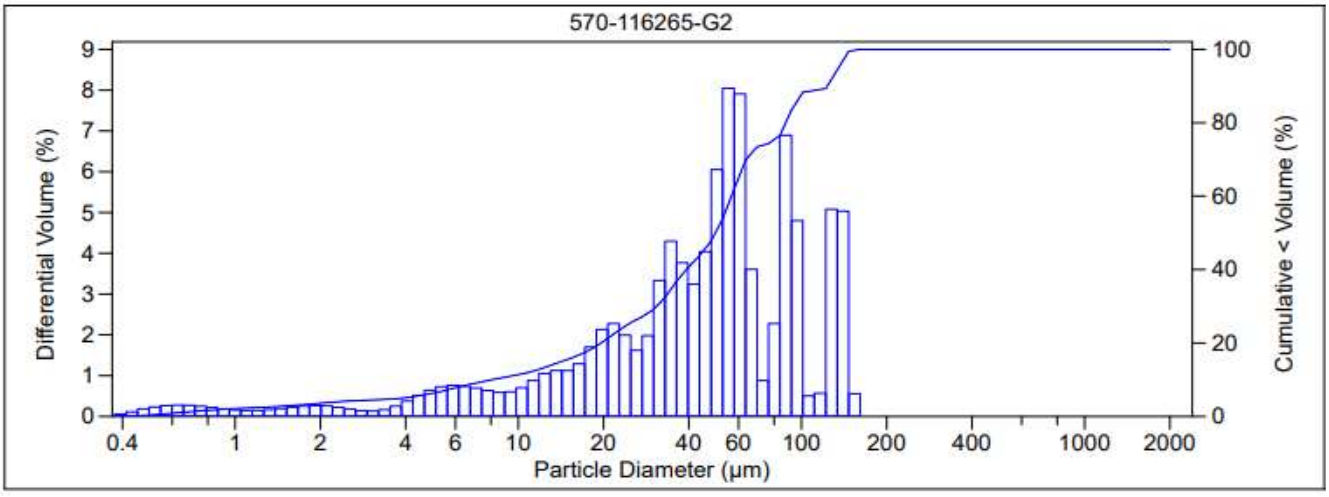
Haley & Aldrich, Inc.

Date Sampled:	11/08/22
Date Received:	11/08/22
Work Order No:	570-116265
Date Analyzed:	11/22/22
Method:	ASTM D4464M

Project: BMP Performance-001,002,009 and/or 011 Watersheds

Sample ID	Depth ft	Description	Mean Grain Size mm
B1BMP010_20221108		Silt	0.055

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	9.32	22.17	63.50	5.01	68.51



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PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

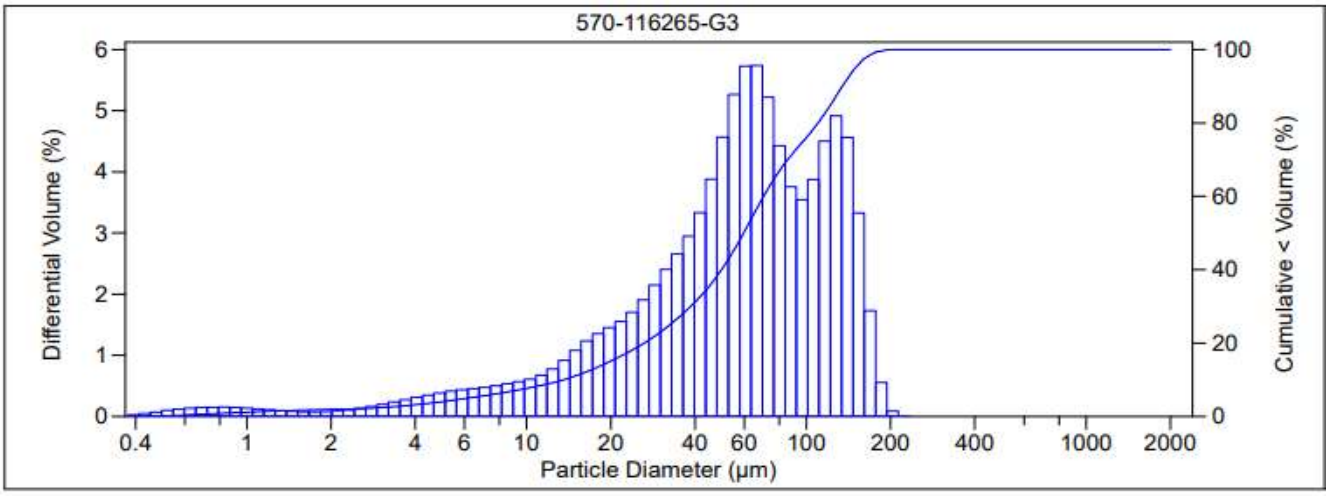
Haley & Aldrich, Inc.

Date Sampled:	11/08/22
Date Received:	11/08/22
Work Order No:	570-116265
Date Analyzed:	11/22/22
Method:	ASTM D4464M

Project: BMP Performance-001,002,009 and/or 011 Watersheds

Sample ID	Depth ft	Description	Mean Grain Size mm
B1BMP011_20221108		Very Fine Sand	0.067

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	13.89	33.30	49.69	3.13	52.81



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

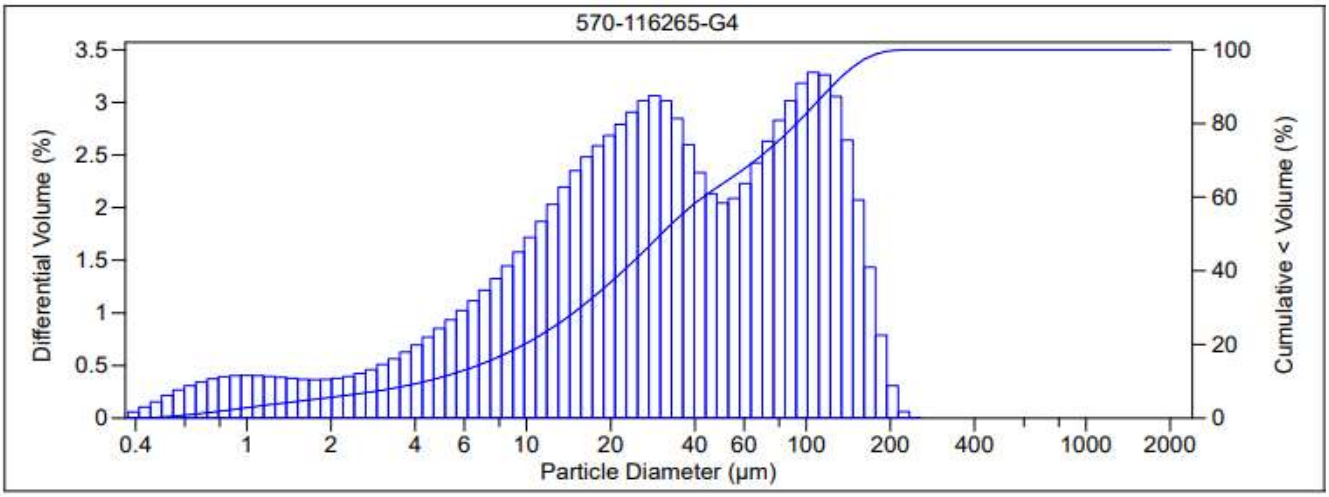
Haley & Aldrich, Inc.

Date Sampled:	11/08/22
Date Received:	11/08/22
Work Order No:	570-116265
Date Analyzed:	11/22/22
Method:	ASTM D4464M

Project: BMP Performance-001,002,009 and/or 011 Watersheds

Sample ID	Depth ft	Description	Mean Grain Size mm
ILBMP004_20221108		Silt	0.049

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	9.55	21.81	59.49	9.14	68.64



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

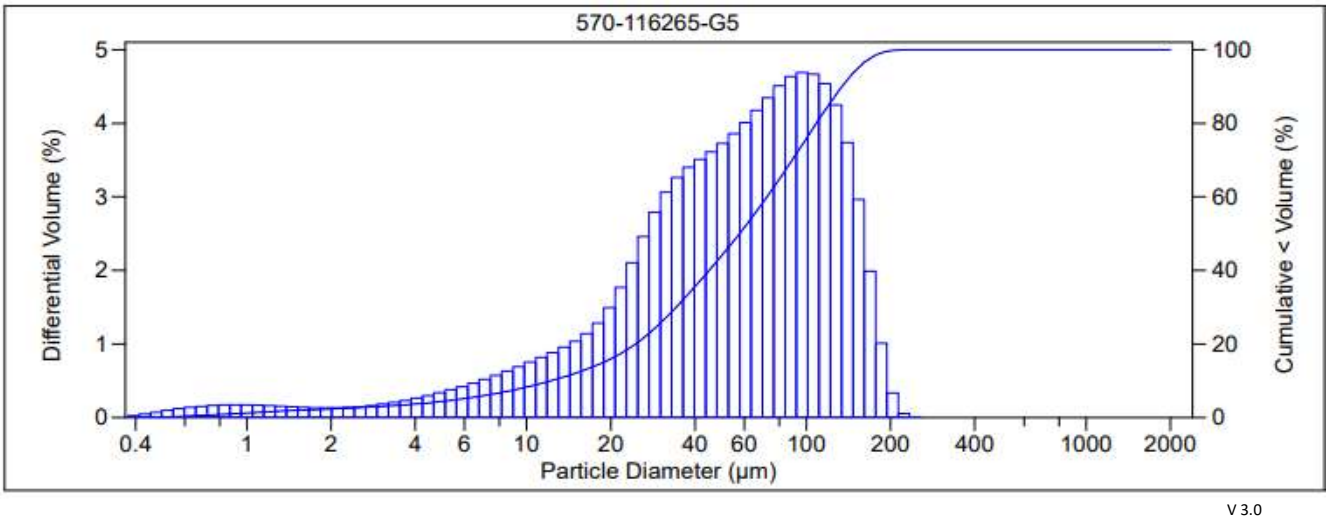
Haley & Aldrich, Inc.

Date Sampled:	11/08/22
Date Received:	11/08/22
Work Order No:	570-116265
Date Analyzed:	11/22/22
Method:	ASTM D4464M

Project: BMP Performance-001,002,009 and/or 011 Watersheds

Sample ID	Depth ft	Description	Mean Grain Size mm
ILBMP005_20221108		Very Fine Sand	0.067

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	13.22	33.35	49.83	3.61	53.44



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

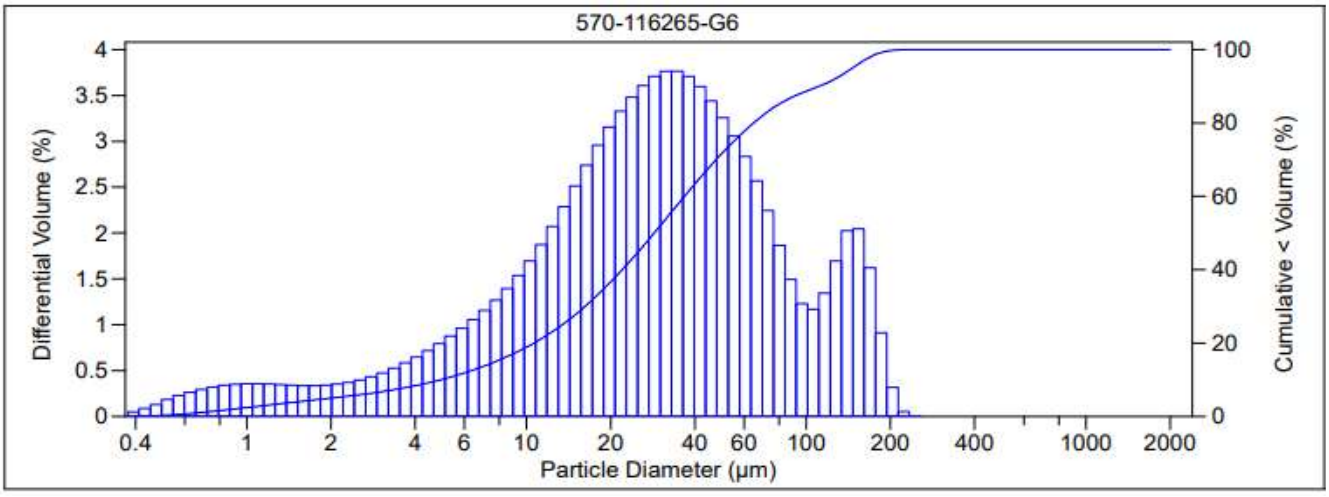
Haley & Aldrich, Inc.

Date Sampled:	11/08/22
Date Received:	11/08/22
Work Order No:	570-116265
Date Analyzed:	11/22/22
Method:	ASTM D4464M

Project: BMP Performance-001,002,009 and/or 011 Watersheds

Sample ID	Depth ft	Description	Mean Grain Size mm
ILBMP008_20221108		Silt	0.043

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	8.22	12.83	70.71	8.24	78.95



PARTICLE SIZE SUMMARY

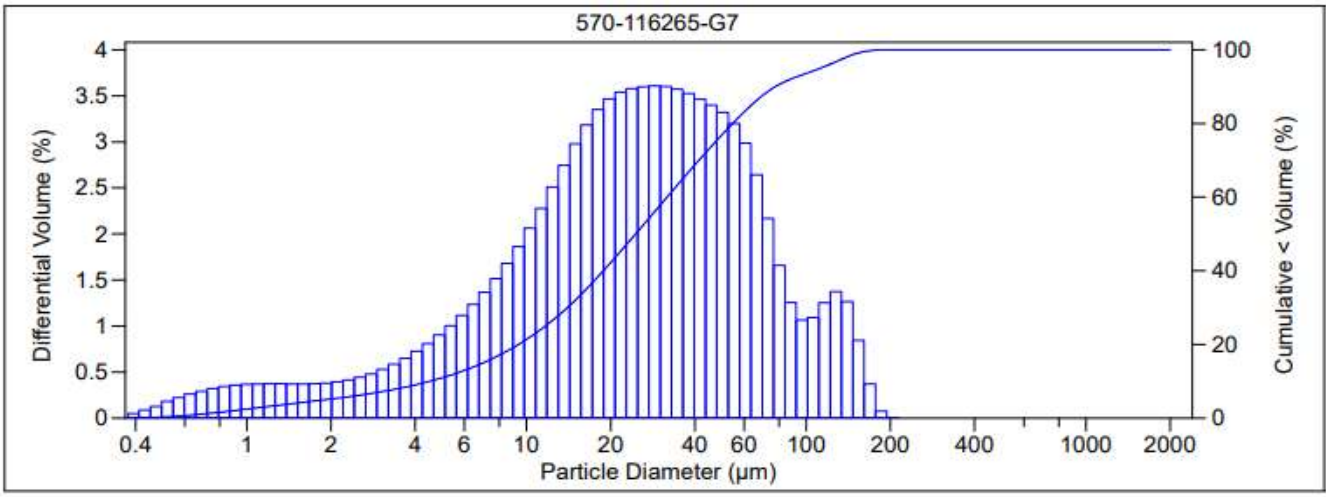
(ASTM D422 / D4464M)

Haley & Aldrich, Inc.	Date Sampled:	11/08/22
	Date Received:	11/08/22
	Work Order No:	570-116265
	Date Analyzed:	11/22/22
	Method:	ASTM D4464M

Project: BMP Performance-001,002,009 and/or 011 Watersheds

Sample ID	Depth ft	Description	Mean Grain Size mm
LPBMP0002_20221108		Silt	0.035

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	3.58	11.99	75.62	8.82	84.43



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

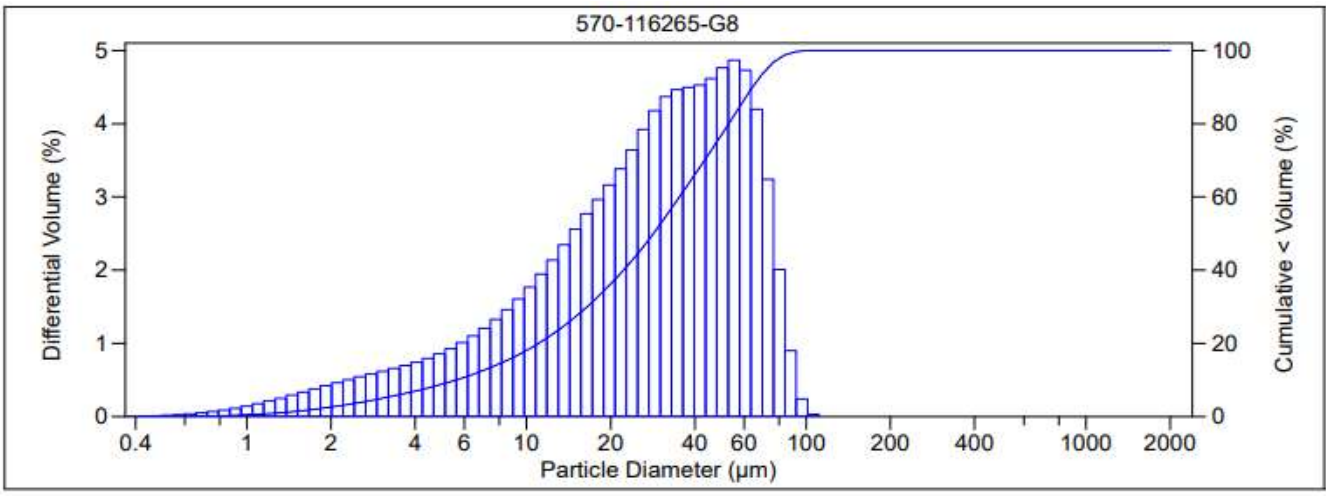
Haley & Aldrich, Inc.

Date Sampled:	11/08/22
Date Received:	11/08/22
Work Order No:	570-116265
Date Analyzed:	11/22/22
Method:	ASTM D4464M

Project: BMP Performance-001,002,009 and/or 011 Watersheds

Sample ID	Depth ft	Description	Mean Grain Size mm
LPBMP0003_20221108		Silt	0.032

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	11.40	81.80	6.80	88.60



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

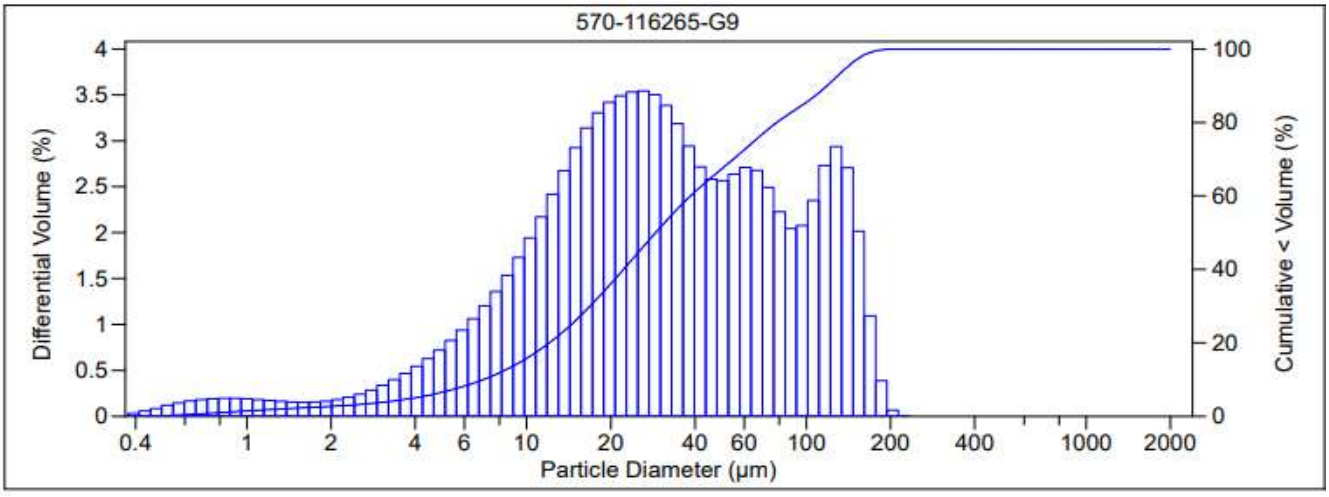
Haley & Aldrich, Inc.

Date Sampled:	11/08/22
Date Received:	11/08/22
Work Order No:	570-116265
Date Analyzed:	11/22/22
Method:	ASTM D4464M

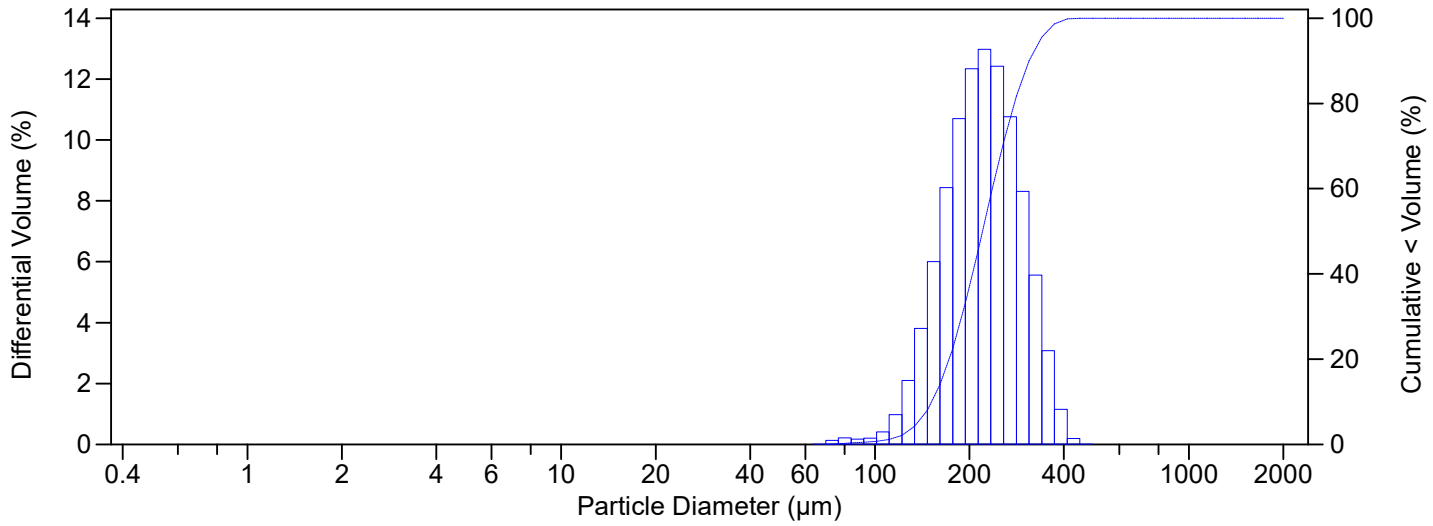
Project: BMP Performance-001,002,009 and/or 011 Watersheds

Sample ID	Depth ft	Description	Mean Grain Size mm
LPBMP0004_20221108		Silt	0.046

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	8.44	17.82	68.82	4.92	73.74



File name:	C:\LS13320\STD SAND_22 Nov 2022_17.47.14.$ls		
	STD SAND_22 Nov 2022_17.47.14.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	SP9M		
Run number:	21		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986954		
Optical model:	Fraunhofer.rf780d		
Residual:	1.01%		
LS 13 320	Aqueous Liquid Module		
Start time:	17:46 22 Nov 2022	Run length:	60 seconds
Pump speed:	49		
Obscuration:	11%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_22 Nov 2022_17.47.14.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	226.0 µm	S.D.:	61.19 µm
Median:	220.4 µm	Variance:	3745 µm^2
Mean/Median ratio:	1.026	Skewness:	0.413 Right skewed
Mode:	223.4 µm	Kurtosis:	-0.104 Platykurtic

d_{10}: 151.5 µm d_{50}: 220.4 µm d_{90}: 309.6 µm

Folk and Ward Statistics (Phi)

Mean:	2.19	Median:	2.18	Deviation:	0.40
Skewness:	0.05	Kurtosis:	0.96		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
136.3 µm	164.8 µm	181.0 µm	204.7 µm	220.4 µm	266.4 µm	289.7 µm	336.8 µm

STD SAND_22 Nov 2022_17.47.14.$ls

Particle Diameter µm	Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	2.70
125	64.5
250	32.8
500	0
1000	0
2000	

STD SAND_22 Nov 2022_17.47.14.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	24.95	0	1660	0
0.412	0	27.39	0	1822	0
0.452	0	30.07	0	2000	
0.496	0	33.01	0		
0.545	0	36.24	0		
0.598	0	39.78	0		
0.657	0	43.67	0		
0.721	0	47.94	0		
0.791	0	52.63	0		
0.869	0	57.77	0		
0.954	0	63.42	0.014		
1.047	0	69.62	0.13		
1.149	0	76.43	0.22		
1.261	0	83.90	0.18		
1.385	0	92.10	0.21		
1.520	0	101.1	0.41		
1.669	0	111.0	0.98		
1.832	0	121.8	2.11		
2.011	0	133.7	3.81		
2.208	0	146.8	6.01		
2.423	0	161.2	8.44		
2.660	0	176.9	10.7		
2.920	0	194.2	12.3		
3.206	0	213.2	13.0		
3.519	0	234.1	12.4		
3.863	0	256.9	10.8		
4.241	0	282.1	8.31		
4.656	0	309.6	5.56		
5.111	0	339.9	3.08		
5.611	0	373.1	1.15		
6.159	0	409.6	0.19		
6.761	0	449.7	0.0066		
7.422	0	493.6	0		
8.148	0	541.9	0		
8.944	0	594.9	0		
9.819	0	653.0	0		
10.78	0	716.9	0		
11.83	0	786.9	0		
12.99	0	863.9	0		
14.26	0	948.3	0		
15.65	0	1041	0		
17.18	0	1143	0		
18.86	0	1255	0		
20.71	0	1377	0		
22.73	0	1512	0		

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-281070/5
Matrix: Water
Analysis Batch: 281070

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			11/14/22 07:39	1

Lab Sample ID: LCS 570-281070/6
Matrix: Water
Analysis Batch: 281070

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	50.1		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-281070/7
Matrix: Water
Analysis Batch: 281070

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	50.0	50.2		mg/L		100	90 - 110	0	15

Lab Sample ID: 570-116412-G-2 MS
Matrix: Water
Analysis Batch: 281070

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	13		50.0	65.7		mg/L		105	80 - 120

Lab Sample ID: 570-116412-G-2 MSD
Matrix: Water
Analysis Batch: 281070

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	13		50.0	65.7		mg/L		105	80 - 120	0	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-280630/1-A
Matrix: Water
Analysis Batch: 280926

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 280630

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		500	56	ug/L		11/11/22 08:06	11/11/22 19:42	1
Manganese	7.20	J,DX	50	1.3	ug/L		11/11/22 08:06	11/11/22 19:42	1
Zinc	ND		250	4.6	ug/L		11/11/22 08:06	11/11/22 19:42	1

Lab Sample ID: LCS 570-280630/2-A
Matrix: Water
Analysis Batch: 280926

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 280630

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	500	466	J,DX	ug/L		93	85 - 115
Manganese	500	476		ug/L		95	85 - 115
Zinc	500	480		ug/L		96	85 - 115

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 570-280630/3-A
Matrix: Water
Analysis Batch: 280926

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 280630

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron			500	466	J,DX	ug/L		93	85 - 115	0	20
Manganese			500	473		ug/L		95	85 - 115	1	20
Zinc			500	476		ug/L		95	85 - 115	1	20

Lab Sample ID: 570-116724-A-1-B MS
Matrix: Water
Analysis Batch: 280926

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 280630

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Iron	2800		500	3590	BB	ug/L		151	80 - 120		
Manganese	97	MB	500	588		ug/L		98	80 - 120		
Zinc	190	J,DX	500	678		ug/L		98	80 - 120		

Lab Sample ID: 570-116724-A-1-C MSD
Matrix: Water
Analysis Batch: 280926

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 280630

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	2800		500	3610	BB	ug/L		154	80 - 120	0	20
Manganese	97	MB	500	590		ug/L		99	80 - 120	0	20
Zinc	190	J,DX	500	678		ug/L		99	80 - 120	0	20

Lab Sample ID: MB 570-280007/1-A
Matrix: Water
Analysis Batch: 280214

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		500	56	ug/L			11/09/22 18:40	1
Manganese	ND		50	1.3	ug/L			11/09/22 18:40	1
Zinc	ND		250	4.6	ug/L			11/09/22 18:40	1

Lab Sample ID: LCS 570-280007/2-A
Matrix: Water
Analysis Batch: 280214

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Iron			500	449	J,DX	ug/L		90	85 - 115		
Manganese			500	447		ug/L		89	85 - 115		
Zinc			500	447		ug/L		89	85 - 115		

Lab Sample ID: LCSD 570-280007/3-A
Matrix: Water
Analysis Batch: 280214

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron			500	442	J,DX	ug/L		88	85 - 115	1	20
Manganese			500	439		ug/L		88	85 - 115	2	20
Zinc			500	440		ug/L		88	85 - 115	2	20

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 570-116109-A-1-C MS ^5
Matrix: Water
Analysis Batch: 280447

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	ND		500	520	J,DX	ug/L		104	80 - 120
Manganese	330		500	807		ug/L		95	80 - 120
Zinc	1300		500	1730		ug/L		84	80 - 120

Lab Sample ID: 570-116109-A-1-D MSD ^5
Matrix: Water
Analysis Batch: 280447

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	ND		500	523	J,DX	ug/L		105	80 - 120	1	20
Manganese	330		500	812		ug/L		96	80 - 120	1	20
Zinc	1300		500	1740		ug/L		88	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-280612/1-A
Matrix: Water
Analysis Batch: 280811

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 280612

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L		11/11/22 06:54	11/11/22 12:39	1
Cadmium	ND		1.0	0.13	ug/L		11/11/22 06:54	11/11/22 12:39	1
Copper	ND		2.0	0.32	ug/L		11/11/22 06:54	11/11/22 12:39	1
Lead	ND		1.0	0.12	ug/L		11/11/22 06:54	11/11/22 12:39	1
Selenium	ND		2.0	0.52	ug/L		11/11/22 06:54	11/11/22 12:39	1

Lab Sample ID: LCS 570-280612/2-A
Matrix: Water
Analysis Batch: 280811

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 280612

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	78.5		ug/L		98	85 - 115
Cadmium	80.0	77.0		ug/L		96	85 - 115
Copper	80.0	78.4		ug/L		98	85 - 115
Lead	80.0	78.4		ug/L		98	85 - 115
Selenium	80.0	79.1		ug/L		99	85 - 115

Lab Sample ID: LCSD 570-280612/3-A
Matrix: Water
Analysis Batch: 280811

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 280612

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	80.0	77.7		ug/L		97	85 - 115	1	20
Cadmium	80.0	76.6		ug/L		96	85 - 115	1	20
Copper	80.0	78.1		ug/L		98	85 - 115	0	20
Lead	80.0	78.8		ug/L		99	85 - 115	0	20
Selenium	80.0	78.4		ug/L		98	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-116265-1 MS
Matrix: Water
Analysis Batch: 280810

Client Sample ID: B1BMP009_20221108
Prep Type: Total Recoverable
Prep Batch: 280612

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.98	J,DX	80.0	78.8		ug/L		97	80 - 120
Cadmium	0.25	J,DX	80.0	79.9		ug/L		100	80 - 120
Copper	7.0		80.0	87.5		ug/L		101	80 - 120
Lead	3.1		80.0	84.3		ug/L		101	80 - 120
Selenium	ND		80.0	78.0		ug/L		97	80 - 120

Lab Sample ID: 570-116265-1 MSD
Matrix: Water
Analysis Batch: 280810

Client Sample ID: B1BMP009_20221108
Prep Type: Total Recoverable
Prep Batch: 280612

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.98	J,DX	80.0	80.5		ug/L		99	80 - 120	2	20
Cadmium	0.25	J,DX	80.0	81.7		ug/L		102	80 - 120	2	20
Copper	7.0		80.0	88.9		ug/L		102	80 - 120	2	20
Lead	3.1		80.0	85.6		ug/L		103	80 - 120	2	20
Selenium	ND		80.0	79.9		ug/L		100	80 - 120	2	20

Lab Sample ID: MB 570-279970/1-A
Matrix: Water
Analysis Batch: 280249

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			11/09/22 14:18	1
Copper	ND		2.0	0.32	ug/L			11/09/22 14:18	1
Lead	ND		1.0	0.12	ug/L			11/09/22 14:18	1

Lab Sample ID: LCS 570-279970/2-A
Matrix: Water
Analysis Batch: 280249

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	81.8		ug/L		102	85 - 115
Copper	80.0	81.3		ug/L		102	85 - 115
Lead	80.0	82.1		ug/L		103	85 - 115

Lab Sample ID: LCSD 570-279970/3-A
Matrix: Water
Analysis Batch: 280249

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	78.9		ug/L		99	85 - 115	4	20
Copper	80.0	77.9		ug/L		97	85 - 115	4	20
Lead	80.0	79.5		ug/L		99	85 - 115	3	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-116347-A-11-B MS
Matrix: Water
Analysis Batch: 280249

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	62.1	LN	ug/L		78	80 - 120
Copper	4.9		80.0	66.9	LN	ug/L		77	80 - 120
Lead	0.22	J,DX	80.0	62.7	LN	ug/L		78	80 - 120

Lab Sample ID: 570-116347-A-11-C MSD
Matrix: Water
Analysis Batch: 280249

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	73.9		ug/L		92	80 - 120	17	20
Copper	4.9		80.0	78.7		ug/L		92	80 - 120	16	20
Lead	0.22	J,DX	80.0	74.5		ug/L		93	80 - 120	17	20

Lab Sample ID: MB 570-279970/1-A
Matrix: Water
Analysis Batch: 280322

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L			11/10/22 09:50	1
Cadmium	ND		1.0	0.13	ug/L			11/10/22 09:50	1
Copper	ND		2.0	0.32	ug/L			11/10/22 09:50	1
Lead	ND		1.0	0.12	ug/L			11/10/22 09:50	1
Selenium	ND		2.0	0.52	ug/L			11/10/22 09:50	1

Lab Sample ID: LCS 570-279970/2-A
Matrix: Water
Analysis Batch: 280322

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	74.9		ug/L		94	85 - 115
Cadmium	80.0	73.7		ug/L		92	85 - 115
Copper	80.0	76.0		ug/L		95	85 - 115
Lead	80.0	74.6		ug/L		93	85 - 115
Selenium	80.0	72.9		ug/L		91	85 - 115

Lab Sample ID: LCSD 570-279970/3-A
Matrix: Water
Analysis Batch: 280322

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	80.0	72.1		ug/L		90	85 - 115	4	20
Cadmium	80.0	70.7		ug/L		88	85 - 115	4	20
Copper	80.0	72.7		ug/L		91	85 - 115	5	20
Lead	80.0	72.3		ug/L		90	85 - 115	3	20
Selenium	80.0	70.2		ug/L		88	85 - 115	4	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-116347-A-3-B MS
Matrix: Water
Analysis Batch: 280322

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.65	J,DX	80.0	76.3		ug/L		95	80 - 120
Cadmium	ND		80.0	74.0		ug/L		92	80 - 120
Copper	6.0		80.0	82.5		ug/L		96	80 - 120
Lead	0.40	J,DX	80.0	74.3		ug/L		92	80 - 120
Selenium	ND		80.0	73.9		ug/L		92	80 - 120

Lab Sample ID: 570-116347-A-3-C MSD
Matrix: Water
Analysis Batch: 280322

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.65	J,DX	80.0	79.1		ug/L		98	80 - 120	4	20
Cadmium	ND		80.0	75.6		ug/L		95	80 - 120	2	20
Copper	6.0		80.0	85.0		ug/L		99	80 - 120	3	20
Lead	0.40	J,DX	80.0	78.0		ug/L		97	80 - 120	5	20
Selenium	ND		80.0	74.6		ug/L		93	80 - 120	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-280721/1
Matrix: Water
Analysis Batch: 280721

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			11/11/22 11:04	1

Lab Sample ID: LCS 570-280721/2
Matrix: Water
Analysis Batch: 280721

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.0		mg/L		99	77 - 116

Lab Sample ID: LCSD 570-280721/3
Matrix: Water
Analysis Batch: 280721

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	97.0		mg/L		97	77 - 116	2	10

Lab Sample ID: 570-116265-11 DU
Matrix: Water
Analysis Batch: 280721

Client Sample ID: EPSW001IE01_20221108
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	850		913		mg/L		7	10

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-1
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

HPLC/IC

Analysis Batch: 281070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Total/NA	Water	300.0	
MB 570-281070/5	Method Blank	Total/NA	Water	300.0	
LCS 570-281070/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-281070/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-116412-G-2 MS	Matrix Spike	Total/NA	Water	300.0	
570-116412-G-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Filtration Batch: 279970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-1	B1BMP009_20221108	Dissolved	Water	Filtration	
570-116265-2	B1BMP010_20221108	Dissolved	Water	Filtration	
570-116265-3	B1BMP011_20221108	Dissolved	Water	Filtration	
570-116265-4	ILBMP0004_20221108	Dissolved	Water	Filtration	
570-116265-5	ILBMP0005_20221108	Dissolved	Water	Filtration	
570-116265-6	ILBMP0008_20221108	Dissolved	Water	Filtration	
570-116265-7	LPBMP0002_20221108	Dissolved	Water	Filtration	
570-116265-8	LPBMP0003_20221108	Dissolved	Water	Filtration	
570-116265-9	LPBMP0004_20221108	Dissolved	Water	Filtration	
570-116265-10	LPBMP0002_DUP_20221108	Dissolved	Water	Filtration	
570-116265-11	EPSW001IE01_20221108	Dissolved	Water	Filtration	
MB 570-279970/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-279970/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-279970/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-116347-A-3-B MS	Matrix Spike	Dissolved	Water	Filtration	
570-116347-A-3-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	
570-116347-A-11-B MS	Matrix Spike	Dissolved	Water	Filtration	
570-116347-A-11-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 280007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Dissolved	Water	Filtration	
MB 570-280007/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-280007/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-280007/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-116109-A-1-C MS ^5	Matrix Spike	Dissolved	Water	Filtration	
570-116109-A-1-D MSD ^5	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 280214

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Dissolved	Water	200.7 Rev 4.4	280007
MB 570-280007/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	280007
LCS 570-280007/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	280007
LCSD 570-280007/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	280007

Analysis Batch: 280249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-1	B1BMP009_20221108	Dissolved	Water	200.8	279970
570-116265-2	B1BMP010_20221108	Dissolved	Water	200.8	279970

Metals (Continued)

Analysis Batch: 280249 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-3	B1BMP011_20221108	Dissolved	Water	200.8	279970
570-116265-4	ILBMP0004_20221108	Dissolved	Water	200.8	279970
570-116265-5	ILBMP0005_20221108	Dissolved	Water	200.8	279970
570-116265-6	ILBMP0008_20221108	Dissolved	Water	200.8	279970
570-116265-7	LPBMP0002_20221108	Dissolved	Water	200.8	279970
570-116265-8	LPBMP0003_20221108	Dissolved	Water	200.8	279970
570-116265-9	LPBMP0004_20221108	Dissolved	Water	200.8	279970
570-116265-10	LPBMP0002_DUP_20221108	Dissolved	Water	200.8	279970
MB 570-279970/1-A	Method Blank	Dissolved	Water	200.8	279970
LCS 570-279970/2-A	Lab Control Sample	Dissolved	Water	200.8	279970
LCSD 570-279970/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	279970
570-116347-A-11-B MS	Matrix Spike	Dissolved	Water	200.8	279970
570-116347-A-11-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	279970

Analysis Batch: 280322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Dissolved	Water	200.8	279970
MB 570-279970/1-A	Method Blank	Dissolved	Water	200.8	279970
LCS 570-279970/2-A	Lab Control Sample	Dissolved	Water	200.8	279970
LCSD 570-279970/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	279970
570-116347-A-3-B MS	Matrix Spike	Dissolved	Water	200.8	279970
570-116347-A-3-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	279970

Analysis Batch: 280447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116109-A-1-C MS ^5	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	280007
570-116109-A-1-D MSD ^5	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	280007

Prep Batch: 280612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-1	B1BMP009_20221108	Total Recoverable	Water	200.8	
570-116265-2	B1BMP010_20221108	Total Recoverable	Water	200.8	
570-116265-3	B1BMP011_20221108	Total Recoverable	Water	200.8	
570-116265-4	ILBMP0004_20221108	Total Recoverable	Water	200.8	
570-116265-5	ILBMP0005_20221108	Total Recoverable	Water	200.8	
570-116265-6	ILBMP0008_20221108	Total Recoverable	Water	200.8	
570-116265-7	LPBMP0002_20221108	Total Recoverable	Water	200.8	
570-116265-8	LPBMP0003_20221108	Total Recoverable	Water	200.8	
570-116265-9	LPBMP0004_20221108	Total Recoverable	Water	200.8	
570-116265-10	LPBMP0002_DUP_20221108	Total Recoverable	Water	200.8	
570-116265-11	EPSW001IE01_20221108	Total Recoverable	Water	200.8	
MB 570-280612/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-280612/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-280612/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-116265-1 MS	B1BMP009_20221108	Total Recoverable	Water	200.8	
570-116265-1 MSD	B1BMP009_20221108	Total Recoverable	Water	200.8	

Prep Batch: 280630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Total Recoverable	Water	200.7	

Metals (Continued)

Prep Batch: 280630 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-280630/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-280630/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-280630/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-116724-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.7	
570-116724-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Analysis Batch: 280810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-1	B1BMP009_20221108	Total Recoverable	Water	200.8	280612
570-116265-2	B1BMP010_20221108	Total Recoverable	Water	200.8	280612
570-116265-3	B1BMP011_20221108	Total Recoverable	Water	200.8	280612
570-116265-4	ILBMP0004_20221108	Total Recoverable	Water	200.8	280612
570-116265-5	ILBMP0005_20221108	Total Recoverable	Water	200.8	280612
570-116265-6	ILBMP0008_20221108	Total Recoverable	Water	200.8	280612
570-116265-7	LPBMP0002_20221108	Total Recoverable	Water	200.8	280612
570-116265-8	LPBMP0003_20221108	Total Recoverable	Water	200.8	280612
570-116265-9	LPBMP0004_20221108	Total Recoverable	Water	200.8	280612
570-116265-10	LPBMP0002_DUP_20221108	Total Recoverable	Water	200.8	280612
570-116265-11	EPSW001IE01_20221108	Total Recoverable	Water	200.8	280612
570-116265-1 MS	B1BMP009_20221108	Total Recoverable	Water	200.8	280612
570-116265-1 MSD	B1BMP009_20221108	Total Recoverable	Water	200.8	280612

Analysis Batch: 280811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-280612/1-A	Method Blank	Total Recoverable	Water	200.8	280612
LCS 570-280612/2-A	Lab Control Sample	Total Recoverable	Water	200.8	280612
LCSD 570-280612/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	280612

Analysis Batch: 280926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Total Recoverable	Water	200.7 Rev 4.4	280630
MB 570-280630/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	280630
LCS 570-280630/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	280630
LCSD 570-280630/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	280630
570-116724-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	280630
570-116724-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	280630

General Chemistry

Analysis Batch: 280721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-1	B1BMP009_20221108	Total/NA	Water	SM 2540D	
570-116265-2	B1BMP010_20221108	Total/NA	Water	SM 2540D	
570-116265-3	B1BMP011_20221108	Total/NA	Water	SM 2540D	
570-116265-4	ILBMP0004_20221108	Total/NA	Water	SM 2540D	
570-116265-5	ILBMP0005_20221108	Total/NA	Water	SM 2540D	
570-116265-6	ILBMP0008_20221108	Total/NA	Water	SM 2540D	
570-116265-7	LPBMP0002_20221108	Total/NA	Water	SM 2540D	
570-116265-8	LPBMP0003_20221108	Total/NA	Water	SM 2540D	
570-116265-9	LPBMP0004_20221108	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 280721 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-10	LPBMP0002_DUP_20221108	Total/NA	Water	SM 2540D	
570-116265-11	EPSW001IE01_20221108	Total/NA	Water	SM 2540D	
MB 570-280721/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-280721/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-280721/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-116265-11 DU	EPSW001IE01_20221108	Total/NA	Water	SM 2540D	

Geotechnical

Analysis Batch: 283613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-1	B1BMP009_20221108	Total/NA	Water	D4464	
570-116265-2	B1BMP010_20221108	Total/NA	Water	D4464	
570-116265-3	B1BMP011_20221108	Total/NA	Water	D4464	
570-116265-4	ILBMP0004_20221108	Total/NA	Water	D4464	
570-116265-5	ILBMP0005_20221108	Total/NA	Water	D4464	
570-116265-6	ILBMP0008_20221108	Total/NA	Water	D4464	
570-116265-7	LPBMP0002_20221108	Total/NA	Water	D4464	
570-116265-8	LPBMP0003_20221108	Total/NA	Water	D4464	
570-116265-9	LPBMP0004_20221108	Total/NA	Water	D4464	
570-116265-10	LPBMP0002_DUP_20221108	Total/NA	Water	D4464	
LCSD 570-283613/21	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-1
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: B1BMP009_20221108
Lab Sample ID: 570-116265-1
Date Collected: 11/08/22 06:00
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	279970	11/09/22 11:25	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280249	11/09/22 14:58	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	280612	11/11/22 06:54	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			280810	11/11/22 12:24	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	280721	11/11/22 11:04	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			283613	11/22/22 15:15	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: B1BMP010_20221108
Lab Sample ID: 570-116265-2
Date Collected: 11/08/22 06:05
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	279970	11/09/22 11:25	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280249	11/09/22 14:31	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	280612	11/11/22 06:54	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			280810	11/11/22 12:32	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	280721	11/11/22 11:04	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			283613	11/22/22 15:33	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: B1BMP011_20221108
Lab Sample ID: 570-116265-3
Date Collected: 11/08/22 06:10
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	279970	11/09/22 11:25	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280249	11/09/22 14:33	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	280612	11/11/22 06:54	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			280810	11/11/22 12:34	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	800 mL	1000 mL	280721	11/11/22 11:04	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			283613	11/22/22 15:41	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-1
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: ILBMP0004_20221108
Lab Sample ID: 570-116265-4
Date Collected: 11/08/22 06:25
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	279970	11/09/22 11:25	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280249	11/09/22 14:36	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	280612	11/11/22 06:54	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			280810	11/11/22 12:37	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	280721	11/11/22 11:04	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			283613	11/22/22 15:48	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: ILBMP0005_20221108
Lab Sample ID: 570-116265-5
Date Collected: 11/08/22 06:30
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	279970	11/09/22 11:25	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280249	11/09/22 14:38	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	280612	11/11/22 06:54	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			280810	11/11/22 12:44	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	280721	11/11/22 11:04	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			283613	11/22/22 15:55	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: ILBMP0008_20221108
Lab Sample ID: 570-116265-6
Date Collected: 11/08/22 06:35
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	279970	11/09/22 11:25	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280249	11/09/22 14:45	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	280612	11/11/22 06:54	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			280810	11/11/22 12:47	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	280721	11/11/22 11:04	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			283613	11/22/22 16:05	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-1
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: LPBMP0002_20221108
Lab Sample ID: 570-116265-7
Date Collected: 11/08/22 07:15
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	279970	11/09/22 11:25	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280249	11/09/22 14:47	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	280612	11/11/22 06:54	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			280810	11/11/22 12:49	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	280721	11/11/22 11:04	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			283613	11/22/22 16:11	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: LPBMP0003_20221108
Lab Sample ID: 570-116265-8
Date Collected: 11/08/22 07:10
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	279970	11/09/22 11:25	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280249	11/09/22 14:49	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	280612	11/11/22 06:54	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			280810	11/11/22 12:52	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	280721	11/11/22 11:04	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			283613	11/22/22 16:17	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: LPBMP0004_20221108
Lab Sample ID: 570-116265-9
Date Collected: 11/08/22 07:00
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	279970	11/09/22 11:25	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280249	11/09/22 14:51	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	280612	11/11/22 06:54	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			280810	11/11/22 12:54	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	800 mL	1000 mL	280721	11/11/22 11:04	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			283613	11/22/22 16:23	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-1
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: LPBMP0002_DUP_20221108
Lab Sample ID: 570-116265-10
Date Collected: 11/08/22 07:15
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	279970	11/09/22 11:25	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280249	11/09/22 14:53	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	280612	11/11/22 06:54	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			280810	11/11/22 12:57	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	280721	11/11/22 11:04	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			283613	11/22/22 16:32	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EPSW001IE01_20221108
Lab Sample ID: 570-116265-11
Date Collected: 11/08/22 07:00
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	4 mL	4 mL	281070	11/14/22 08:30	PS	EET CAL 4
	Instrument ID: IC7									
Dissolved	Filtration	Filtration			50 mL	50 mL	280007	11/09/22 12:47	ECX6	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			280214	11/09/22 19:01	P1R	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	280630	11/11/22 08:06	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			280926	11/11/22 20:16	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	279970	11/09/22 11:25	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280322	11/10/22 09:57	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	280612	11/11/22 06:54	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			280810	11/11/22 12:59	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	30 mL	1000 mL	280721	11/11/22 11:04	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-1
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	12-01-22
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-1
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-116265-1	B1BMP009_20221108	Water	11/08/22 06:00	11/08/22 16:20
570-116265-2	B1BMP010_20221108	Water	11/08/22 06:05	11/08/22 16:20
570-116265-3	B1BMP011_20221108	Water	11/08/22 06:10	11/08/22 16:20
570-116265-4	ILBMP0004_20221108	Water	11/08/22 06:25	11/08/22 16:20
570-116265-5	ILBMP0005_20221108	Water	11/08/22 06:30	11/08/22 16:20
570-116265-6	ILBMP0008_20221108	Water	11/08/22 06:35	11/08/22 16:20
570-116265-7	LPBMP0002_20221108	Water	11/08/22 07:15	11/08/22 16:20
570-116265-8	LPBMP0003_20221108	Water	11/08/22 07:10	11/08/22 16:20
570-116265-9	LPBMP0004_20221108	Water	11/08/22 07:00	11/08/22 16:20
570-116265-10	LPBMP0002_DUP_20221108	Water	11/08/22 07:15	11/08/22 16:20
570-116265-11	EPSW001IE01_20221108	Water	11/08/22 07:00	11/08/22 16:20

116265

Chain of Custody Record for
Chain of Custody Record

eurofins

Eurofins Calscience, Inc.

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under this Cal be performed in accordance with the T&Cs with Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☐ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below _____			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8: Cd, Cu, Pb (Total Recoverable)	Method 200.8: Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250ml Amber	2-1L Amber	1-1L Poly	1 1L Poly
B1BMP0009_20221108	11/8/2022	600	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_20221108	11/8/2022	0605	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_20221108	11/8/2022	0610	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0004_20221108	11/8/2022	0625	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005_20221108	11/8/2022	0630	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008_20221108	11/8/2022	0635	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_20221108	11/8/2022	0715	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_20221108	11/8/2022	0710	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_20221108	11/8/2022	0700	G	WM	8	Y	Y	X	X	X	X	X	X	X
LPBMP0002_DUP_20221108	11/8/2022	0715	G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____								4	4	2	1	1	1	1

570-116265 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No._____

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	[illegible]	11/8/22 1315	[signature] EC	11/8/22 1315
[signature] EC	EC	11/8/22 1620		
			Received in Laboratory by:	

2.4/2.2 3.5/3.3 3.3/3.1 3.9/3.7 2.8/2.6 3.9/3.7 1.9/1.7 SC12

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

11/23/2022

116265

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other

TestAmerica services under the Col[illegible]e performed in accordance with the T&C within Blank Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, its subsidiaries and affiliates and TestAmer[illegible] laboratories

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▪ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No.
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trifium (E906.0)				Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250ml Amber	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20221108	11/8/22	0700	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH, 6= Other ____								1	1	1	1	1	4	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments: **ECI #44009815**

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: JHA	Date/Time: 11/7/22 1315	Received by: EC	Date/Time: 11/8/22 1315
Relinquished by:	Company: EC	Date/Time: 11/8/22 1620	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.4/2.2 3.5/3.3 3.3/3.1 3.9/3.7 2.8/2.6 3.9/3.7 1.9/1.7 SC12

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

11/23/2022

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No.: 570-196000 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-116265-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/13/2022			
City: Earth City	TAT Requested (days):			
State Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: BMP Performance-001 002 009 and/or 011 Watersheds	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M Hexane
N None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad Gross Alpha Only- Dissolved	901 1_Cs/FIII_Geo_0 K-40 and Cesium-137	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
EPSW001IE01_20221108 (570-116265-11)	11/8/22	07 00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		11/9/22 1256				

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

11/23/2022

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-196020 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-116265-1
Address: 5755 8th Street East, ,	Due Date Requested: 11/18/2022			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: BMP Performance-001 002,009 and/or 011 Watersheds	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U - Acetone, V MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note.
			Preservation Code:							
B1BMP009_20221108 (570-116265-1)	11/8/22	06 00 Pacific		Water			X	X	2	
B1BMP010_20221108 (570-116265-2)	11/8/22	06 05 Pacific		Water			X	X	2	
B1BMP011_20221108 (570-116265-3)	11/8/22	06 10 Pacific		Water			X	X	2	
ILBMP004_20221108 (570-116265-4)	11/8/22	06 25 Pacific		Water			X	X	2	
ILBMP005_20221108 (570-116265-5)	11/8/22	06 30 Pacific		Water			X	X	2	
ILBMP008_20221108 (570-116265-6)	11/8/22	06 35 Pacific		Water			X	X	2	
LPBMP0002_20221108 (570-116265-7)	11/8/22	07 15 Pacific		Water			X	X	2	
LPBMP0003_20221108 (570-116265-8)	11/8/22	07 10 Pacific		Water			X	X	2	
LPBMP0004_20221108 (570-116265-9)	11/8/22	07 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Calscience

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 11/9/22 1356	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

11/23/2022

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel, Virendra	Carrier Tracking No(s):	COC No: 570-196020 2
Client Contact: Shipping/Receiving	Phone.	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-116265-1
Address: 5755 8th Street East, ,	Due Date Requested: 11/18/2022			
City: Tacoma	TAT Requested (days):			
State Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: BMP Performance-001 002 009 and/or 011 Watersheds	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M Hexane
N None
O AsNaO2
P Na2O4S
Q Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LPBMP0002_DUP_20221108 (570-116265-10)	11/8/22	07 15 Pacific		Water			X	X	2	
EPSW001IE01_20221108 (570-116265-11)	11/8/22	07 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date.	Time	Method of Shipment:

Relinquished by:	Date/Time: 11/9/22 1356	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-196020.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-116265-1
Address: 5755 8th Street East, ,	Due Date Requested: 11/18/2022			Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: BMP Performance-001,002,009 and/or 011 Watersheds	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
B1BMP009_20221108 (570-116265-1)	11/8/22	06:00 Pacific		Water			X	X	2	
B1BMP010_20221108 (570-116265-2)	11/8/22	06:05 Pacific		Water			X	X	2	
B1BMP011_20221108 (570-116265-3)	11/8/22	06:10 Pacific		Water			X	X	2	
ILBMP004_20221108 (570-116265-4)	11/8/22	06:25 Pacific		Water			X	X	2	
ILBMP005_20221108 (570-116265-5)	11/8/22	06:30 Pacific		Water			X	X	2	
ILBMP008_20221108 (570-116265-6)	11/8/22	06:35 Pacific		Water			X	X	2	
LPBMP0002_20221108 (570-116265-7)	11/8/22	07:15 Pacific		Water			X	X	2	
LPBMP0003_20221108 (570-116265-8)	11/8/22	07:10 Pacific		Water			X	X	2	
LPBMP0004_20221108 (570-116265-9)	11/8/22	07:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		11/9/22 1356			11/10/22 9:30	EMT
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: NA	Cooler Temperature(s) °C and Other Remarks: 0.4 Dry 2 1,3

Ver: 06/08/2021

6137 027 9585

11/23/2022

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-196020.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-116265-1
Address: 5755 8th Street East, ,	Due Date Requested: 11/18/2022			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:	Project #: 44009815			
Project Name: BMP Performance-001,002,009 and/or 011 Watersheds	SSOW#:			
Site:				

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LPBMP0002_DUP_20221108 (570-116265-10)	11/8/22	07:15 Pacific		Water			X	X	2	
EPSW001IE01_20221108 (570-116265-11)	11/8/22	07:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:		Method of Shipment:	
Relinquished by:	Date/Time: 11/9/22 1356	Company	Received by:	Date/Time: 11/10/22 0950	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-116265-1

Login Number: 116265
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Did not receive all required containers.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Eurofins Calscience

Job Notes

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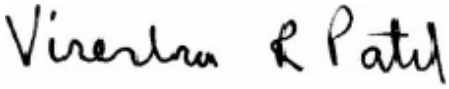
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 12/7/2022 4:28:50 PM

JOB DESCRIPTION

BMP Performance-001,002,009 and/or 011 Watersheds

JOB NUMBER

570-116265-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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12/7/2022 4:28:50 PM

Authorized for release by
Erick Ovalle, Project Manager
Erick.Ovalle@et.eurofinsus.com
Designee for
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

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Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-116265-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-116265-2

Comments
No additional comments.

Receipt
The samples were received on 11/8/2022 4:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 7 coolers at receipt time were 1.7º C, 2.2º C, 2.6º C, 3.1º C, 3.3º C, 3.7º C and 3.7º C.

Receipt Exceptions
The laboratory received 250 ml plastic with HNO3 instead of 25 ml unpreserved plastic container for dissolved metals analysis on the following sample: B1BMP009_20221108 (570-116265-1), B1BMP010_20221108 (570-116265-2), B1BMP011_20221108 (570-116265-3), ILBMP0004_20221108 (570-116265-4), ILBMP0005_20221108 (570-116265-5), ILBMP0008_20221108 (570-116265-6), LPBMP0002_20221108 (570-116265-7), LPBMP0003_20221108 (570-116265-8), LPBMP0004_20221108 (570-116265-9), LPBMP0002_DUP_20221108 (570-116265-10) and EPSW001IE01_20221108 (570-116265-11). The client was contacted, and the lab was instructed to <EXPLANATION_REQUIRED>.
Alequot was taken from 1L Amber glass container.

The following sample: #9F for job# 570-116265 has a cracked lid, which could not be replaced. Container lid was taped up to prevent leakage or volume loss. There was no leakage or volume was lost. LPBMP0004_20221108 (570-116265-9)

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: B1BMP009_20221108 (570-116265-1), B1BMP010_20221108 (570-116265-2), B1BMP011_20221108 (570-116265-3), ILBMP0004_20221108 (570-116265-4), ILBMP0005_20221108 (570-116265-5), ILBMP0008_20221108 (570-116265-6), LPBMP0002_20221108 (570-116265-7), (CCV 320-636198/1), (LCS 320-635089/2-A), (LCSD 320-635089/3-A) and (MB 320-635089/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: LPBMP0003_20221108 (570-116265-8), LPBMP0004_20221108 (570-116265-9), LPBMP0002_DUP_20221108 (570-116265-10), EPSW001IE01_20221108 (570-116265-11), (CCV 320-636227/15), (LCS 320-635627/2-A), (LCSD 320-635627/3-A) and (MB 320-635627/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin Prep
Method 1613B: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: LPBMP0002_20221108 (570-116265-7). Nominal volume is 1L.

preparation batch 320-635089
Method: 1613B_Sox_Sep_P
Matrix: Water

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Client Sample ID: B1BMP009_20221108 — Lab Sample ID: 570-116265-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000016	J,DX q MB	0.000051	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000019	J,DX q MB	0.000051	0.00000019	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000081	J,DX q MB	0.000051	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000042	J,DX MB	0.000051	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000049	J,DX MB	0.000051	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000041	J,DX MB	0.000051	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000022	J,DX MB	0.000051	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000021	J,DX MB	0.000051	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000034	J,DX MB	0.000051	0.00000029	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000014	J,DX MB	0.000051	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000062	MB	0.000051	0.00000080	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000023	J,DX MB	0.000051	0.00000049	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000035	J,DX MB	0.000051	0.00000053	ug/L	1		1613B	Total/NA
OCDD	0.00079	MB	0.00010	0.0000016	ug/L	1		1613B	Total/NA
OCDF	0.000043	J,DX MB	0.00010	0.00000058	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000016	J,DX q MB	0.000051	0.00000028	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000027	J,DX q MB	0.000051	0.00000019	ug/L	1		1613B	Total/NA
Total HxCDD	0.000027	J,DX q MB	0.000051	0.00000019	ug/L	1		1613B	Total/NA
Total HxCDF	0.000025	J,DX MB	0.000051	0.00000025	ug/L	1		1613B	Total/NA
Total HpCDD	0.00018	MB	0.000051	0.00000080	ug/L	1		1613B	Total/NA
Total HpCDF	0.000059	J,DX MB	0.000051	0.00000049	ug/L	1		1613B	Total/NA
Mercury	0.0075		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0022	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: B1BMP010_20221108 — Lab Sample ID: 570-116265-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000012	J,DX q MB	0.000051	0.00000039	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000021	J,DX q MB	0.000051	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000031	J,DX MB	0.000051	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000029	J,DX q MB	0.000051	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000026	J,DX MB	0.000051	0.00000021	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

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Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Client Sample ID: B1BMP010_20221108 (Continued)

Lab Sample ID: 570-116265-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDF	0.0000024	J,DX MB	0.000051	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000021	J,DX MB	0.000051	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000038	J,DX MB	0.000051	0.00000024	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000019	J,DX MB	0.000051	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000029	J,DX MB	0.000051	0.00000047	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000097	J,DX MB	0.000051	0.00000032	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000020	J,DX MB	0.000051	0.00000038	ug/L	1		1613B	Total/NA
OCDD	0.00029	MB	0.00010	0.00000081	ug/L	1		1613B	Total/NA
OCDF	0.000017	J,DX MB	0.00010	0.00000069	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000028	J,DX q MB	0.000051	0.00000039	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000021	J,DX q MB	0.000051	0.00000022	ug/L	1		1613B	Total/NA
Total HxCDD	0.000013	J,DX q MB	0.000051	0.00000021	ug/L	1		1613B	Total/NA
Total HxCDF	0.000015	J,DX q MB	0.000051	0.00000021	ug/L	1		1613B	Total/NA
Total HpCDD	0.000079	J,DX MB	0.000051	0.00000047	ug/L	1		1613B	Total/NA
Total HpCDF	0.000024	J,DX MB	0.000051	0.00000032	ug/L	1		1613B	Total/NA
Mercury	0.0028		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0021	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: B1BMP011_20221108

Lab Sample ID: 570-116265-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000030	J,DX q MB	0.000052	0.00000046	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000030	J,DX q MB	0.000052	0.00000034	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000023	J,DX q MB	0.000052	0.00000038	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000059	J,DX MB	0.000052	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000066	J,DX MB	0.000052	0.00000027	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000059	J,DX MB	0.000052	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000051	J,DX MB	0.000052	0.00000036	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000042	J,DX MB	0.000052	0.00000036	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000050	J,DX MB	0.000052	0.00000041	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000041	J,DX MB	0.000052	0.00000036	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B1BMP011_20221108 (Continued)
Lab Sample ID: 570-116265-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	0.000033	J,DX MB	0.000052	0.00000058	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000019	J,DX MB	0.000052	0.00000045	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000043	J,DX MB	0.000052	0.00000050	ug/L	1		1613B	Total/NA
OCDD	0.00041	MB	0.00010	0.0000019	ug/L	1		1613B	Total/NA
OCDF	0.000026	J,DX MB	0.00010	0.00000088	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000030	J,DX q MB	0.000052	0.00000046	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000053	J,DX q MB	0.000052	0.00000034	ug/L	1		1613B	Total/NA
Total HxCDD	0.000025	J,DX q MB	0.000052	0.00000024	ug/L	1		1613B	Total/NA
Total HxCDF	0.000026	J,DX q MB	0.000052	0.00000036	ug/L	1		1613B	Total/NA
Total HpCDD	0.000084	J,DX MB	0.000052	0.00000058	ug/L	1		1613B	Total/NA
Total HpCDF	0.000035	J,DX MB	0.000052	0.00000045	ug/L	1		1613B	Total/NA
Mercury	0.0059	MB	0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0044	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: ILBMP0004_20221108
Lab Sample ID: 570-116265-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000020	J,DX MB	0.000053	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000045	J,DX MB	0.000053	0.00000051	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000056	J,DX MB	0.000053	0.00000058	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000050	J,DX MB	0.000053	0.00000049	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000029	J,DX MB	0.000053	0.00000042	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000030	J,DX MB	0.000053	0.00000041	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000021	J,DX MB	0.000053	0.00000050	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000028	J,DX MB	0.000053	0.00000042	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000092	MB	0.000053	0.0000012	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000074	MB	0.000053	0.00000072	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000022	J,DX MB q	0.000053	0.00000082	ug/L	1		1613B	Total/NA
OCDD	0.0012	MB	0.00011	0.0000027	ug/L	1		1613B	Total/NA
OCDF	0.000072	J,DX MB	0.00011	0.00000096	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000052	J,DX MB	0.000053	0.00000028	ug/L	1		1613B	Total/NA
Total HxCDD	0.000052	J,DX MB	0.000053	0.00000049	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Client Sample ID: ILBMP0004_20221108 (Continued) — Lab Sample ID: 570-116265-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total HxCDF	0.000053	J,DX MB q	0.000053	0.00000041	ug/L	1		1613B	Total/NA
Total HpCDD	0.00026	MB	0.000053	0.0000012	ug/L	1		1613B	Total/NA
Total HpCDF	0.00011	J,DX MB q	0.000053	0.00000072	ug/L	1		1613B	Total/NA
Mercury	0.0088	MB	0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0024	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: ILBMP0005_20221108 — Lab Sample ID: 570-116265-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000021	J,DX MB	0.000053	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000018	J,DX MB	0.000053	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000012	J,DX q MB	0.000053	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000093	J,DX q MB	0.000053	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000013	J,DX MB	0.000053	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000011	J,DX q MB	0.000053	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000023	J,DX q MB	0.000053	0.00000023	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000076	J,DX q MB	0.000053	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000015	J,DX MB	0.000053	0.00000030	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000017	J,DX MB	0.000053	0.00000036	ug/L	1		1613B	Total/NA
OCDD	0.00013	MB	0.00011	0.00000057	ug/L	1		1613B	Total/NA
OCDF	0.000013	J,DX q MB	0.00011	0.00000058	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000021	J,DX MB	0.000053	0.00000020	ug/L	1		1613B	Total/NA
Total HxCDD	0.000012	J,DX q MB	0.000053	0.00000024	ug/L	1		1613B	Total/NA
Total HxCDF	0.000013	J,DX q MB	0.000053	0.00000019	ug/L	1		1613B	Total/NA
Total HpCDD	0.000050	J,DX MB	0.000053	0.00000030	ug/L	1		1613B	Total/NA
Total HpCDF	0.000024	J,DX MB	0.000053	0.00000036	ug/L	1		1613B	Total/NA
Mercury	0.013	MB	0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0085	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: ILBMP0008_20221108 — Lab Sample ID: 570-116265-6

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000022	J,DX MB	0.000051	0.00000045	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000014	J,DX MB	0.000051	0.00000046	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Client Sample ID: ILBMP0008_20221108 (Continued)

Lab Sample ID: 570-116265-6

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000029	J,DX MB	0.000051	0.00000048	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000038	J,DX MB	0.000051	0.00000055	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000034	J,DX MB	0.000051	0.00000046	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000035	J,DX MB q	0.000051	0.00000057	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000052	J,DX MB	0.000051	0.00000058	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000019	J,DX MB q	0.000051	0.00000068	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000047	J,DX MB	0.000051	0.00000055	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00010	MB	0.000051	0.0000013	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00013	MB	0.000051	0.00000092	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000033	J,DX MB	0.000051	0.00000095	ug/L	1		1613B	Total/NA
OCDD	0.00099	MB	0.00010	0.0000031	ug/L	1		1613B	Total/NA
OCDF	0.00012	MB	0.00010	0.00000081	ug/L	1		1613B	Total/NA
Total TCDF	0.000012	q	0.000010	0.00000021	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000029	J,DX q MB	0.000051	0.00000050	ug/L	1		1613B	Total/NA
Total PeCDF	0.000022	J,DX q MB	0.000051	0.00000045	ug/L	1		1613B	Total/NA
Total HxCDD	0.000065	J,DX MB q	0.000051	0.00000046	ug/L	1		1613B	Total/NA
Total HxCDF	0.000091	J,DX MB q	0.000051	0.00000055	ug/L	1		1613B	Total/NA
Total HpCDD	0.00043	MB	0.000051	0.0000013	ug/L	1		1613B	Total/NA
Total HpCDF	0.00020	J,DX MB	0.000051	0.00000092	ug/L	1		1613B	Total/NA
Mercury	0.0045	MB	0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0019	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: LPBMP0002_20221108

Lab Sample ID: 570-116265-7

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000044	J,DX MB	0.000075	0.00000081	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000028	J,DX q MB	0.000075	0.00000043	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000010	J,DX q MB	0.000075	0.00000048	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000099	J,DX MB	0.000075	0.0000010	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.000015	J,DX MB	0.000075	0.0000011	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.000013	J,DX MB	0.000075	0.00000095	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000051	J,DX MB	0.000075	0.00000065	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000051	J,DX MB	0.000075	0.00000066	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: LPBMP0002_20221108 (Continued)
Lab Sample ID: 570-116265-7

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8,9-HxCDF	0.0000028	J,DX q MB	0.000075	0.00000078	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000046	J,DX MB	0.000075	0.00000065	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00030	MB	0.000075	0.0000025	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00011	MB	0.000075	0.0000011	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000044	J,DX MB	0.000075	0.0000012	ug/L	1		1613B	Total/NA
OCDD	0.0046	MB	0.00015	0.000012	ug/L	1		1613B	Total/NA
OCDF	0.00011	J,DX MB	0.00015	0.0000014	ug/L	1		1613B	Total/NA
Total TCDD	0.0000028	J,DX q	0.000015	0.00000091	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000044	J,DX MB	0.000075	0.00000081	ug/L	1		1613B	Total/NA
Total PeCDF	0.000016	J,DX q MB	0.000075	0.00000043	ug/L	1		1613B	Total/NA
Total HxCDD	0.00011	J,DX MB q	0.000075	0.00000095	ug/L	1		1613B	Total/NA
Total HxCDF	0.000088	J,DX MB q	0.000075	0.00000065	ug/L	1		1613B	Total/NA
Total HpCDD	0.00068	MB	0.000075	0.0000025	ug/L	1		1613B	Total/NA
Total HpCDF	0.00018	J,DX MB	0.000075	0.0000011	ug/L	1		1613B	Total/NA
Mercury	0.0077	MB	0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0040	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: LPBMP0003_20221108
Lab Sample ID: 570-116265-8

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000031	J,DX MB	0.000052	0.00000049	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000027	J,DX MB	0.000052	0.00000033	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000087	J,DX q	0.000052	0.00000041	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000064	J,DX MB	0.000052	0.00000061	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.000011	J,DX q MB	0.000052	0.00000065	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.000011	J,DX MB	0.000052	0.00000057	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000045	J,DX MB	0.000052	0.00000048	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000034	J,DX MB	0.000052	0.00000047	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000026	J,DX MB	0.000052	0.00000054	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000027	J,DX MB	0.000052	0.00000045	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00026	MB	0.000052	0.0000022	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000089	MB	0.000052	0.0000011	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000035	J,DX MB	0.000052	0.0000012	ug/L	1		1613B	Total/NA
OCDD	0.0036	MB	0.00010	0.000014	ug/L	1		1613B	Total/NA
OCDF	0.00010	J,DX MB	0.00010	0.0000012	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000031	J,DX MB	0.000052	0.00000049	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Client Sample ID: LPBMP0003_20221108 (Continued)

Lab Sample ID: 570-116265-8

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total PeCDF	0.000013	J,DX q MB	0.000052	0.00000033	ug/L	1		1613B	Total/NA
Total HxCDD	0.000080	J,DX MB q	0.000052	0.00000057	ug/L	1		1613B	Total/NA
Total HxCDF	0.000062	J,DX MB q	0.000052	0.00000045	ug/L	1		1613B	Total/NA
Total HpCDD	0.00057	MB	0.000052	0.0000022	ug/L	1		1613B	Total/NA
Total HpCDF	0.00015	J,DX MB	0.000052	0.0000011	ug/L	1		1613B	Total/NA
Mercury	0.0081	MB	0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0042	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: LPBMP0004_20221108

Lab Sample ID: 570-116265-9

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000015	J,DX MB	0.000052	0.00000030	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000021	J,DX MB	0.000052	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000031	J,DX MB	0.000052	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000023	J,DX q MB	0.000052	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000018	J,DX MB	0.000052	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000014	J,DX MB	0.000052	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000025	J,DX q MB	0.000052	0.00000025	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000013	J,DX MB	0.000052	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000054	MB	0.000052	0.00000074	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000019	J,DX MB	0.000052	0.00000044	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000019	J,DX MB	0.000052	0.00000050	ug/L	1		1613B	Total/NA
OCDD	0.00064	MB	0.00010	0.0000035	ug/L	1		1613B	Total/NA
OCDF	0.000022	J,DX MB	0.00010	0.00000073	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000015	J,DX MB	0.000052	0.00000030	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000027	J,DX q MB	0.000052	0.00000018	ug/L	1		1613B	Total/NA
Total HxCDD	0.000013	J,DX q MB	0.000052	0.00000021	ug/L	1		1613B	Total/NA
Total HxCDF	0.000014	J,DX q MB	0.000052	0.00000020	ug/L	1		1613B	Total/NA
Total HpCDD	0.00011	MB	0.000052	0.00000074	ug/L	1		1613B	Total/NA
Total HpCDF	0.000027	J,DX MB	0.000052	0.00000044	ug/L	1		1613B	Total/NA
Mercury	0.017	MB	0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.012	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Client Sample ID: LPBMP0002_DUP_20221108 — Lab Sample ID: 570-116265-10

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000017	J,DX q MB	0.000049	0.00000058	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000021	J,DX MB	0.000049	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000048	J,DX MB	0.000049	0.00000044	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000088	J,DX MB	0.000049	0.00000047	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000071	J,DX MB	0.000049	0.00000041	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000035	J,DX q MB	0.000049	0.00000051	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000035	J,DX MB	0.000049	0.00000048	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000022	J,DX MB	0.000049	0.00000056	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000026	J,DX MB	0.000049	0.00000047	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00020	MB	0.000049	0.0000017	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000060	MB	0.000049	0.00000082	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000023	J,DX MB q	0.000049	0.00000089	ug/L	1		1613B	Total/NA
OCDD	0.0020	MB	0.000097	0.0000052	ug/L	1		1613B	Total/NA
OCDF	0.000066	J,DX MB	0.000097	0.00000075	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000017	J,DX q MB	0.000049	0.00000058	ug/L	1		1613B	Total/NA
Total PeCDF	0.000010	J,DX q MB	0.000049	0.00000025	ug/L	1		1613B	Total/NA
Total HxCDD	0.000060	J,DX MB q	0.000049	0.00000041	ug/L	1		1613B	Total/NA
Total HxCDF	0.000048	J,DX q MB	0.000049	0.00000047	ug/L	1		1613B	Total/NA
Total HpCDD	0.00045	MB	0.000049	0.0000017	ug/L	1		1613B	Total/NA
Total HpCDF	0.00010	J,DX MB q	0.000049	0.00000082	ug/L	1		1613B	Total/NA
Mercury	0.011	MB	0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0057	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: EPSW001IE01_20221108 — Lab Sample ID: 570-116265-11

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000021	J,DX q MB	0.000052	0.00000064	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000044	J,DX MB	0.000052	0.00000079	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.000015	J,DX MB	0.000052	0.00000089	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000083	J,DX MB	0.000052	0.00000076	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000059	J,DX MB	0.000052	0.00000097	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.000011	J,DX MB	0.000052	0.00000093	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000025	J,DX MB	0.000052	0.0000011	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

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Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: EPSW001IE01_20221108 (Continued)
Lab Sample ID: 570-116265-11

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,4,6,7,8-HxCDF	0.0000086	J,DX MB	0.000052	0.00000092	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00041	MB	0.000052	0.0000026	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00023	MB	0.000052	0.0000022	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000073	J,DX MB	0.000052	0.0000025	ug/L	1		1613B	Total/NA
OCDD	0.0025	MB	0.00010	0.0000085	ug/L	1		1613B	Total/NA
OCDF	0.00024	MB	0.00010	0.0000015	ug/L	1		1613B	Total/NA
Total TCDF	0.0000017	J,DX q	0.000010	0.00000021	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000029	J,DX MB	0.000052	0.00000060	ug/L	1		1613B	Total/NA
Total PeCDF	0.000033	J,DX q MB	0.000052	0.00000064	ug/L	1		1613B	Total/NA
Total HxCDD	0.00011	J,DX MB	0.000052	0.00000076	ug/L	1		1613B	Total/NA
Total HxCDF	0.00017	J,DX MB q	0.000052	0.00000092	ug/L	1		1613B	Total/NA
Total HpCDD	0.00071	MB	0.000052	0.0000026	ug/L	1		1613B	Total/NA
Total HpCDF	0.00037	J,DX MB	0.000052	0.0000022	ug/L	1		1613B	Total/NA
Mercury	0.037	MB	0.0025	0.00040	ug/L	5		1631E	Total/NA
Mercury	0.0044	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: B1BMP009_20221108
Date Collected: 11/08/22 06:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000048	ug/L		11/23/22 12:28	11/30/22 15:36	1
2,3,7,8-TCDF	ND		0.000010	0.00000097	ug/L		11/23/22 12:28	11/30/22 15:36	1
1,2,3,7,8-PeCDD	**0.0000016**	**J,DX q MB**	0.000051	0.00000028	ug/L		11/23/22 12:28	11/30/22 15:36	1
1,2,3,7,8-PeCDF	**0.0000019**	**J,DX q MB**	0.000051	0.00000019	ug/L		11/23/22 12:28	11/30/22 15:36	1
2,3,4,7,8-PeCDF	**0.00000081**	**J,DX q MB**	0.000051	0.00000021	ug/L		11/23/22 12:28	11/30/22 15:36	1
1,2,3,4,7,8-HxCDD	**0.0000042**	**J,DX MB**	0.000051	0.00000020	ug/L		11/23/22 12:28	11/30/22 15:36	1
1,2,3,6,7,8-HxCDD	**0.0000049**	**J,DX MB**	0.000051	0.00000023	ug/L		11/23/22 12:28	11/30/22 15:36	1
1,2,3,7,8,9-HxCDD	**0.0000041**	**J,DX MB**	0.000051	0.00000019	ug/L		11/23/22 12:28	11/30/22 15:36	1
1,2,3,4,7,8-HxCDF	**0.0000022**	**J,DX MB**	0.000051	0.00000026	ug/L		11/23/22 12:28	11/30/22 15:36	1
1,2,3,6,7,8-HxCDF	**0.0000021**	**J,DX MB**	0.000051	0.00000026	ug/L		11/23/22 12:28	11/30/22 15:36	1
1,2,3,7,8,9-HxCDF	**0.0000034**	**J,DX MB**	0.000051	0.00000029	ug/L		11/23/22 12:28	11/30/22 15:36	1
2,3,4,6,7,8-HxCDF	**0.0000014**	**J,DX MB**	0.000051	0.00000025	ug/L		11/23/22 12:28	11/30/22 15:36	1
1,2,3,4,6,7,8-HpCDD	**0.000062**	**MB**	0.000051	0.00000080	ug/L		11/23/22 12:28	11/30/22 15:36	1
1,2,3,4,6,7,8-HpCDF	**0.000023**	**J,DX MB**	0.000051	0.00000049	ug/L		11/23/22 12:28	11/30/22 15:36	1
1,2,3,4,7,8,9-HpCDF	**0.0000035**	**J,DX MB**	0.000051	0.00000053	ug/L		11/23/22 12:28	11/30/22 15:36	1
OCDD	**0.00079**	**MB**	0.00010	0.0000016	ug/L		11/23/22 12:28	11/30/22 15:36	1
OCDF	**0.000043**	**J,DX MB**	0.00010	0.00000058	ug/L		11/23/22 12:28	11/30/22 15:36	1
Total TCDD	ND		0.000010	0.00000048	ug/L		11/23/22 12:28	11/30/22 15:36	1
Total TCDF	ND		0.000010	0.00000097	ug/L		11/23/22 12:28	11/30/22 15:36	1
Total PeCDD	**0.0000016**	**J,DX q MB**	0.000051	0.00000028	ug/L		11/23/22 12:28	11/30/22 15:36	1
Total PeCDF	**0.0000027**	**J,DX q MB**	0.000051	0.00000019	ug/L		11/23/22 12:28	11/30/22 15:36	1
Total HxCDD	**0.000027**	**J,DX q MB**	0.000051	0.00000019	ug/L		11/23/22 12:28	11/30/22 15:36	1
Total HxCDF	**0.000025**	**J,DX MB**	0.000051	0.00000025	ug/L		11/23/22 12:28	11/30/22 15:36	1
Total HpCDD	**0.00018**	**MB**	0.000051	0.00000080	ug/L		11/23/22 12:28	11/30/22 15:36	1
Total HpCDF	**0.000059**	**J,DX MB**	0.000051	0.00000049	ug/L		11/23/22 12:28	11/30/22 15:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 164*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-2,3,7,8-TCDF	*58*		*24 - 169*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-1,2,3,7,8-PeCDD	*92*		*25 - 181*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-1,2,3,7,8-PeCDF	*78*		*24 - 185*	*11/23/22 12:28*	*11/30/22 15:36*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: B1BMP009_20221108
Date Collected: 11/08/22 06:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-1
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,4,7,8-PeCDF	*78*		*21 - 178*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-1,2,3,4,7,8-HxCDD	*86*		*32 - 141*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-1,2,3,6,7,8-HxCDD	*73*		*28 - 130*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-1,2,3,4,7,8-HxCDF	*79*		*26 - 152*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-1,2,3,6,7,8-HxCDF	*78*		*26 - 123*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-1,2,3,7,8,9-HxCDF	*79*		*29 - 147*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-2,3,4,6,7,8-HxCDF	*82*		*28 - 136*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*94*		*23 - 140*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*76*		*28 - 143*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*91*		*26 - 138*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-OCDD	*91*		*17 - 157*	*11/23/22 12:28*	*11/30/22 15:36*	*1*
13C-OCDF	*97*		*17 - 157*	*11/23/22 12:28*	*11/30/22 15:36*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*86*		*35 - 197*	*11/23/22 12:28*	*11/30/22 15:36*	*1*

Client Sample ID: B1BMP010_20221108
Date Collected: 11/08/22 06:05
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000055	ug/L		11/23/22 12:28	11/30/22 16:24	1
2,3,7,8-TCDF	ND		0.000010	0.00000012	ug/L		11/23/22 12:28	11/30/22 16:24	1
1,2,3,7,8-PeCDD	**0.0000012**	**J,DX q MB**	0.000051	0.00000039	ug/L		11/23/22 12:28	11/30/22 16:24	1
1,2,3,7,8-PeCDF	**0.0000021**	**J,DX q MB**	0.000051	0.00000022	ug/L		11/23/22 12:28	11/30/22 16:24	1
2,3,4,7,8-PeCDF	ND		0.000051	0.00000024	ug/L		11/23/22 12:28	11/30/22 16:24	1
1,2,3,4,7,8-HxCDD	**0.0000031**	**J,DX MB**	0.000051	0.00000023	ug/L		11/23/22 12:28	11/30/22 16:24	1
1,2,3,6,7,8-HxCDD	**0.0000029**	**J,DX q MB**	0.000051	0.00000025	ug/L		11/23/22 12:28	11/30/22 16:24	1
1,2,3,7,8,9-HxCDD	**0.0000026**	**J,DX MB**	0.000051	0.00000021	ug/L		11/23/22 12:28	11/30/22 16:24	1
1,2,3,4,7,8-HxCDF	**0.0000024**	**J,DX MB**	0.000051	0.00000022	ug/L		11/23/22 12:28	11/30/22 16:24	1
1,2,3,6,7,8-HxCDF	**0.0000021**	**J,DX MB**	0.000051	0.00000021	ug/L		11/23/22 12:28	11/30/22 16:24	1
1,2,3,7,8,9-HxCDF	**0.0000038**	**J,DX MB**	0.000051	0.00000024	ug/L		11/23/22 12:28	11/30/22 16:24	1
2,3,4,6,7,8-HxCDF	**0.0000019**	**J,DX MB**	0.000051	0.00000021	ug/L		11/23/22 12:28	11/30/22 16:24	1
1,2,3,4,6,7,8-HpCDD	**0.000029**	**J,DX MB**	0.000051	0.00000047	ug/L		11/23/22 12:28	11/30/22 16:24	1
1,2,3,4,6,7,8-HpCDF	**0.0000097**	**J,DX MB**	0.000051	0.00000032	ug/L		11/23/22 12:28	11/30/22 16:24	1
1,2,3,4,7,8,9-HpCDF	**0.0000020**	**J,DX MB**	0.000051	0.00000038	ug/L		11/23/22 12:28	11/30/22 16:24	1
OCDD	**0.00029**	**MB**	0.00010	0.00000081	ug/L		11/23/22 12:28	11/30/22 16:24	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: B1BMP010_20221108
Date Collected: 11/08/22 06:05
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
OCDF	**0.000017**	**J,DX MB**	0.00010	0.00000069	ug/L		11/23/22 12:28	11/30/22 16:24	1
Total TCDD	ND		0.000010	0.00000055	ug/L		11/23/22 12:28	11/30/22 16:24	1
Total TCDF	ND		0.000010	0.00000012	ug/L		11/23/22 12:28	11/30/22 16:24	1
Total PeCDD	**0.0000028**	**J,DX q MB**	0.000051	0.00000039	ug/L		11/23/22 12:28	11/30/22 16:24	1
Total PeCDF	**0.0000021**	**J,DX q MB**	0.000051	0.00000022	ug/L		11/23/22 12:28	11/30/22 16:24	1
Total HxCDD	**0.000013**	**J,DX q MB**	0.000051	0.00000021	ug/L		11/23/22 12:28	11/30/22 16:24	1
Total HxCDF	**0.000015**	**J,DX q MB**	0.000051	0.00000021	ug/L		11/23/22 12:28	11/30/22 16:24	1
Total HpCDD	**0.000079**	**J,DX MB**	0.000051	0.00000047	ug/L		11/23/22 12:28	11/30/22 16:24	1
Total HpCDF	**0.000024**	**J,DX MB**	0.000051	0.00000032	ug/L		11/23/22 12:28	11/30/22 16:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*63*		*25 - 164*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-2,3,7,8-TCDF	*50*		*24 - 169*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*25 - 181*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-1,2,3,7,8-PeCDF	*67*		*24 - 185*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-2,3,4,7,8-PeCDF	*66*		*21 - 178*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-1,2,3,4,7,8-HxCDD	*76*		*32 - 141*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-1,2,3,6,7,8-HxCDD	*71*		*28 - 130*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-1,2,3,4,7,8-HxCDF	*70*		*26 - 152*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-1,2,3,6,7,8-HxCDF	*72*		*26 - 123*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-1,2,3,7,8,9-HxCDF	*72*		*29 - 147*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-2,3,4,6,7,8-HxCDF	*77*		*28 - 136*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*84*		*23 - 140*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*71*		*28 - 143*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*78*		*26 - 138*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-OCDD	*74*		*17 - 157*	*11/23/22 12:28*	*11/30/22 16:24*	*1*
13C-OCDF	*76*		*17 - 157*	*11/23/22 12:28*	*11/30/22 16:24*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*82*		*35 - 197*	*11/23/22 12:28*	*11/30/22 16:24*	*1*

Client Sample ID: B1BMP011_20221108
Date Collected: 11/08/22 06:10
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000072	ug/L		11/23/22 12:28	11/30/22 17:12	1
2,3,7,8-TCDF	ND		0.000010	0.00000016	ug/L		11/23/22 12:28	11/30/22 17:12	1
1,2,3,7,8-PeCDD	**0.0000030**	**J,DX q MB**	0.000052	0.00000046	ug/L		11/23/22 12:28	11/30/22 17:12	1
1,2,3,7,8-PeCDF	**0.0000030**	**J,DX q MB**	0.000052	0.00000034	ug/L		11/23/22 12:28	11/30/22 17:12	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: B1BMP011_20221108
Date Collected: 11/08/22 06:10
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,7,8-PeCDF	0.0000023	J,DX q MB	0.000052	0.00000038	ug/L		11/23/22 12:28	11/30/22 17:12	1
1,2,3,4,7,8-HxCDD	0.0000059	J,DX MB	0.000052	0.00000025	ug/L		11/23/22 12:28	11/30/22 17:12	1
1,2,3,6,7,8-HxCDD	0.0000066	J,DX MB	0.000052	0.00000027	ug/L		11/23/22 12:28	11/30/22 17:12	1
1,2,3,7,8,9-HxCDD	0.0000059	J,DX MB	0.000052	0.00000024	ug/L		11/23/22 12:28	11/30/22 17:12	1
1,2,3,4,7,8-HxCDF	0.0000051	J,DX MB	0.000052	0.00000036	ug/L		11/23/22 12:28	11/30/22 17:12	1
1,2,3,6,7,8-HxCDF	0.0000042	J,DX MB	0.000052	0.00000036	ug/L		11/23/22 12:28	11/30/22 17:12	1
1,2,3,7,8,9-HxCDF	0.0000050	J,DX MB	0.000052	0.00000041	ug/L		11/23/22 12:28	11/30/22 17:12	1
2,3,4,6,7,8-HxCDF	0.0000041	J,DX MB	0.000052	0.00000036	ug/L		11/23/22 12:28	11/30/22 17:12	1
1,2,3,4,6,7,8-HpCDD	0.000033	J,DX MB	0.000052	0.00000058	ug/L		11/23/22 12:28	11/30/22 17:12	1
1,2,3,4,6,7,8-HpCDF	0.000019	J,DX MB	0.000052	0.00000045	ug/L		11/23/22 12:28	11/30/22 17:12	1
1,2,3,4,7,8,9-HpCDF	0.0000043	J,DX MB	0.000052	0.00000050	ug/L		11/23/22 12:28	11/30/22 17:12	1
OCDD	0.00041	MB	0.00010	0.0000019	ug/L		11/23/22 12:28	11/30/22 17:12	1
OCDF	0.000026	J,DX MB	0.00010	0.00000088	ug/L		11/23/22 12:28	11/30/22 17:12	1
Total TCDD	ND		0.000010	0.00000072	ug/L		11/23/22 12:28	11/30/22 17:12	1
Total TCDF	ND		0.000010	0.00000016	ug/L		11/23/22 12:28	11/30/22 17:12	1
Total PeCDD	0.0000030	J,DX q MB	0.000052	0.00000046	ug/L		11/23/22 12:28	11/30/22 17:12	1
Total PeCDF	0.0000053	J,DX q MB	0.000052	0.00000034	ug/L		11/23/22 12:28	11/30/22 17:12	1
Total HxCDD	0.000025	J,DX q MB	0.000052	0.00000024	ug/L		11/23/22 12:28	11/30/22 17:12	1
Total HxCDF	0.000026	J,DX q MB	0.000052	0.00000036	ug/L		11/23/22 12:28	11/30/22 17:12	1
Total HpCDD	0.000084	J,DX MB	0.000052	0.00000058	ug/L		11/23/22 12:28	11/30/22 17:12	1
Total HpCDF	0.000035	J,DX MB	0.000052	0.00000045	ug/L		11/23/22 12:28	11/30/22 17:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*50*		*25 - 164*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-2,3,7,8-TCDF	*43*		*24 - 169*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-1,2,3,7,8-PeCDD	*64*		*25 - 181*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-1,2,3,7,8-PeCDF	*56*		*24 - 185*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-2,3,4,7,8-PeCDF	*54*		*21 - 178*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-1,2,3,4,7,8-HxCDD	*59*		*32 - 141*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-1,2,3,6,7,8-HxCDD	*57*		*28 - 130*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-1,2,3,4,7,8-HxCDF	*56*		*26 - 152*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-1,2,3,6,7,8-HxCDF	*59*		*26 - 123*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-1,2,3,7,8,9-HxCDF	*58*		*29 - 147*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-2,3,4,6,7,8-HxCDF	*60*		*28 - 136*	*11/23/22 12:28*	*11/30/22 17:12*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: B1BMP011_20221108
Lab Sample ID: 570-116265-3
Date Collected: 11/08/22 06:10
Matrix: Water
Date Received: 11/08/22 16:20

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*70*		*23 - 140*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*58*		*28 - 143*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*66*		*26 - 138*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-OCDD	*57*		*17 - 157*	*11/23/22 12:28*	*11/30/22 17:12*	*1*
13C-OCDF	*64*		*17 - 157*	*11/23/22 12:28*	*11/30/22 17:12*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*80*		*35 - 197*	*11/23/22 12:28*	*11/30/22 17:12*	*1*

Client Sample ID: ILBMP0004_20221108
Lab Sample ID: 570-116265-4
Date Collected: 11/08/22 06:25
Matrix: Water
Date Received: 11/08/22 16:20

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000066	ug/L		11/23/22 12:28	11/30/22 18:00	1
2,3,7,8-TCDF	ND		0.000011	0.00000019	ug/L		11/23/22 12:28	11/30/22 18:00	1
1,2,3,7,8-PeCDD	ND		0.000053	0.00000064	ug/L		11/23/22 12:28	11/30/22 18:00	1
1,2,3,7,8-PeCDF	**0.0000020**	**J,DX MB**	0.000053	0.00000028	ug/L		11/23/22 12:28	11/30/22 18:00	1
2,3,4,7,8-PeCDF	ND		0.000053	0.00000030	ug/L		11/23/22 12:28	11/30/22 18:00	1
1,2,3,4,7,8-HxCDD	**0.0000045**	**J,DX MB**	0.000053	0.00000051	ug/L		11/23/22 12:28	11/30/22 18:00	1
1,2,3,6,7,8-HxCDD	**0.0000056**	**J,DX MB**	0.000053	0.00000058	ug/L		11/23/22 12:28	11/30/22 18:00	1
1,2,3,7,8,9-HxCDD	**0.0000050**	**J,DX MB**	0.000053	0.00000049	ug/L		11/23/22 12:28	11/30/22 18:00	1
1,2,3,4,7,8-HxCDF	**0.0000029**	**J,DX MB**	0.000053	0.00000042	ug/L		11/23/22 12:28	11/30/22 18:00	1
1,2,3,6,7,8-HxCDF	**0.0000030**	**J,DX MB**	0.000053	0.00000041	ug/L		11/23/22 12:28	11/30/22 18:00	1
1,2,3,7,8,9-HxCDF	**0.0000021**	**J,DX MB**	0.000053	0.00000050	ug/L		11/23/22 12:28	11/30/22 18:00	1
2,3,4,6,7,8-HxCDF	**0.0000028**	**J,DX MB**	0.000053	0.00000042	ug/L		11/23/22 12:28	11/30/22 18:00	1
1,2,3,4,6,7,8-HpCDD	**0.000092**	**MB**	0.000053	0.0000012	ug/L		11/23/22 12:28	11/30/22 18:00	1
1,2,3,4,6,7,8-HpCDF	**0.000074**	**MB**	0.000053	0.00000072	ug/L		11/23/22 12:28	11/30/22 18:00	1
1,2,3,4,7,8,9-HpCDF	**0.0000022**	**J,DX MB q**	0.000053	0.00000082	ug/L		11/23/22 12:28	11/30/22 18:00	1
OCDD	**0.0012**	**MB**	0.00011	0.0000027	ug/L		11/23/22 12:28	11/30/22 18:00	1
OCDF	**0.000072**	**J,DX MB**	0.00011	0.00000096	ug/L		11/23/22 12:28	11/30/22 18:00	1
Total TCDD	ND		0.000011	0.00000066	ug/L		11/23/22 12:28	11/30/22 18:00	1
Total TCDF	ND		0.000011	0.00000019	ug/L		11/23/22 12:28	11/30/22 18:00	1
Total PeCDD	ND		0.000053	0.00000064	ug/L		11/23/22 12:28	11/30/22 18:00	1
Total PeCDF	**0.0000052**	**J,DX MB**	0.000053	0.00000028	ug/L		11/23/22 12:28	11/30/22 18:00	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: ILBMP0004_20221108
Lab Sample ID: 570-116265-4
Date Collected: 11/08/22 06:25
Matrix: Water
Date Received: 11/08/22 16:20

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HxCDD	**0.000052**	**J,DX MB**	0.000053	0.00000049	ug/L		11/23/22 12:28	11/30/22 18:00	1
Total HxCDF	**0.000053**	**J,DX MB q**	0.000053	0.00000041	ug/L		11/23/22 12:28	11/30/22 18:00	1
Total HpCDD	**0.00026**	**MB**	0.000053	0.0000012	ug/L		11/23/22 12:28	11/30/22 18:00	1
Total HpCDF	**0.00011**	**J,DX MB q**	0.000053	0.00000072	ug/L		11/23/22 12:28	11/30/22 18:00	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-2,3,7,8-TCDF	*51*		*24 - 169*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-1,2,3,7,8-PeCDD	*78*		*25 - 181*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-1,2,3,7,8-PeCDF	*67*		*24 - 185*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-2,3,4,7,8-PeCDF	*65*		*21 - 178*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-1,2,3,4,7,8-HxCDD	*72*		*32 - 141*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-1,2,3,6,7,8-HxCDD	*68*		*28 - 130*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-1,2,3,4,7,8-HxCDF	*69*		*26 - 152*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-1,2,3,6,7,8-HxCDF	*69*		*26 - 123*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-1,2,3,7,8,9-HxCDF	*66*		*29 - 147*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-2,3,4,6,7,8-HxCDF	*71*		*28 - 136*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*77*		*23 - 140*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*64*		*28 - 143*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*72*		*26 - 138*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-OCDD	*64*		*17 - 157*	*11/23/22 12:28*	*11/30/22 18:00*	*1*
13C-OCDF	*69*		*17 - 157*	*11/23/22 12:28*	*11/30/22 18:00*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*83*		*35 - 197*	*11/23/22 12:28*	*11/30/22 18:00*	*1*

Client Sample ID: ILBMP0005_20221108
Lab Sample ID: 570-116265-5
Date Collected: 11/08/22 06:30
Matrix: Water
Date Received: 11/08/22 16:20

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000076	ug/L		11/23/22 12:28	11/30/22 18:48	1
2,3,7,8-TCDF	ND		0.000011	0.00000014	ug/L		11/23/22 12:28	11/30/22 18:48	1
1,2,3,7,8-PeCDD	ND		0.000053	0.00000040	ug/L		11/23/22 12:28	11/30/22 18:48	1
1,2,3,7,8-PeCDF	**0.0000021**	**J,DX MB**	0.000053	0.00000020	ug/L		11/23/22 12:28	11/30/22 18:48	1
2,3,4,7,8-PeCDF	ND		0.000053	0.00000022	ug/L		11/23/22 12:28	11/30/22 18:48	1
1,2,3,4,7,8-HxCDD	**0.0000018**	**J,DX MB**	0.000053	0.00000025	ug/L		11/23/22 12:28	11/30/22 18:48	1
1,2,3,6,7,8-HxCDD	**0.0000012**	**J,DX q MB**	0.000053	0.00000028	ug/L		11/23/22 12:28	11/30/22 18:48	1
1,2,3,7,8,9-HxCDD	**0.00000093**	**J,DX q MB**	0.000053	0.00000024	ug/L		11/23/22 12:28	11/30/22 18:48	1
1,2,3,4,7,8-HxCDF	**0.0000013**	**J,DX MB**	0.000053	0.00000019	ug/L		11/23/22 12:28	11/30/22 18:48	1
1,2,3,6,7,8-HxCDF	**0.0000011**	**J,DX q MB**	0.000053	0.00000019	ug/L		11/23/22 12:28	11/30/22 18:48	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: ILBMP0005_20221108
Date Collected: 11/08/22 06:30
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-5
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8,9-HxCDF	**0.0000023**	**J,DX q MB**	0.000053	0.00000023	ug/L		11/23/22 12:28	11/30/22 18:48	1
2,3,4,6,7,8-HxCDF	**0.00000076**	**J,DX q MB**	0.000053	0.00000019	ug/L		11/23/22 12:28	11/30/22 18:48	1
1,2,3,4,6,7,8-HpCDD	**0.000015**	**J,DX MB**	0.000053	0.00000030	ug/L		11/23/22 12:28	11/30/22 18:48	1
1,2,3,4,6,7,8-HpCDF	**0.000017**	**J,DX MB**	0.000053	0.00000036	ug/L		11/23/22 12:28	11/30/22 18:48	1
1,2,3,4,7,8,9-HpCDF	ND		0.000053	0.00000042	ug/L		11/23/22 12:28	11/30/22 18:48	1
OCDD	**0.00013**	**MB**	0.00011	0.00000057	ug/L		11/23/22 12:28	11/30/22 18:48	1
OCDF	**0.000013**	**J,DX q MB**	0.00011	0.00000058	ug/L		11/23/22 12:28	11/30/22 18:48	1
Total TCDD	ND		0.000011	0.00000076	ug/L		11/23/22 12:28	11/30/22 18:48	1
Total TCDF	ND		0.000011	0.00000014	ug/L		11/23/22 12:28	11/30/22 18:48	1
Total PeCDD	ND		0.000053	0.00000040	ug/L		11/23/22 12:28	11/30/22 18:48	1
Total PeCDF	**0.0000021**	**J,DX MB**	0.000053	0.00000020	ug/L		11/23/22 12:28	11/30/22 18:48	1
Total HxCDD	**0.000012**	**J,DX q MB**	0.000053	0.00000024	ug/L		11/23/22 12:28	11/30/22 18:48	1
Total HxCDF	**0.000013**	**J,DX q MB**	0.000053	0.00000019	ug/L		11/23/22 12:28	11/30/22 18:48	1
Total HpCDD	**0.000050**	**J,DX MB**	0.000053	0.00000030	ug/L		11/23/22 12:28	11/30/22 18:48	1
Total HpCDF	**0.000024**	**J,DX MB**	0.000053	0.00000036	ug/L		11/23/22 12:28	11/30/22 18:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*61*		*25 - 164*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-2,3,7,8-TCDF	*51*		*24 - 169*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*25 - 181*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-1,2,3,7,8-PeCDF	*69*		*24 - 185*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-2,3,4,7,8-PeCDF	*68*		*21 - 178*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-1,2,3,4,7,8-HxCDD	*74*		*32 - 141*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-1,2,3,6,7,8-HxCDD	*69*		*28 - 130*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-1,2,3,4,7,8-HxCDF	*69*		*26 - 152*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-1,2,3,6,7,8-HxCDF	*72*		*26 - 123*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-1,2,3,7,8,9-HxCDF	*69*		*29 - 147*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-2,3,4,6,7,8-HxCDF	*73*		*28 - 136*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*80*		*23 - 140*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*69*		*28 - 143*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*75*		*26 - 138*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-OCDD	*71*		*17 - 157*	*11/23/22 12:28*	*11/30/22 18:48*	*1*
13C-OCDF	*75*		*17 - 157*	*11/23/22 12:28*	*11/30/22 18:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*81*		*35 - 197*	*11/23/22 12:28*	*11/30/22 18:48*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: ILBMP0008_20221108
Date Collected: 11/08/22 06:35
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-6
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000065	ug/L		11/23/22 12:28	11/30/22 19:36	1
1,2,3,7,8-PeCDD	ND		0.000051	0.00000050	ug/L		11/23/22 12:28	11/30/22 19:36	1
1,2,3,7,8-PeCDF	**0.0000022**	**J,DX MB**	0.000051	0.00000045	ug/L		11/23/22 12:28	11/30/22 19:36	1
2,3,4,7,8-PeCDF	**0.0000014**	**J,DX MB**	0.000051	0.00000046	ug/L		11/23/22 12:28	11/30/22 19:36	1
1,2,3,4,7,8-HxCDD	**0.0000029**	**J,DX MB**	0.000051	0.00000048	ug/L		11/23/22 12:28	11/30/22 19:36	1
1,2,3,6,7,8-HxCDD	**0.0000038**	**J,DX MB**	0.000051	0.00000055	ug/L		11/23/22 12:28	11/30/22 19:36	1
1,2,3,7,8,9-HxCDD	**0.0000034**	**J,DX MB**	0.000051	0.00000046	ug/L		11/23/22 12:28	11/30/22 19:36	1
1,2,3,4,7,8-HxCDF	**0.0000035**	**J,DX MB q**	0.000051	0.00000057	ug/L		11/23/22 12:28	11/30/22 19:36	1
1,2,3,6,7,8-HxCDF	**0.0000052**	**J,DX MB**	0.000051	0.00000058	ug/L		11/23/22 12:28	11/30/22 19:36	1
1,2,3,7,8,9-HxCDF	**0.0000019**	**J,DX MB q**	0.000051	0.00000068	ug/L		11/23/22 12:28	11/30/22 19:36	1
2,3,4,6,7,8-HxCDF	**0.0000047**	**J,DX MB**	0.000051	0.00000055	ug/L		11/23/22 12:28	11/30/22 19:36	1
1,2,3,4,6,7,8-HpCDD	**0.00010**	**MB**	0.000051	0.0000013	ug/L		11/23/22 12:28	11/30/22 19:36	1
1,2,3,4,6,7,8-HpCDF	**0.00013**	**MB**	0.000051	0.00000092	ug/L		11/23/22 12:28	11/30/22 19:36	1
1,2,3,4,7,8,9-HpCDF	**0.0000033**	**J,DX MB**	0.000051	0.00000095	ug/L		11/23/22 12:28	11/30/22 19:36	1
OCDD	**0.00099**	**MB**	0.00010	0.0000031	ug/L		11/23/22 12:28	11/30/22 19:36	1
OCDF	**0.00012**	**MB**	0.00010	0.00000081	ug/L		11/23/22 12:28	11/30/22 19:36	1
Total TCDD	ND		0.000010	0.00000065	ug/L		11/23/22 12:28	11/30/22 19:36	1
Total TCDF	**0.000012**	**q**	0.000010	0.00000021	ug/L		11/23/22 12:28	11/30/22 19:36	1
Total PeCDD	**0.0000029**	**J,DX q MB**	0.000051	0.00000050	ug/L		11/23/22 12:28	11/30/22 19:36	1
Total PeCDF	**0.000022**	**J,DX q MB**	0.000051	0.00000045	ug/L		11/23/22 12:28	11/30/22 19:36	1
Total HxCDD	**0.000065**	**J,DX MB q**	0.000051	0.00000046	ug/L		11/23/22 12:28	11/30/22 19:36	1
Total HxCDF	**0.000091**	**J,DX MB q**	0.000051	0.00000055	ug/L		11/23/22 12:28	11/30/22 19:36	1
Total HpCDD	**0.00043**	**MB**	0.000051	0.0000013	ug/L		11/23/22 12:28	11/30/22 19:36	1
Total HpCDF	**0.00020**	**J,DX MB**	0.000051	0.00000092	ug/L		11/23/22 12:28	11/30/22 19:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-2,3,7,8-TCDF	*52*		*24 - 169*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*25 - 181*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-1,2,3,7,8-PeCDF	*71*		*24 - 185*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-2,3,4,7,8-PeCDF	*72*		*21 - 178*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-1,2,3,4,7,8-HxCDD	*84*		*32 - 141*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-1,2,3,6,7,8-HxCDD	*78*		*28 - 130*	*11/23/22 12:28*	*11/30/22 19:36*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: ILBMP0008_20221108
Date Collected: 11/08/22 06:35
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-6
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDF	*77*		*26 - 152*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-1,2,3,6,7,8-HxCDF	*77*		*26 - 123*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-1,2,3,7,8,9-HxCDF	*74*		*29 - 147*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-2,3,4,6,7,8-HxCDF	*83*		*28 - 136*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*93*		*23 - 140*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*80*		*28 - 143*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*92*		*26 - 138*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-OCDD	*79*		*17 - 157*	*11/23/22 12:28*	*11/30/22 19:36*	*1*
13C-OCDF	*85*		*17 - 157*	*11/23/22 12:28*	*11/30/22 19:36*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*81*		*35 - 197*	*11/23/22 12:28*	*11/30/22 19:36*	*1*

Client Sample ID: LPBMP0002_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-7
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000015	0.00000091	ug/L		11/23/22 12:28	11/30/22 20:23	1
2,3,7,8-TCDF	ND		0.000015	0.00000027	ug/L		11/23/22 12:28	11/30/22 20:23	1
1,2,3,7,8-PeCDD	**0.0000044**	**J,DX MB**	0.000075	0.00000081	ug/L		11/23/22 12:28	11/30/22 20:23	1
1,2,3,7,8-PeCDF	**0.0000028**	**J,DX q MB**	0.000075	0.00000043	ug/L		11/23/22 12:28	11/30/22 20:23	1
2,3,4,7,8-PeCDF	**0.0000010**	**J,DX q MB**	0.000075	0.00000048	ug/L		11/23/22 12:28	11/30/22 20:23	1
1,2,3,4,7,8-HxCDD	**0.0000099**	**J,DX MB**	0.000075	0.0000010	ug/L		11/23/22 12:28	11/30/22 20:23	1
1,2,3,6,7,8-HxCDD	**0.000015**	**J,DX MB**	0.000075	0.0000011	ug/L		11/23/22 12:28	11/30/22 20:23	1
1,2,3,7,8,9-HxCDD	**0.000013**	**J,DX MB**	0.000075	0.00000095	ug/L		11/23/22 12:28	11/30/22 20:23	1
1,2,3,4,7,8-HxCDF	**0.0000051**	**J,DX MB**	0.000075	0.00000065	ug/L		11/23/22 12:28	11/30/22 20:23	1
1,2,3,6,7,8-HxCDF	**0.0000051**	**J,DX MB**	0.000075	0.00000066	ug/L		11/23/22 12:28	11/30/22 20:23	1
1,2,3,7,8,9-HxCDF	**0.0000028**	**J,DX q MB**	0.000075	0.00000078	ug/L		11/23/22 12:28	11/30/22 20:23	1
2,3,4,6,7,8-HxCDF	**0.0000046**	**J,DX MB**	0.000075	0.00000065	ug/L		11/23/22 12:28	11/30/22 20:23	1
1,2,3,4,6,7,8-HpCDD	**0.00030**	**MB**	0.000075	0.0000025	ug/L		11/23/22 12:28	11/30/22 20:23	1
1,2,3,4,6,7,8-HpCDF	**0.00011**	**MB**	0.000075	0.0000011	ug/L		11/23/22 12:28	11/30/22 20:23	1
1,2,3,4,7,8,9-HpCDF	**0.0000044**	**J,DX MB**	0.000075	0.0000012	ug/L		11/23/22 12:28	11/30/22 20:23	1
OCDD	**0.0046**	**MB**	0.00015	0.000012	ug/L		11/23/22 12:28	11/30/22 20:23	1
OCDF	**0.00011**	**J,DX MB**	0.00015	0.0000014	ug/L		11/23/22 12:28	11/30/22 20:23	1
Total TCDD	**0.0000028**	**J,DX q**	0.000015	0.00000091	ug/L		11/23/22 12:28	11/30/22 20:23	1
Total TCDF	ND		0.000015	0.00000027	ug/L		11/23/22 12:28	11/30/22 20:23	1
Total PeCDD	**0.0000044**	**J,DX MB**	0.000075	0.00000081	ug/L		11/23/22 12:28	11/30/22 20:23	1
Total PeCDF	**0.000016**	**J,DX q MB**	0.000075	0.00000043	ug/L		11/23/22 12:28	11/30/22 20:23	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LPBMP0002_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-7
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HxCDD	**0.00011**	**J,DX MB q**	0.000075	0.00000095	ug/L		11/23/22 12:28	11/30/22 20:23	1
Total HxCDF	**0.000088**	**J,DX MB q**	0.000075	0.00000065	ug/L		11/23/22 12:28	11/30/22 20:23	1
Total HpCDD	**0.00068**	**MB**	0.000075	0.0000025	ug/L		11/23/22 12:28	11/30/22 20:23	1
Total HpCDF	**0.00018**	**J,DX MB**	0.000075	0.0000011	ug/L		11/23/22 12:28	11/30/22 20:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-2,3,7,8-TCDF	*50*		*24 - 169*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-1,2,3,7,8-PeCDD	*79*		*25 - 181*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-1,2,3,7,8-PeCDF	*68*		*24 - 185*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-2,3,4,7,8-PeCDF	*67*		*21 - 178*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-1,2,3,4,7,8-HxCDD	*75*		*32 - 141*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-1,2,3,6,7,8-HxCDD	*72*		*28 - 130*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-1,2,3,4,7,8-HxCDF	*74*		*26 - 152*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-1,2,3,6,7,8-HxCDF	*76*		*26 - 123*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-1,2,3,7,8,9-HxCDF	*70*		*29 - 147*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-2,3,4,6,7,8-HxCDF	*76*		*28 - 136*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*84*		*23 - 140*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*67*		*28 - 143*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*79*		*26 - 138*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-OCDD	*69*		*17 - 157*	*11/23/22 12:28*	*11/30/22 20:23*	*1*
13C-OCDF	*75*		*17 - 157*	*11/23/22 12:28*	*11/30/22 20:23*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*80*		*35 - 197*	*11/23/22 12:28*	*11/30/22 20:23*	*1*

Client Sample ID: LPBMP0003_20221108
Date Collected: 11/08/22 07:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-8
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000055	ug/L		11/28/22 08:43	12/01/22 06:16	1
2,3,7,8-TCDF	ND		0.000010	0.00000021	ug/L		11/28/22 08:43	12/01/22 06:16	1
1,2,3,7,8-PeCDD	**0.0000031**	**J,DX MB**	0.000052	0.00000049	ug/L		11/28/22 08:43	12/01/22 06:16	1
1,2,3,7,8-PeCDF	**0.0000027**	**J,DX MB**	0.000052	0.00000033	ug/L		11/28/22 08:43	12/01/22 06:16	1
2,3,4,7,8-PeCDF	**0.00000087**	**J,DX q**	0.000052	0.00000041	ug/L		11/28/22 08:43	12/01/22 06:16	1
1,2,3,4,7,8-HxCDD	**0.0000064**	**J,DX MB**	0.000052	0.00000061	ug/L		11/28/22 08:43	12/01/22 06:16	1
1,2,3,6,7,8-HxCDD	**0.000011**	**J,DX q MB**	0.000052	0.00000065	ug/L		11/28/22 08:43	12/01/22 06:16	1
1,2,3,7,8,9-HxCDD	**0.000011**	**J,DX MB**	0.000052	0.00000057	ug/L		11/28/22 08:43	12/01/22 06:16	1
1,2,3,4,7,8-HxCDF	**0.0000045**	**J,DX MB**	0.000052	0.00000048	ug/L		11/28/22 08:43	12/01/22 06:16	1
1,2,3,6,7,8-HxCDF	**0.0000034**	**J,DX MB**	0.000052	0.00000047	ug/L		11/28/22 08:43	12/01/22 06:16	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LPBMP0003_20221108
Date Collected: 11/08/22 07:10
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-8
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8,9-HxCDF	0.0000026	J,DX MB	0.000052	0.00000054	ug/L		11/28/22 08:43	12/01/22 06:16	1
2,3,4,6,7,8-HxCDF	0.0000027	J,DX MB	0.000052	0.00000045	ug/L		11/28/22 08:43	12/01/22 06:16	1
1,2,3,4,6,7,8-HpCDD	0.00026	MB	0.000052	0.0000022	ug/L		11/28/22 08:43	12/01/22 06:16	1
1,2,3,4,6,7,8-HpCDF	0.000089	MB	0.000052	0.0000011	ug/L		11/28/22 08:43	12/01/22 06:16	1
1,2,3,4,7,8,9-HpCDF	0.0000035	J,DX MB	0.000052	0.0000012	ug/L		11/28/22 08:43	12/01/22 06:16	1
OCDD	0.0036	MB	0.00010	0.000014	ug/L		11/28/22 08:43	12/01/22 06:16	1
OCDF	0.00010	J,DX MB	0.00010	0.0000012	ug/L		11/28/22 08:43	12/01/22 06:16	1
Total TCDD	ND		0.000010	0.00000055	ug/L		11/28/22 08:43	12/01/22 06:16	1
Total TCDF	ND		0.000010	0.00000021	ug/L		11/28/22 08:43	12/01/22 06:16	1
Total PeCDD	0.0000031	J,DX MB	0.000052	0.00000049	ug/L		11/28/22 08:43	12/01/22 06:16	1
Total PeCDF	0.000013	J,DX q MB	0.000052	0.00000033	ug/L		11/28/22 08:43	12/01/22 06:16	1
Total HxCDD	0.000080	J,DX MB q	0.000052	0.00000057	ug/L		11/28/22 08:43	12/01/22 06:16	1
Total HxCDF	0.000062	J,DX MB q	0.000052	0.00000045	ug/L		11/28/22 08:43	12/01/22 06:16	1
Total HpCDD	0.00057	MB	0.000052	0.0000022	ug/L		11/28/22 08:43	12/01/22 06:16	1
Total HpCDF	0.00015	J,DX MB	0.000052	0.0000011	ug/L		11/28/22 08:43	12/01/22 06:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-2,3,7,8-TCDF	*49*		*24 - 169*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-1,2,3,7,8-PeCDD	*74*		*25 - 181*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-1,2,3,7,8-PeCDF	*67*		*24 - 185*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-2,3,4,7,8-PeCDF	*61*		*21 - 178*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-1,2,3,4,7,8-HxCDD	*69*		*32 - 141*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-1,2,3,6,7,8-HxCDD	*65*		*28 - 130*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-1,2,3,4,7,8-HxCDF	*65*		*26 - 152*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-1,2,3,6,7,8-HxCDF	*69*		*26 - 123*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-1,2,3,7,8,9-HxCDF	*70*		*29 - 147*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-2,3,4,6,7,8-HxCDF	*75*		*28 - 136*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*77*		*23 - 140*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*64*		*28 - 143*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*73*		*26 - 138*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-OCDD	*66*		*17 - 157*	*11/28/22 08:43*	*12/01/22 06:16*	*1*
13C-OCDF	*69*		*17 - 157*	*11/28/22 08:43*	*12/01/22 06:16*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*77*		*35 - 197*	*11/28/22 08:43*	*12/01/22 06:16*	*1*

Client Sample ID: LPBMP0004_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-9
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000046	ug/L		11/28/22 08:43	12/01/22 07:03	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LPBMP0004_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-9
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.00000010	ug/L		11/28/22 08:43	12/01/22 07:03	1
1,2,3,7,8-PeCDD	**0.0000015**	**J,DX MB**	0.000052	0.00000030	ug/L		11/28/22 08:43	12/01/22 07:03	1
1,2,3,7,8-PeCDF	**0.0000021**	**J,DX MB**	0.000052	0.00000018	ug/L		11/28/22 08:43	12/01/22 07:03	1
2,3,4,7,8-PeCDF	ND		0.000052	0.00000020	ug/L		11/28/22 08:43	12/01/22 07:03	1
1,2,3,4,7,8-HxCDD	**0.0000031**	**J,DX MB**	0.000052	0.00000022	ug/L		11/28/22 08:43	12/01/22 07:03	1
1,2,3,6,7,8-HxCDD	ND		0.000052	0.00000025	ug/L		11/28/22 08:43	12/01/22 07:03	1
1,2,3,7,8,9-HxCDD	**0.0000023**	**J,DX q MB**	0.000052	0.00000021	ug/L		11/28/22 08:43	12/01/22 07:03	1
1,2,3,4,7,8-HxCDF	**0.0000018**	**J,DX MB**	0.000052	0.00000020	ug/L		11/28/22 08:43	12/01/22 07:03	1
1,2,3,6,7,8-HxCDF	**0.0000014**	**J,DX MB**	0.000052	0.00000020	ug/L		11/28/22 08:43	12/01/22 07:03	1
1,2,3,7,8,9-HxCDF	**0.0000025**	**J,DX q MB**	0.000052	0.00000025	ug/L		11/28/22 08:43	12/01/22 07:03	1
2,3,4,6,7,8-HxCDF	**0.0000013**	**J,DX MB**	0.000052	0.00000020	ug/L		11/28/22 08:43	12/01/22 07:03	1
1,2,3,4,6,7,8-HpCDD	**0.000054**	**MB**	0.000052	0.00000074	ug/L		11/28/22 08:43	12/01/22 07:03	1
1,2,3,4,6,7,8-HpCDF	**0.000019**	**J,DX MB**	0.000052	0.00000044	ug/L		11/28/22 08:43	12/01/22 07:03	1
1,2,3,4,7,8,9-HpCDF	**0.0000019**	**J,DX MB**	0.000052	0.00000050	ug/L		11/28/22 08:43	12/01/22 07:03	1
OCDD	**0.00064**	**MB**	0.00010	0.0000035	ug/L		11/28/22 08:43	12/01/22 07:03	1
OCDF	**0.000022**	**J,DX MB**	0.00010	0.00000073	ug/L		11/28/22 08:43	12/01/22 07:03	1
Total TCDD	ND		0.000010	0.00000046	ug/L		11/28/22 08:43	12/01/22 07:03	1
Total TCDF	ND		0.000010	0.00000010	ug/L		11/28/22 08:43	12/01/22 07:03	1
Total PeCDD	**0.0000015**	**J,DX MB**	0.000052	0.00000030	ug/L		11/28/22 08:43	12/01/22 07:03	1
Total PeCDF	**0.0000027**	**J,DX q MB**	0.000052	0.00000018	ug/L		11/28/22 08:43	12/01/22 07:03	1
Total HxCDD	**0.000013**	**J,DX q MB**	0.000052	0.00000021	ug/L		11/28/22 08:43	12/01/22 07:03	1
Total HxCDF	**0.000014**	**J,DX q MB**	0.000052	0.00000020	ug/L		11/28/22 08:43	12/01/22 07:03	1
Total HpCDD	**0.00011**	**MB**	0.000052	0.00000074	ug/L		11/28/22 08:43	12/01/22 07:03	1
Total HpCDF	**0.000027**	**J,DX MB**	0.000052	0.00000044	ug/L		11/28/22 08:43	12/01/22 07:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*62*		*25 - 164*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-2,3,7,8-TCDF	*54*		*24 - 169*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-1,2,3,7,8-PeCDD	*77*		*25 - 181*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-1,2,3,7,8-PeCDF	*68*		*24 - 185*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-2,3,4,7,8-PeCDF	*70*		*21 - 178*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*32 - 141*	*11/28/22 08:43*	*12/01/22 07:03*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LPBMP0004_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-9
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,6,7,8-HxCDD	*73*		*28 - 130*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-1,2,3,4,7,8-HxCDF	*73*		*26 - 152*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-1,2,3,6,7,8-HxCDF	*76*		*26 - 123*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-1,2,3,7,8,9-HxCDF	*71*		*29 - 147*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-2,3,4,6,7,8-HxCDF	*78*		*28 - 136*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*80*		*23 - 140*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*68*		*28 - 143*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*76*		*26 - 138*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-OCDD	*66*		*17 - 157*	*11/28/22 08:43*	*12/01/22 07:03*	*1*
13C-OCDF	*69*		*17 - 157*	*11/28/22 08:43*	*12/01/22 07:03*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*75*		*35 - 197*	*11/28/22 08:43*	*12/01/22 07:03*	*1*

Client Sample ID: LPBMP0002_DUP_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-10
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000097	0.00000055	ug/L		11/28/22 08:43	12/01/22 07:51	1
2,3,7,8-TCDF	ND		0.0000097	0.00000017	ug/L		11/28/22 08:43	12/01/22 07:51	1
1,2,3,7,8-PeCDD	**0.0000017**	**J,DX q MB**	0.000049	0.00000058	ug/L		11/28/22 08:43	12/01/22 07:51	1
1,2,3,7,8-PeCDF	**0.0000021**	**J,DX MB**	0.000049	0.00000025	ug/L		11/28/22 08:43	12/01/22 07:51	1
2,3,4,7,8-PeCDF	ND		0.000049	0.00000029	ug/L		11/28/22 08:43	12/01/22 07:51	1
1,2,3,4,7,8-HxCDD	**0.0000048**	**J,DX MB**	0.000049	0.00000044	ug/L		11/28/22 08:43	12/01/22 07:51	1
1,2,3,6,7,8-HxCDD	**0.0000088**	**J,DX MB**	0.000049	0.00000047	ug/L		11/28/22 08:43	12/01/22 07:51	1
1,2,3,7,8,9-HxCDD	**0.0000071**	**J,DX MB**	0.000049	0.00000041	ug/L		11/28/22 08:43	12/01/22 07:51	1
1,2,3,4,7,8-HxCDF	**0.0000035**	**J,DX q MB**	0.000049	0.00000051	ug/L		11/28/22 08:43	12/01/22 07:51	1
1,2,3,6,7,8-HxCDF	**0.0000035**	**J,DX MB**	0.000049	0.00000048	ug/L		11/28/22 08:43	12/01/22 07:51	1
1,2,3,7,8,9-HxCDF	**0.0000022**	**J,DX MB**	0.000049	0.00000056	ug/L		11/28/22 08:43	12/01/22 07:51	1
2,3,4,6,7,8-HxCDF	**0.0000026**	**J,DX MB**	0.000049	0.00000047	ug/L		11/28/22 08:43	12/01/22 07:51	1
1,2,3,4,6,7,8-HpCDD	**0.00020**	**MB**	0.000049	0.0000017	ug/L		11/28/22 08:43	12/01/22 07:51	1
1,2,3,4,6,7,8-HpCDF	**0.000060**	**MB**	0.000049	0.00000082	ug/L		11/28/22 08:43	12/01/22 07:51	1
1,2,3,4,7,8,9-HpCDF	**0.0000023**	**J,DX MB q**	0.000049	0.00000089	ug/L		11/28/22 08:43	12/01/22 07:51	1
OCDD	**0.0020**	**MB**	0.000097	0.0000052	ug/L		11/28/22 08:43	12/01/22 07:51	1
OCDF	**0.000066**	**J,DX MB**	0.000097	0.00000075	ug/L		11/28/22 08:43	12/01/22 07:51	1
Total TCDD	ND		0.0000097	0.00000055	ug/L		11/28/22 08:43	12/01/22 07:51	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LPBMP0002_DUP_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-10
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDF	ND		0.0000097	0.00000017	ug/L		11/28/22 08:43	12/01/22 07:51	1
Total PeCDD	**0.0000017**	**J,DX q MB**	0.000049	0.00000058	ug/L		11/28/22 08:43	12/01/22 07:51	1
Total PeCDF	**0.000010**	**J,DX q MB**	0.000049	0.00000025	ug/L		11/28/22 08:43	12/01/22 07:51	1
Total HxCDD	**0.000060**	**J,DX MB q**	0.000049	0.00000041	ug/L		11/28/22 08:43	12/01/22 07:51	1
Total HxCDF	**0.000048**	**J,DX q MB**	0.000049	0.00000047	ug/L		11/28/22 08:43	12/01/22 07:51	1
Total HpCDD	**0.00045**	**MB**	0.000049	0.0000017	ug/L		11/28/22 08:43	12/01/22 07:51	1
Total HpCDF	**0.00010**	**J,DX MB q**	0.000049	0.00000082	ug/L		11/28/22 08:43	12/01/22 07:51	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*64*		*25 - 164*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-2,3,7,8-TCDF	*53*		*24 - 169*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-1,2,3,7,8-PeCDD	*77*		*25 - 181*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-1,2,3,7,8-PeCDF	*69*		*24 - 185*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-2,3,4,7,8-PeCDF	*64*		*21 - 178*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-1,2,3,4,7,8-HxCDD	*70*		*32 - 141*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-1,2,3,6,7,8-HxCDD	*71*		*28 - 130*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-1,2,3,4,7,8-HxCDF	*70*		*26 - 152*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-1,2,3,6,7,8-HxCDF	*73*		*26 - 123*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-1,2,3,7,8,9-HxCDF	*72*		*29 - 147*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-2,3,4,6,7,8-HxCDF	*77*		*28 - 136*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*81*		*23 - 140*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*69*		*28 - 143*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*81*		*26 - 138*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-OCDD	*70*		*17 - 157*	*11/28/22 08:43*	*12/01/22 07:51*	*1*
13C-OCDF	*74*		*17 - 157*	*11/28/22 08:43*	*12/01/22 07:51*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*80*		*35 - 197*	*11/28/22 08:43*	*12/01/22 07:51*	*1*

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000057	ug/L		11/28/22 08:43	12/01/22 08:39	1
2,3,7,8-TCDF	ND		0.000010	0.00000021	ug/L		11/28/22 08:43	12/01/22 08:39	1
1,2,3,7,8-PeCDD	ND		0.000052	0.00000060	ug/L		11/28/22 08:43	12/01/22 08:39	1
1,2,3,7,8-PeCDF	**0.0000021**	**J,DX q MB**	0.000052	0.00000064	ug/L		11/28/22 08:43	12/01/22 08:39	1
2,3,4,7,8-PeCDF	ND		0.000052	0.00000072	ug/L		11/28/22 08:43	12/01/22 08:39	1
1,2,3,4,7,8-HxCDD	**0.0000044**	**J,DX MB**	0.000052	0.00000079	ug/L		11/28/22 08:43	12/01/22 08:39	1
1,2,3,6,7,8-HxCDD	**0.000015**	**J,DX MB**	0.000052	0.00000089	ug/L		11/28/22 08:43	12/01/22 08:39	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8,9-HxCDD	0.0000083	J,DX MB	0.000052	0.00000076	ug/L		11/28/22 08:43	12/01/22 08:39	1
1,2,3,4,7,8-HxCDF	0.0000059	J,DX MB	0.000052	0.00000097	ug/L		11/28/22 08:43	12/01/22 08:39	1
1,2,3,6,7,8-HxCDF	0.000011	J,DX MB	0.000052	0.00000093	ug/L		11/28/22 08:43	12/01/22 08:39	1
1,2,3,7,8,9-HxCDF	0.0000025	J,DX MB	0.000052	0.0000011	ug/L		11/28/22 08:43	12/01/22 08:39	1
2,3,4,6,7,8-HxCDF	0.0000086	J,DX MB	0.000052	0.00000092	ug/L		11/28/22 08:43	12/01/22 08:39	1
1,2,3,4,6,7,8-HpCDD	0.00041	MB	0.000052	0.0000026	ug/L		11/28/22 08:43	12/01/22 08:39	1
1,2,3,4,6,7,8-HpCDF	0.00023	MB	0.000052	0.0000022	ug/L		11/28/22 08:43	12/01/22 08:39	1
1,2,3,4,7,8,9-HpCDF	0.0000073	J,DX MB	0.000052	0.0000025	ug/L		11/28/22 08:43	12/01/22 08:39	1
OCDD	0.0025	MB	0.00010	0.0000085	ug/L		11/28/22 08:43	12/01/22 08:39	1
OCDF	0.00024	MB	0.00010	0.0000015	ug/L		11/28/22 08:43	12/01/22 08:39	1
Total TCDD	ND		0.000010	0.00000057	ug/L		11/28/22 08:43	12/01/22 08:39	1
Total TCDF	0.0000017	J,DX q	0.000010	0.00000021	ug/L		11/28/22 08:43	12/01/22 08:39	1
Total PeCDD	0.0000029	J,DX MB	0.000052	0.00000060	ug/L		11/28/22 08:43	12/01/22 08:39	1
Total PeCDF	0.000033	J,DX q MB	0.000052	0.00000064	ug/L		11/28/22 08:43	12/01/22 08:39	1
Total HxCDD	0.00011	J,DX MB	0.000052	0.00000076	ug/L		11/28/22 08:43	12/01/22 08:39	1
Total HxCDF	0.00017	J,DX MB q	0.000052	0.00000092	ug/L		11/28/22 08:43	12/01/22 08:39	1
Total HpCDD	0.00071	MB	0.000052	0.0000026	ug/L		11/28/22 08:43	12/01/22 08:39	1
Total HpCDF	0.00037	J,DX MB	0.000052	0.0000022	ug/L		11/28/22 08:43	12/01/22 08:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*62*		*25 - 164*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-2,3,7,8-TCDF	*53*		*24 - 169*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*25 - 181*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-1,2,3,7,8-PeCDF	*70*		*24 - 185*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-2,3,4,7,8-PeCDF	*70*		*21 - 178*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*32 - 141*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-1,2,3,6,7,8-HxCDD	*75*		*28 - 130*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-1,2,3,4,7,8-HxCDF	*73*		*26 - 152*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-1,2,3,6,7,8-HxCDF	*78*		*26 - 123*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-1,2,3,7,8,9-HxCDF	*73*		*29 - 147*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-2,3,4,6,7,8-HxCDF	*78*		*28 - 136*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*82*		*23 - 140*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*71*		*28 - 143*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*26 - 138*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-OCDD	*67*		*17 - 157*	*11/28/22 08:43*	*12/01/22 08:39*	*1*
13C-OCDF	*74*		*17 - 157*	*11/28/22 08:43*	*12/01/22 08:39*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*81*		*35 - 197*	*11/28/22 08:43*	*12/01/22 08:39*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: ILBMP0008_20221108
Date Collected: 11/08/22 06:35
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-6
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.0000036	ug/L		11/23/22 12:28	12/05/22 13:29	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*55*		*24 - 169*	*11/23/22 12:28*	*12/05/22 13:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*98*		*35 - 197*	*11/23/22 12:28*	*12/05/22 13:29*	*1*

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: B1BMP009_20221108
Date Collected: 11/08/22 06:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0075		0.00050	0.000079	ug/L			11/15/22 20:04	1

Client Sample ID: B1BMP010_20221108
Date Collected: 11/08/22 06:05
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0028		0.00050	0.000079	ug/L			11/15/22 20:21	1

Client Sample ID: B1BMP011_20221108
Date Collected: 11/08/22 06:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0059	MB	0.00050	0.000079	ug/L			11/16/22 13:56	1

Client Sample ID: ILBMP0004_20221108
Date Collected: 11/08/22 06:25
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0088	MB	0.00050	0.000079	ug/L			11/16/22 16:47	1

Client Sample ID: ILBMP0005_20221108
Date Collected: 11/08/22 06:30
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.013	MB	0.00050	0.000079	ug/L			11/16/22 16:56	1

Client Sample ID: ILBMP0008_20221108
Date Collected: 11/08/22 06:35
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0045	MB	0.00050	0.000079	ug/L			11/16/22 17:12	1

Client Sample ID: LPBMP0002_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0077	MB	0.00050	0.000079	ug/L			11/16/22 17:21	1

Client Sample ID: LPBMP0003_20221108
Date Collected: 11/08/22 07:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0081	MB	0.00050	0.000079	ug/L			11/16/22 17:29	1

Client Sample ID: LPBMP0004_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.017	MB	0.00050	0.000079	ug/L			11/16/22 17:37	1

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: LPBMP0002_DUP_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-10
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.011	MB	0.00050	0.000079	ug/L			11/16/22 17:46	1

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.037	MB	0.0025	0.00040	ug/L			11/16/22 14:09	5

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: B1BMP009_20221108
Date Collected: 11/08/22 06:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0022	MB	0.00050	0.000079	ug/L			11/15/22 20:17	1

Client Sample ID: B1BMP010_20221108
Date Collected: 11/08/22 06:05
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0021	MB	0.00050	0.000079	ug/L			11/15/22 20:25	1

Client Sample ID: B1BMP011_20221108
Date Collected: 11/08/22 06:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0044	MB	0.00050	0.000079	ug/L			11/16/22 16:43	1

Client Sample ID: ILBMP0004_20221108
Date Collected: 11/08/22 06:25
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0024	MB	0.00050	0.000079	ug/L			11/16/22 16:51	1

Client Sample ID: ILBMP0005_20221108
Date Collected: 11/08/22 06:30
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0085	MB	0.00050	0.000079	ug/L			11/16/22 17:00	1

Client Sample ID: ILBMP0008_20221108
Date Collected: 11/08/22 06:35
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0019	MB	0.00050	0.000079	ug/L			11/16/22 17:16	1

Client Sample ID: LPBMP0002_20221108
Date Collected: 11/08/22 07:15
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0040	MB	0.00050	0.000079	ug/L			11/16/22 17:25	1

Client Sample ID: LPBMP0003_20221108
Date Collected: 11/08/22 07:10
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-8
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0042	MB	0.00050	0.000079	ug/L			11/16/22 17:33	1

Client Sample ID: LPBMP0004_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20
Lab Sample ID: 570-116265-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.012	MB	0.00050	0.000079	ug/L			11/16/22 17:41	1

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: LPBMP0002_DUP_20221108
Lab Sample ID: 570-116265-10
Date Collected: 11/08/22 07:15
Matrix: Water
Date Received: 11/08/22 16:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0057	MB	0.00050	0.000079	ug/L			11/16/22 17:50	1

Client Sample ID: EPSW001IE01_20221108
Lab Sample ID: 570-116265-11
Date Collected: 11/08/22 07:00
Matrix: Water
Date Received: 11/08/22 16:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0044	MB	0.00050	0.000079	ug/L			11/16/22 18:15	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-116265-1	B1BMP009_20221108	86
570-116265-2	B1BMP010_20221108	82
570-116265-3	B1BMP011_20221108	80
570-116265-4	ILBMP0004_20221108	83
570-116265-5	ILBMP0005_20221108	81
570-116265-6	ILBMP0008_20221108	81
570-116265-6 - RA	ILBMP0008_20221108	98
570-116265-7	LPBMP0002_20221108	80
570-116265-8	LPBMP0003_20221108	77
570-116265-9	LPBMP0004_20221108	75
570-116265-10	LPBMP0002_DUP_20221108	80
570-116265-11	EPSW001IE01_20221108	81
MB 320-635089/1-A	Method Blank	79
MB 320-635627/1-A	Method Blank	74

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-635089/2-A	Lab Control Sample	83
LCS 320-635627/2-A	Lab Control Sample	75
LCSD 320-635089/3-A	Lab Control Sample Dup	81
LCSD 320-635627/3-A	Lab Control Sample Dup	75

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-116265-1	B1BMP009_20221108	70	58	92	78	78	86	73	79
570-116265-2	B1BMP010_20221108	63	50	76	67	66	76	71	70
570-116265-3	B1BMP011_20221108	50	43	64	56	54	59	57	56
570-116265-4	ILBMP0004_20221108	60	51	78	67	65	72	68	69
570-116265-5	ILBMP0005_20221108	61	51	76	69	68	74	69	69
570-116265-6	ILBMP0008_20221108	60	52	80	71	72	84	78	77
570-116265-6 - RA	ILBMP0008_20221108		55						
570-116265-7	LPBMP0002_20221108	60	50	79	68	67	75	72	74
570-116265-8	LPBMP0003_20221108	60	49	74	67	61	69	65	65
570-116265-9	LPBMP0004_20221108	62	54	77	68	70	77	73	73
570-116265-10	LPBMP0002_DUP_20221108	64	53	77	69	64	70	71	70
570-116265-11	EPSW001IE01_20221108	62	53	76	70	70	77	75	73
MB 320-635089/1-A	Method Blank	58	48	70	62	64	67	63	65
MB 320-635627/1-A	Method Blank	57	47	64	59	60	65	59	64

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-116265-1	B1BMP009_20221108	78	79	82	94	76	91	91	97
570-116265-2	B1BMP010_20221108	72	72	77	84	71	78	74	76
570-116265-3	B1BMP011_20221108	59	58	60	70	58	66	57	64
570-116265-4	ILBMP0004_20221108	69	66	71	77	64	72	64	69
570-116265-5	ILBMP0005_20221108	72	69	73	80	69	75	71	75
570-116265-6	ILBMP0008_20221108	77	74	83	93	80	92	79	85
570-116265-6 - RA	ILBMP0008_20221108								
570-116265-7	LPBMP0002_20221108	76	70	76	84	67	79	69	75
570-116265-8	LPBMP0003_20221108	69	70	75	77	64	73	66	69
570-116265-9	LPBMP0004_20221108	76	71	78	80	68	76	66	69
570-116265-10	LPBMP0002_DUP_20221108	73	72	77	81	69	81	70	74
570-116265-11	EPSW001IE01_20221108	78	73	78	82	71	80	67	74
MB 320-635089/1-A	Method Blank	63	63	66	75	62	71	67	73
MB 320-635627/1-A	Method Blank	63	60	66	63	55	61	45	50

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-635089/2-A	Lab Control Sample	59	49	77	69	70	77	72	73
LCS 320-635627/2-A	Lab Control Sample	54	46	59	55	55	58	56	56
LCSD 320-635089/3-A	Lab Control Sample Dup	63	54	83	73	72	82	74	77
LCSD 320-635627/3-A	Lab Control Sample Dup	58	50	69	61	58	62	58	58

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-635089/2-A	Lab Control Sample	75	71	78	83	70	77	69	74
LCS 320-635627/2-A	Lab Control Sample	58	53	61	54	48	55	40	45
LCSD 320-635089/3-A	Lab Control Sample Dup	76	78	81	88	74	87	81	87
LCSD 320-635627/3-A	Lab Control Sample Dup	60	63	68	64	53	62	48	51

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-635089/1-A
Matrix: Water
Analysis Batch: 636198

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 635089

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000076	ug/L		11/23/22 12:28	11/30/22 13:13	1
2,3,7,8-TCDF	ND		0.000010	0.00000021	ug/L		11/23/22 12:28	11/30/22 13:13	1
1,2,3,7,8-PeCDD	0.00000311	J,DX	0.000050	0.00000047	ug/L		11/23/22 12:28	11/30/22 13:13	1
1,2,3,7,8-PeCDF	0.00000399	J,DX	0.000050	0.00000034	ug/L		11/23/22 12:28	11/30/22 13:13	1
2,3,4,7,8-PeCDF	0.00000250	J,DX	0.000050	0.00000035	ug/L		11/23/22 12:28	11/30/22 13:13	1
1,2,3,4,7,8-HxCDD	0.00000393	J,DX q	0.000050	0.00000028	ug/L		11/23/22 12:28	11/30/22 13:13	1
1,2,3,6,7,8-HxCDD	0.00000364	J,DX	0.000050	0.00000030	ug/L		11/23/22 12:28	11/30/22 13:13	1
1,2,3,7,8,9-HxCDD	0.00000364	J,DX	0.000050	0.00000026	ug/L		11/23/22 12:28	11/30/22 13:13	1
1,2,3,4,7,8-HxCDF	0.00000277	J,DX q	0.000050	0.00000029	ug/L		11/23/22 12:28	11/30/22 13:13	1
1,2,3,6,7,8-HxCDF	0.00000312	J,DX	0.000050	0.00000029	ug/L		11/23/22 12:28	11/30/22 13:13	1
1,2,3,7,8,9-HxCDF	0.00000525	J,DX	0.000050	0.00000032	ug/L		11/23/22 12:28	11/30/22 13:13	1
2,3,4,6,7,8-HxCDF	0.00000331	J,DX q	0.000050	0.00000028	ug/L		11/23/22 12:28	11/30/22 13:13	1
1,2,3,4,6,7,8-HpCDD	0.00000438	J,DX q	0.000050	0.00000017	ug/L		11/23/22 12:28	11/30/22 13:13	1
1,2,3,4,6,7,8-HpCDF	0.00000442	J,DX	0.000050	0.00000028	ug/L		11/23/22 12:28	11/30/22 13:13	1
1,2,3,4,7,8,9-HpCDF	0.00000322	J,DX	0.000050	0.00000031	ug/L		11/23/22 12:28	11/30/22 13:13	1
OCDD	0.0000222	J,DX q	0.00010	0.00000038	ug/L		11/23/22 12:28	11/30/22 13:13	1
OCDF	0.00000600	J,DX	0.00010	0.00000057	ug/L		11/23/22 12:28	11/30/22 13:13	1
Total TCDD	ND		0.000010	0.00000076	ug/L		11/23/22 12:28	11/30/22 13:13	1
Total TCDF	ND		0.000010	0.00000021	ug/L		11/23/22 12:28	11/30/22 13:13	1
Total PeCDD	0.00000311	J,DX	0.000050	0.00000047	ug/L		11/23/22 12:28	11/30/22 13:13	1
Total PeCDF	0.00000649	J,DX	0.000050	0.00000034	ug/L		11/23/22 12:28	11/30/22 13:13	1
Total HxCDD	0.0000112	J,DX q	0.000050	0.00000026	ug/L		11/23/22 12:28	11/30/22 13:13	1
Total HxCDF	0.0000144	J,DX q	0.000050	0.00000028	ug/L		11/23/22 12:28	11/30/22 13:13	1
Total HpCDD	0.00000640	J,DX q	0.000050	0.00000017	ug/L		11/23/22 12:28	11/30/22 13:13	1
Total HpCDF	0.00000764	J,DX	0.000050	0.00000028	ug/L		11/23/22 12:28	11/30/22 13:13	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*58*		*25 - 164*	*11/23/22 12:28*	*11/30/22 13:13*	*1*
13C-2,3,7,8-TCDF	*48*		*24 - 169*	*11/23/22 12:28*	*11/30/22 13:13*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-635089/1-A
Matrix: Water
Analysis Batch: 636198

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 635089

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	70		25 - 181	11/23/22 12:28	11/30/22 13:13	1
13C-1,2,3,7,8-PeCDF	62		24 - 185	11/23/22 12:28	11/30/22 13:13	1
13C-2,3,4,7,8-PeCDF	64		21 - 178	11/23/22 12:28	11/30/22 13:13	1
13C-1,2,3,4,7,8-HxCDD	67		32 - 141	11/23/22 12:28	11/30/22 13:13	1
13C-1,2,3,6,7,8-HxCDD	63		28 - 130	11/23/22 12:28	11/30/22 13:13	1
13C-1,2,3,4,7,8-HxCDF	65		26 - 152	11/23/22 12:28	11/30/22 13:13	1
13C-1,2,3,6,7,8-HxCDF	63		26 - 123	11/23/22 12:28	11/30/22 13:13	1
13C-1,2,3,7,8,9-HxCDF	63		29 - 147	11/23/22 12:28	11/30/22 13:13	1
13C-2,3,4,6,7,8-HxCDF	66		28 - 136	11/23/22 12:28	11/30/22 13:13	1
13C-1,2,3,4,6,7,8-HpCDD	75		23 - 140	11/23/22 12:28	11/30/22 13:13	1
13C-1,2,3,4,6,7,8-HpCDF	62		28 - 143	11/23/22 12:28	11/30/22 13:13	1
13C-1,2,3,4,7,8,9-HpCDF	71		26 - 138	11/23/22 12:28	11/30/22 13:13	1
13C-OCDD	67		17 - 157	11/23/22 12:28	11/30/22 13:13	1
13C-OCDF	73		17 - 157	11/23/22 12:28	11/30/22 13:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	79		35 - 197	11/23/22 12:28	11/30/22 13:13	1

Lab Sample ID: LCS 320-635089/2-A
Matrix: Water
Analysis Batch: 636198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 635089

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000228		ug/L		114	67 - 158
2,3,7,8-TCDF	0.000200	0.000257		ug/L		128	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.00101		ug/L		101	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000983		ug/L		98	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000984		ug/L		98	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000997		ug/L		100	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00114		ug/L		114	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000997		ug/L		100	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.00107		ug/L		107	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.00109		ug/L		109	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.00110		ug/L		110	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.00108		ug/L		108	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.00102		ug/L		102	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.00117		ug/L		117	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.00104		ug/L		104	78 - 138
OCDD	0.00200	0.00232		ug/L		116	78 - 144
OCDF	0.00200	0.00220		ug/L		110	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	59		20 - 175
13C-2,3,7,8-TCDF	49		22 - 152
13C-1,2,3,7,8-PeCDD	77		21 - 227
13C-1,2,3,7,8-PeCDF	69		21 - 192
13C-2,3,4,7,8-PeCDF	70		13 - 328

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-635089/2-A
Matrix: Water
Analysis Batch: 636198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 635089

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDD	77		21 - 193
13C-1,2,3,6,7,8-HxCDD	72		25 - 163
13C-1,2,3,4,7,8-HxCDF	73		19 - 202
13C-1,2,3,6,7,8-HxCDF	75		21 - 159
13C-1,2,3,7,8,9-HxCDF	71		17 - 205
13C-2,3,4,6,7,8-HxCDF	78		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	83		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	70		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	77		20 - 186
13C-OCDD	69		13 - 199
13C-OCDF	74		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	83		31 - 191

Lab Sample ID: LCSD 320-635089/3-A
Matrix: Water
Analysis Batch: 636198

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 635089

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000219		ug/L		110	67 - 158	4	50
2,3,7,8-TCDF			0.000200	0.000248		ug/L		124	75 - 158	3	50
1,2,3,7,8-PeCDD			0.00100	0.000979		ug/L		98	70 - 142	3	50
1,2,3,7,8-PeCDF			0.00100	0.000979		ug/L		98	80 - 134	0	50
2,3,4,7,8-PeCDF			0.00100	0.000957		ug/L		96	68 - 160	3	50
1,2,3,4,7,8-HxCDD			0.00100	0.000963		ug/L		96	70 - 164	4	50
1,2,3,6,7,8-HxCDD			0.00100	0.00111		ug/L		111	76 - 134	3	50
1,2,3,7,8,9-HxCDD			0.00100	0.00100		ug/L		100	64 - 162	0	50
1,2,3,4,7,8-HxCDF			0.00100	0.00106		ug/L		106	72 - 134	1	50
1,2,3,6,7,8-HxCDF			0.00100	0.00107		ug/L		107	84 - 130	2	50
1,2,3,7,8,9-HxCDF			0.00100	0.00107		ug/L		107	78 - 130	3	50
2,3,4,6,7,8-HxCDF			0.00100	0.00106		ug/L		106	70 - 156	2	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000999		ug/L		100	70 - 140	2	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00116		ug/L		116	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00103		ug/L		103	78 - 138	1	50
OCDD			0.00200	0.00226		ug/L		113	78 - 144	3	50
OCDF			0.00200	0.00219		ug/L		110	63 - 170	0	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	63		20 - 175
13C-2,3,7,8-TCDF	54		22 - 152
13C-1,2,3,7,8-PeCDD	83		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 192
13C-2,3,4,7,8-PeCDF	72		13 - 328
13C-1,2,3,4,7,8-HxCDD	82		21 - 193
13C-1,2,3,6,7,8-HxCDD	74		25 - 163
13C-1,2,3,4,7,8-HxCDF	77		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-635089/3-A
Matrix: Water
Analysis Batch: 636198

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 635089

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	76		21 - 159
13C-1,2,3,7,8,9-HxCDF	78		17 - 205
13C-2,3,4,6,7,8-HxCDF	81		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	88		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	74		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	87		20 - 186
13C-OCDD	81		13 - 199
13C-OCDF	87		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	81		31 - 191

Lab Sample ID: MB 320-635627/1-A
Matrix: Water
Analysis Batch: 636227

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 635627

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000056	ug/L		11/28/22 08:43	11/30/22 23:53	1
2,3,7,8-TCDF	ND		0.000010	0.00000017	ug/L		11/28/22 08:43	11/30/22 23:53	1
1,2,3,7,8-PeCDD	0.00000113	J,DX q	0.000050	0.00000039	ug/L		11/28/22 08:43	11/30/22 23:53	1
1,2,3,7,8-PeCDF	0.00000261	J,DX	0.000050	0.00000024	ug/L		11/28/22 08:43	11/30/22 23:53	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000026	ug/L		11/28/22 08:43	11/30/22 23:53	1
1,2,3,4,7,8-HxCDD	0.00000243	J,DX q	0.000050	0.00000018	ug/L		11/28/22 08:43	11/30/22 23:53	1
1,2,3,6,7,8-HxCDD	0.00000178	J,DX q	0.000050	0.00000020	ug/L		11/28/22 08:43	11/30/22 23:53	1
1,2,3,7,8,9-HxCDD	0.00000210	J,DX q	0.000050	0.00000017	ug/L		11/28/22 08:43	11/30/22 23:53	1
1,2,3,4,7,8-HxCDF	0.00000166	J,DX	0.000050	0.00000022	ug/L		11/28/22 08:43	11/30/22 23:53	1
1,2,3,6,7,8-HxCDF	0.00000127	J,DX	0.000050	0.00000022	ug/L		11/28/22 08:43	11/30/22 23:53	1
1,2,3,7,8,9-HxCDF	0.00000443	J,DX	0.000050	0.00000028	ug/L		11/28/22 08:43	11/30/22 23:53	1
2,3,4,6,7,8-HxCDF	0.00000158	J,DX	0.000050	0.00000023	ug/L		11/28/22 08:43	11/30/22 23:53	1
1,2,3,4,6,7,8-HpCDD	0.00000503	J,DX	0.000050	0.00000021	ug/L		11/28/22 08:43	11/30/22 23:53	1
1,2,3,4,6,7,8-HpCDF	0.00000378	J,DX q	0.000050	0.00000027	ug/L		11/28/22 08:43	11/30/22 23:53	1
1,2,3,4,7,8,9-HpCDF	0.00000332	J,DX	0.000050	0.00000031	ug/L		11/28/22 08:43	11/30/22 23:53	1
OCDD	0.0000167	J,DX	0.00010	0.00000028	ug/L		11/28/22 08:43	11/30/22 23:53	1
OCDF	0.00000605	J,DX	0.00010	0.00000074	ug/L		11/28/22 08:43	11/30/22 23:53	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-635627/1-A
Matrix: Water
Analysis Batch: 636227

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 635627

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDD	ND		0.000010	0.00000056	ug/L		11/28/22 08:43	11/30/22 23:53	1
Total TCDF	ND		0.000010	0.00000023	ug/L		11/28/22 08:43	11/30/22 23:53	1
Total PeCDD	0.00000113	J,DX q	0.000050	0.00000039	ug/L		11/28/22 08:43	11/30/22 23:53	1
Total PeCDF	0.00000261	J,DX	0.000050	0.00000025	ug/L		11/28/22 08:43	11/30/22 23:53	1
Total HxCDD	0.00000631	J,DX q	0.000050	0.00000018	ug/L		11/28/22 08:43	11/30/22 23:53	1
Total HxCDF	0.00000893	J,DX	0.000050	0.00000023	ug/L		11/28/22 08:43	11/30/22 23:53	1
Total HpCDD	0.00000840	J,DX q	0.000050	0.00000021	ug/L		11/28/22 08:43	11/30/22 23:53	1
Total HpCDF	0.00000710	J,DX q	0.000050	0.00000029	ug/L		11/28/22 08:43	11/30/22 23:53	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*57*		*25 - 164*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-2,3,7,8-TCDF	*47*		*24 - 169*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-1,2,3,7,8-PeCDD	*64*		*25 - 181*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-1,2,3,7,8-PeCDF	*59*		*24 - 185*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-2,3,4,7,8-PeCDF	*60*		*21 - 178*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-1,2,3,4,7,8-HxCDD	*65*		*32 - 141*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-1,2,3,6,7,8-HxCDD	*59*		*28 - 130*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-1,2,3,4,7,8-HxCDF	*64*		*26 - 152*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-1,2,3,6,7,8-HxCDF	*63*		*26 - 123*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-1,2,3,7,8,9-HxCDF	*60*		*29 - 147*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-2,3,4,6,7,8-HxCDF	*66*		*28 - 136*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*63*		*23 - 140*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*55*		*28 - 143*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*61*		*26 - 138*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-OCDD	*45*		*17 - 157*	*11/28/22 08:43*	*11/30/22 23:53*	*1*
13C-OCDF	*50*		*17 - 157*	*11/28/22 08:43*	*11/30/22 23:53*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*74*		*35 - 197*	*11/28/22 08:43*	*11/30/22 23:53*	*1*

Lab Sample ID: LCS 320-635627/2-A
Matrix: Water
Analysis Batch: 636227

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 635627

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000202		ug/L		101	67 - 158
2,3,7,8-TCDF	0.000200	0.000239		ug/L		120	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.00101		ug/L		101	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000951		ug/L		95	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000951		ug/L		95	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000978		ug/L		98	70 - 164

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-635627/2-A
Matrix: Water
Analysis Batch: 636227

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 635627

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3,6,7,8-HxCDD			0.00100	0.00112		ug/L		112	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000965		ug/L		96	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.00103		ug/L		103	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.00104		ug/L		104	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.00107		ug/L		107	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00108		ug/L		108	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000993		ug/L		99	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00114		ug/L		114	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000980		ug/L		98	78 - 138		
OCDD			0.00200	0.00228		ug/L		114	78 - 144		
OCDF			0.00200	0.00219		ug/L		110	63 - 170		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*54*		*20 - 175*
13C-2,3,7,8-TCDF	*46*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*59*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*55*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*55*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*58*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*56*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*56*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*58*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*53*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*61*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*54*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*48*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*55*		*20 - 186*
13C-OCDD	*40*		*13 - 199*
13C-OCDF	*45*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*75*		*31 - 191*

Lab Sample ID: LCSD 320-635627/3-A
Matrix: Water
Analysis Batch: 636227

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 635627

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000214		ug/L		107	67 - 158	6	50
2,3,7,8-TCDF			0.000200	0.000244		ug/L		122	75 - 158	2	50
1,2,3,7,8-PeCDD			0.00100	0.000985		ug/L		98	70 - 142	3	50
1,2,3,7,8-PeCDF			0.00100	0.000977		ug/L		98	80 - 134	3	50
2,3,4,7,8-PeCDF			0.00100	0.000935		ug/L		93	68 - 160	2	50
1,2,3,4,7,8-HxCDD			0.00100	0.000930		ug/L		93	70 - 164	5	50
1,2,3,6,7,8-HxCDD			0.00100	0.00115		ug/L		115	76 - 134	3	50
1,2,3,7,8,9-HxCDD			0.00100	0.00109		ug/L		109	64 - 162	12	50
1,2,3,4,7,8-HxCDF			0.00100	0.00104		ug/L		104	72 - 134	1	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-635627/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 636227
Prep Batch: 635627

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3,6,7,8-HxCDF			0.00100	0.00103		ug/L		103	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00107		ug/L		107	78 - 130	0	50
2,3,4,6,7,8-HxCDF			0.00100	0.00105		ug/L		105	70 - 156	3	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000996		ug/L		100	70 - 140	0	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00116		ug/L		116	82 - 122	3	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00102		ug/L		102	78 - 138	4	50
OCDD			0.00200	0.00225		ug/L		113	78 - 144	1	50
OCDF			0.00200	0.00221		ug/L		110	63 - 170	1	50

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*58*		*20 - 175*
13C-2,3,7,8-TCDF	*50*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*69*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*61*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*58*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*62*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*58*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*58*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*60*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*63*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*68*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*64*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*53*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*62*		*20 - 186*
13C-OCDD	*48*		*13 - 199*
13C-OCDF	*51*		*13 - 199*

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*75*		*31 - 191*

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-410140/25
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 410140

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			11/15/22 14:35	1

Lab Sample ID: MB 580-410140/26
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 410140

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			11/15/22 14:39	1

Method: 1631E - Mercury, Low Level (CVAFS) (Continued)

Lab Sample ID: MB 580-410140/27
Matrix: Water
Analysis Batch: 410140

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			11/15/22 14:43	1

Lab Sample ID: LCS 580-410140/32
Matrix: Water
Analysis Batch: 410140

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00500		ug/L		100	77 - 123		

Lab Sample ID: LCSD 580-410140/35
Matrix: Water
Analysis Batch: 410140

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00493		ug/L		99	77 - 123	1	24

Lab Sample ID: 570-116159-D-1 MS
Matrix: Water
Analysis Batch: 410140

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.019		0.0300	0.0497		ug/L		102	71 - 125		

Lab Sample ID: 570-116159-D-1 MSD
Matrix: Water
Analysis Batch: 410140

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.019		0.0300	0.0495		ug/L		102	71 - 125	1	24

Lab Sample ID: 580-119898-A-6 MS
Matrix: Water
Analysis Batch: 410140

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00014	J,DX	0.00500	0.00511		ug/L		99	71 - 125		

Lab Sample ID: 580-119898-A-6 MSD
Matrix: Water
Analysis Batch: 410140

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00014	J,DX	0.00500	0.00502		ug/L		97	71 - 125	2	24

Method: 1631E - Mercury, Low Level (CVAFS) (Continued)

Lab Sample ID: MB 580-410319/16
Matrix: Water
Analysis Batch: 410319
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000899	J,DX	0.00050	0.000079	ug/L			11/16/22 14:13	1

Lab Sample ID: MB 580-410319/17
Matrix: Water
Analysis Batch: 410319
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			11/16/22 14:17	1

Lab Sample ID: MB 580-410319/18
Matrix: Water
Analysis Batch: 410319
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			11/16/22 14:21	1

Lab Sample ID: MB 580-410319/19
Matrix: Water
Analysis Batch: 410319
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			11/16/22 14:25	1

Lab Sample ID: MB 580-410319/20
Matrix: Water
Analysis Batch: 410319
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			11/16/22 14:30	1

Lab Sample ID: MB 580-410319/23
Matrix: Water
Analysis Batch: 410319
Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000867	J,DX	0.00050	0.000079	ug/L			11/16/22 14:42	1

Lab Sample ID: LCS 580-410319/24
Matrix: Water
Analysis Batch: 410319
Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00478		ug/L		96	77 - 123

Method: 1631E - Mercury, Low Level (CVAFS) (Continued)

Lab Sample ID: LCS 580-410319/26
Matrix: Water
Analysis Batch: 410319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00486		ug/L		97	77 - 123		

Lab Sample ID: LCSD 580-410319/25
Matrix: Water
Analysis Batch: 410319

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00479		ug/L		96	77 - 123	0	24

Lab Sample ID: LCSD 580-410319/27
Matrix: Water
Analysis Batch: 410319

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00479		ug/L		96	77 - 123	1	24

Lab Sample ID: 570-116265-3 MS
Matrix: Water
Analysis Batch: 410319

Client Sample ID: B1BMP011_20221108
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.0059	MB	0.0100	0.0142		ug/L		83	71 - 125		

Lab Sample ID: 570-116265-3 MSD
Matrix: Water
Analysis Batch: 410319

Client Sample ID: B1BMP011_20221108
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0059	MB	0.0100	0.0141		ug/L		83	71 - 125	0	24

Lab Sample ID: 570-116265-11 MS
Matrix: Water
Analysis Batch: 410319

Client Sample ID: EPSW001IE01_20221108
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.037	MB	0.0500	0.0768		ug/L		80	71 - 125		

Lab Sample ID: 570-116265-11 MSD
Matrix: Water
Analysis Batch: 410319

Client Sample ID: EPSW001IE01_20221108
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.037	MB	0.0500	0.0759		ug/L		79	71 - 125	1	24

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Method: 1631E - Mercury, Low Level (CVAFS) (Continued)

Lab Sample ID: 570-116299-F-1 MS
Matrix: Water
Analysis Batch: 410319

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.013	MB	0.0150	0.0251		ug/L		81	71 - 125

Lab Sample ID: 570-116299-F-1 MSD
Matrix: Water
Analysis Batch: 410319

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.013	MB	0.0150	0.0250		ug/L		81	71 - 125	0	24

Lab Sample ID: 580-120034-A-1 MS
Matrix: Water
Analysis Batch: 410319

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.020	MB	0.0300	0.0478		ug/L		93	71 - 125

Lab Sample ID: 580-120034-A-1 MSD
Matrix: Water
Analysis Batch: 410319

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.020	MB	0.0300	0.0474		ug/L		92	71 - 125	1	24

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Specialty Organics

Prep Batch: 635089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-1	B1BMP009_20221108	Total/NA	Water	1613B	
570-116265-2	B1BMP010_20221108	Total/NA	Water	1613B	
570-116265-3	B1BMP011_20221108	Total/NA	Water	1613B	
570-116265-4	ILBMP0004_20221108	Total/NA	Water	1613B	
570-116265-5	ILBMP0005_20221108	Total/NA	Water	1613B	
570-116265-6 - RA	ILBMP0008_20221108	Total/NA	Water	1613B	
570-116265-6	ILBMP0008_20221108	Total/NA	Water	1613B	
570-116265-7	LPBMP0002_20221108	Total/NA	Water	1613B	
MB 320-635089/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-635089/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-635089/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Prep Batch: 635627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-8	LPBMP0003_20221108	Total/NA	Water	1613B	
570-116265-9	LPBMP0004_20221108	Total/NA	Water	1613B	
570-116265-10	LPBMP0002_DUP_20221108	Total/NA	Water	1613B	
570-116265-11	EPSW001IE01_20221108	Total/NA	Water	1613B	
MB 320-635627/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-635627/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-635627/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 636198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-1	B1BMP009_20221108	Total/NA	Water	1613B	635089
570-116265-2	B1BMP010_20221108	Total/NA	Water	1613B	635089
570-116265-3	B1BMP011_20221108	Total/NA	Water	1613B	635089
570-116265-4	ILBMP0004_20221108	Total/NA	Water	1613B	635089
570-116265-5	ILBMP0005_20221108	Total/NA	Water	1613B	635089
570-116265-6	ILBMP0008_20221108	Total/NA	Water	1613B	635089
570-116265-7	LPBMP0002_20221108	Total/NA	Water	1613B	635089
MB 320-635089/1-A	Method Blank	Total/NA	Water	1613B	635089
LCS 320-635089/2-A	Lab Control Sample	Total/NA	Water	1613B	635089
LCSD 320-635089/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	635089

Analysis Batch: 636227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-8	LPBMP0003_20221108	Total/NA	Water	1613B	635627
570-116265-9	LPBMP0004_20221108	Total/NA	Water	1613B	635627
570-116265-10	LPBMP0002_DUP_20221108	Total/NA	Water	1613B	635627
570-116265-11	EPSW001IE01_20221108	Total/NA	Water	1613B	635627
MB 320-635627/1-A	Method Blank	Total/NA	Water	1613B	635627
LCS 320-635627/2-A	Lab Control Sample	Total/NA	Water	1613B	635627
LCSD 320-635627/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	635627

Analysis Batch: 637512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-6 - RA	ILBMP0008_20221108	Total/NA	Water	1613B	635089

Metals

Filtration Batch: 409556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-1	B1BMP009_20221108	Dissolved	Water	Filtration	
570-116265-2	B1BMP010_20221108	Dissolved	Water	Filtration	
570-116265-3	B1BMP011_20221108	Dissolved	Water	Filtration	
570-116265-4	ILBMP0004_20221108	Dissolved	Water	Filtration	
570-116265-5	ILBMP0005_20221108	Dissolved	Water	Filtration	
570-116265-6	ILBMP0008_20221108	Dissolved	Water	Filtration	
570-116265-7	LPBMP0002_20221108	Dissolved	Water	Filtration	
570-116265-8	LPBMP0003_20221108	Dissolved	Water	Filtration	
570-116265-9	LPBMP0004_20221108	Dissolved	Water	Filtration	
570-116265-10	LPBMP0002_DUP_20221108	Dissolved	Water	Filtration	
570-116265-11	EPSW001IE01_20221108	Dissolved	Water	Filtration	

Analysis Batch: 410140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-1	B1BMP009_20221108	Dissolved	Water	1631E	409556
570-116265-1	B1BMP009_20221108	Total/NA	Water	1631E	
570-116265-2	B1BMP010_20221108	Dissolved	Water	1631E	409556
570-116265-2	B1BMP010_20221108	Total/NA	Water	1631E	
MB 580-410140/25	Method Blank	Total/NA	Water	1631E	
MB 580-410140/26	Method Blank	Total/NA	Water	1631E	
MB 580-410140/27	Method Blank	Total/NA	Water	1631E	
LCS 580-410140/32	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-410140/35	Lab Control Sample Dup	Total/NA	Water	1631E	
570-116159-D-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-116159-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-119898-A-6 MS	Matrix Spike	Total/NA	Water	1631E	
580-119898-A-6 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Analysis Batch: 410319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-3	B1BMP011_20221108	Dissolved	Water	1631E	409556
570-116265-3	B1BMP011_20221108	Total/NA	Water	1631E	
570-116265-4	ILBMP0004_20221108	Dissolved	Water	1631E	409556
570-116265-4	ILBMP0004_20221108	Total/NA	Water	1631E	
570-116265-5	ILBMP0005_20221108	Dissolved	Water	1631E	409556
570-116265-5	ILBMP0005_20221108	Total/NA	Water	1631E	
570-116265-6	ILBMP0008_20221108	Dissolved	Water	1631E	409556
570-116265-6	ILBMP0008_20221108	Total/NA	Water	1631E	
570-116265-7	LPBMP0002_20221108	Dissolved	Water	1631E	409556
570-116265-7	LPBMP0002_20221108	Total/NA	Water	1631E	
570-116265-8	LPBMP0003_20221108	Dissolved	Water	1631E	409556
570-116265-8	LPBMP0003_20221108	Total/NA	Water	1631E	
570-116265-9	LPBMP0004_20221108	Dissolved	Water	1631E	409556
570-116265-9	LPBMP0004_20221108	Total/NA	Water	1631E	
570-116265-10	LPBMP0002_DUP_20221108	Dissolved	Water	1631E	409556
570-116265-10	LPBMP0002_DUP_20221108	Total/NA	Water	1631E	
570-116265-11	EPSW001IE01_20221108	Dissolved	Water	1631E	409556
570-116265-11	EPSW001IE01_20221108	Total/NA	Water	1631E	
MB 580-410319/16	Method Blank	Total/NA	Water	1631E	
MB 580-410319/17	Method Blank	Total/NA	Water	1631E	

Metals (Continued)

Analysis Batch: 410319 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 580-410319/18	Method Blank	Total/NA	Water	1631E	
MB 580-410319/19	Method Blank	Total/NA	Water	1631E	
MB 580-410319/20	Method Blank	Total/NA	Water	1631E	
MB 580-410319/23	Method Blank	Total/NA	Water	1631E	
LCS 580-410319/24	Lab Control Sample	Total/NA	Water	1631E	
LCS 580-410319/26	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-410319/25	Lab Control Sample Dup	Total/NA	Water	1631E	
LCSD 580-410319/27	Lab Control Sample Dup	Total/NA	Water	1631E	
570-116265-3 MS	B1BMP011_20221108	Total/NA	Water	1631E	
570-116265-3 MSD	B1BMP011_20221108	Total/NA	Water	1631E	
570-116265-11 MS	EPSW001IE01_20221108	Total/NA	Water	1631E	
570-116265-11 MSD	EPSW001IE01_20221108	Total/NA	Water	1631E	
570-116299-F-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-116299-F-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-120034-A-1 MS	Matrix Spike	Total/NA	Water	1631E	
580-120034-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: B1BMP009_20221108
Lab Sample ID: 570-116265-1
Date Collected: 11/08/22 06:00
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			971.8 mL	20.0 uL	635089	11/23/22 12:28	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	636198	11/30/22 15:36	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			250 mL	250 mL	409556	11/10/22 13:54	DRM	EET SEA
Dissolved	Analysis	1631E		1			410140	11/15/22 20:17	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			410140	11/15/22 20:04	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: B1BMP010_20221108
Lab Sample ID: 570-116265-2
Date Collected: 11/08/22 06:05
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			983.7 mL	20.0 uL	635089	11/23/22 12:28	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	636198	11/30/22 16:24	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			250 mL	250 mL	409556	11/10/22 13:54	DRM	EET SEA
Dissolved	Analysis	1631E		1			410140	11/15/22 20:25	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			410140	11/15/22 20:21	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: B1BMP011_20221108
Lab Sample ID: 570-116265-3
Date Collected: 11/08/22 06:10
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			954.2 mL	20.0 uL	635089	11/23/22 12:28	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	636198	11/30/22 17:12	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			250 mL	250 mL	409556	11/10/22 13:54	DRM	EET SEA
Dissolved	Analysis	1631E		1			410319	11/16/22 16:43	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			410319	11/16/22 13:56	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: ILBMP0004_20221108
Lab Sample ID: 570-116265-4
Date Collected: 11/08/22 06:25
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			950.1 mL	20.0 uL	635089	11/23/22 12:28	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	636198	11/30/22 18:00	GRB	EET SAC
	Instrument ID: DFS 1									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: ILBMP0004_20221108
Lab Sample ID: 570-116265-4
Date Collected: 11/08/22 06:25
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	409556	11/10/22 13:54	DRM	EET SEA
Dissolved	Analysis	1631E		1			410319	11/16/22 16:51	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			410319	11/16/22 16:47	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: ILBMP0005_20221108
Lab Sample ID: 570-116265-5
Date Collected: 11/08/22 06:30
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			951.3 mL	20.0 uL	635089	11/23/22 12:28	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	636198	11/30/22 18:48	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			250 mL	250 mL	409556	11/10/22 13:54	DRM	EET SEA
Dissolved	Analysis	1631E		1			410319	11/16/22 17:00	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			410319	11/16/22 16:56	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: ILBMP0008_20221108
Lab Sample ID: 570-116265-6
Date Collected: 11/08/22 06:35
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		978.7 mL	20.0 uL	635089	11/23/22 12:28	CGB	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	637512	12/05/22 13:29	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			978.7 mL	20.0 uL	635089	11/23/22 12:28	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	636198	11/30/22 19:36	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			250 mL	250 mL	409556	11/10/22 13:54	DRM	EET SEA
Dissolved	Analysis	1631E		1			410319	11/16/22 17:16	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			410319	11/16/22 17:12	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: LPBMP0002_20221108
Lab Sample ID: 570-116265-7
Date Collected: 11/08/22 07:15
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			669.1 mL	20.0 uL	635089	11/23/22 12:28	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	636198	11/30/22 20:23	GRB	EET SAC
	Instrument ID: DFS 1									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: LPBMP0002_20221108
Lab Sample ID: 570-116265-7
Date Collected: 11/08/22 07:15
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	409556	11/10/22 13:54	DRM	EET SEA
Dissolved	Analysis	1631E		1			410319	11/16/22 17:25	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			410319	11/16/22 17:21	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: LPBMP0003_20221108
Lab Sample ID: 570-116265-8
Date Collected: 11/08/22 07:10
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			956.3 mL	20.0 uL	635627	11/28/22 08:43	CB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	636227	12/01/22 06:16	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			250 mL	250 mL	409556	11/10/22 13:54	DRM	EET SEA
Dissolved	Analysis	1631E		1			410319	11/16/22 17:33	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			410319	11/16/22 17:29	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: LPBMP0004_20221108
Lab Sample ID: 570-116265-9
Date Collected: 11/08/22 07:00
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			965.5 mL	20.0 uL	635627	11/28/22 08:43	CB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	636227	12/01/22 07:03	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			250 mL	250 mL	409556	11/10/22 13:54	DRM	EET SEA
Dissolved	Analysis	1631E		1			410319	11/16/22 17:41	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			410319	11/16/22 17:37	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: LPBMP0002_DUP_20221108
Lab Sample ID: 570-116265-10
Date Collected: 11/08/22 07:15
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1027 mL	20.0 uL	635627	11/28/22 08:43	CB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	636227	12/01/22 07:51	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			250 mL	250 mL	409556	11/10/22 13:54	DRM	EET SEA
Dissolved	Analysis	1631E		1			410319	11/16/22 17:50	COW	EET SEA
	Instrument ID: 2600-3									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: LPBMP0002_DUP_20221108
Lab Sample ID: 570-116265-10
Date Collected: 11/08/22 07:15
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1631E		1			410319	11/16/22 17:46	COW	EET SEA

Client Sample ID: EPSW001IE01_20221108
Lab Sample ID: 570-116265-11
Date Collected: 11/08/22 07:00
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			953.4 mL	20.0 uL	635627	11/28/22 08:43	CB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	636227	12/01/22 08:39	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			250 mL	250 mL	409556	11/10/22 13:54	DRM	EET SEA
Dissolved	Analysis	1631E		1			410319	11/16/22 18:15	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		5			410319	11/16/22 14:09	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-31-23
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-30-23
Hawaii	State	<cert No.>	01-29-23
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-23
Oregon	NELAP	4040	01-29-23
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	01-23-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-13-22
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Laboratory: Eurofins Seattle (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	P330-20-00031	12-31-22
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-2
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-116265-1	B1BMP009_20221108	Water	11/08/22 06:00	11/08/22 16:20
570-116265-2	B1BMP010_20221108	Water	11/08/22 06:05	11/08/22 16:20
570-116265-3	B1BMP011_20221108	Water	11/08/22 06:10	11/08/22 16:20
570-116265-4	ILBMP0004_20221108	Water	11/08/22 06:25	11/08/22 16:20
570-116265-5	ILBMP0005_20221108	Water	11/08/22 06:30	11/08/22 16:20
570-116265-6	ILBMP0008_20221108	Water	11/08/22 06:35	11/08/22 16:20
570-116265-7	LPBMP0002_20221108	Water	11/08/22 07:15	11/08/22 16:20
570-116265-8	LPBMP0003_20221108	Water	11/08/22 07:10	11/08/22 16:20
570-116265-9	LPBMP0004_20221108	Water	11/08/22 07:00	11/08/22 16:20
570-116265-10	LPBMP0002_DUP_20221108	Water	11/08/22 07:15	11/08/22 16:20
570-116265-11	EPSW001IE01_20221108	Water	11/08/22 07:00	11/08/22 16:20

116265

Chain of Custody Record for
Chain of Custody Record

eurofins

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phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under this Cal be performed in accordance with the T&Cs with Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☐ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS/MSD (Y/N)	Method 200.8: Cd, Cu, Pb (Total Recoverable)	Method 200.8: Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250ml Amber	2-1L Amber	1-1L Poly	1 1L Poly
B1BMP0009_20221108	11/8/2022	600	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_20221108	11/8/2022	0605	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_20221108	11/8/2022	0610	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0004_20221108	11/8/2022	0625	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005_20221108	11/8/2022	0630	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008_20221108	11/8/2022	0635	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_20221108	11/8/2022	0715	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_20221108	11/8/2022	0710	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_20221108	11/8/2022	0700	G	WM	8	Y	Y	X	X	X	X	X	X	X
LPBMP0002_DUP_20221108	11/8/2022	0715	G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								4	4	2	1	1	1	1

570-116265 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	[illegible]	11/8/22 1315	[signature] EC	11/8/22 1315
[signature] EC	EC	11/8/22 1620		
			Received in Laboratory by:	

2.4/2.2 3.5/3.3 3.3/3.1 3.9/3.7 2.8/2.6 3.9/3.7 1.9/1.7 SC12

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

12/7/2022

116265

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other

TestAmerica Services under the Col[illegible]e performed in [illegible]rdan[illegible] with the T&C[illegible]thin Blank Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, its subsidiaries and affiliat[illegible] and TestAmer[illegible] laboratori[illegible]

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	▪ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No.
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trifium (E906.0)				Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250ml Amber	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20221108	11/8/22	0700	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH, 6= Other _____								1	1	1	1	1	4	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments: **ECI #44009815**

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No._____	
Relinquished by:	Company: JHA	Date/Time: 11/7/22 1315	Received by: EC	Date/Time: 11/8/22 1315
Relinquished by:	Company: EC	Date/Time: 11/8/22 1620	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2-4/2.7 3.5/3.3 3.3/3.1 3.9/3.7 2.8/2.6 3.9/3.7 1.9/1.7 SC12

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

12/7/2022

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-196009.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-116265-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 11/28/2022			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: BMP Performance-001,002,009 and/or 011 Watersheds	Project #: 44009815			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
B1BMP009_20221108 (570-116265-1)	11/8/22	06:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
B1BMP010_20221108 (570-116265-2)	11/8/22	06:05 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
B1BMP011_20221108 (570-116265-3)	11/8/22	06:10 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
ILBMP004_20221108 (570-116265-4)	11/8/22	06:25 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
ILBMP005_20221108 (570-116265-5)	11/8/22	06:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
ILBMP008_20221108 (570-116265-6)	11/8/22	06:35 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
LPBMP0002_20221108 (570-116265-7)	11/8/22	07:15 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
LPBMP0003_20221108 (570-116265-8)	11/8/22	07:10 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
LPBMP0004_20221108 (570-116265-9)	11/8/22	07:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 11/9/22 1328	Company	Received by:	Date/Time: 11.10.22 930	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 0.6c

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-196009.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-116265-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 11/28/2022			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: BMP Performance-001,002,009 and/or 011 Watersheds	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
LPBMP0002_DUP_20221108 (570-116265-10)	11/8/22	07:15 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPSW001IE01_20221108 (570-116265-11)	11/8/22	07:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Calscience.

Possible Hazard Identification Unconfirmed	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 11/9/22 1328	Company	Received by:	Date/Time: 11.10.22 630	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 0.6

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-116265-2

Login Number: 116265
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Did not receive all required containers.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-116265-2

Login Number: 116265
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 11/10/22 01:17 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.6c 0.4c 0.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-116265-2

Login Number: 116265
List Number: 3
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 11/10/22 01:49 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 12/14/2022 4:16:45 PM

JOB DESCRIPTION

BMP Performance-001,002,009 and/or 011 Watersheds

JOB NUMBER

570-116265-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

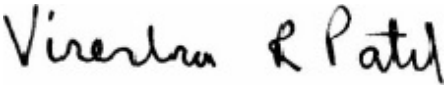
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-3
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-116265-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-116265-3

Comments
No additional comments.

Receipt
The samples were received on 11/8/2022 4:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 7 coolers at receipt time were 1.7º C, 2.2º C, 2.6º C, 3.1º C, 3.3º C, 3.7º C and 3.7º C.

RAD
Methods 900.0, 9310: Gross Alpha and Gross Beta batch 592268
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: (680-225093-L-2-A) and (680-225093-L-2-D DU). Analytical results are reported with the detection limit achieved.

Methods 900.0, 9310: Gross Alpha and Gross Beta batch 592268
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date
EPSW001IE01_20221108 (570-116265-11), (LCS 160-592268/2-A), (MB 160-592268/1-A), (680-225093-L-2-A), (680-225093-L-2-D DU) and (680-225093-L-2-B MS)

Method 901.1: Gamma Prep Batch 160-590201
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_20221108 (570-116265-11) and (570-116265-L-11-F DU)

Job ID: 570-116265-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 901.1: Gamma Prep Batch 160-591195
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_20221108 (570-116265-11) and (570-116265-L-11-H DU)

Method 906.0: Tritium Prep batch 160-590202:
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPSW001IE01_20221108 (570-116265-11), (LCS 160-590202/2-A), (MB 160-590202/1-A), (380-27051-A-1-A), (380-27051-A-1-B MS), (160-47790-C-1-A) and (160-47790-C-1-B DU)

Method A-01-R: Isotopic Uranium Batch 591668:
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20221108 (570-116265-11), (LCS 160-591668/2-A), (MB 160-591668/1-A), (160-48062-A-1-A) and (160-48062-A-1-B DU)

Method Evaporation:

Method ExtChrom: Uranium Prep Batch 160-591668:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPSW001IE01_20221108 (570-116265-11).

Job ID: 570-116265-3 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method LSC_Dist_Susp:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-3
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: EPSW001IE01_20221108
Lab Sample ID: 570-116265-11

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-3

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**6.29**		1.69	1.84	3.00	1.69	pCi/L	12/05/22 11:19	12/07/22 18:50	1
Gross Beta	0.749	U	0.634	0.638	4.00	0.873	pCi/L	12/05/22 11:19	12/07/22 18:50	1

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-3

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	3.81		1.27	1.35	3.00	1.46	pCi/L	12/05/22 11:19	12/07/22 20:48	1
Gross Beta	1.01		0.632	0.640	4.00	0.900	pCi/L	12/05/22 11:19	12/07/22 20:48	1

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-3

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.848	U	8.38	8.38	20.0	10.3	pCi/L	11/15/22 14:59	12/09/22 21:09	1
Potassium-40	-32.9	U	94.3	94.4		124	pCi/L	11/15/22 14:59	12/09/22 21:09	1

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-3

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-3.83	U	8.63	8.65	20.0	10.4	pCi/L	11/23/22 15:06	12/12/22 11:12	1
Potassium-40	-2.33	U	85.5	85.5		113	pCi/L	11/23/22 15:06	12/12/22 11:12	1

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-3

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-63.5	U	175	175	500	325	pCi/L	11/15/22 15:02	11/19/22 01:57	1

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-3

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	1.11		0.677	0.681	1.00	0.628	pCi/L	11/30/22 11:19	12/09/22 23:26	1

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-3

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPSW001IE01_20221108
Date Collected: 11/08/22 07:00
Date Received: 11/08/22 16:20

Lab Sample ID: 570-116265-11
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.635		0.362	0.364	1.00	0.340	pCi/L	11/30/22 11:19	12/09/22 23:26	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-3
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	U-232 (30-110)							
160-48062-A-1-B DU	Duplicate	79.9							
LCS 160-591668/2-A	Lab Control Sample	76.9							
MB 160-591668/1-A	Method Blank	86.9							

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-592268/1-A
Matrix: Water
Analysis Batch: 592656

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 592268

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.2708	U	0.561	0.562	3.00	0.991	pCi/L	12/05/22 11:19	12/07/22 18:13	1

Lab Sample ID: LCS 160-592268/2-A
Matrix: Water
Analysis Batch: 592656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 592268

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.29		7.65	3.00	2.53	pCi/L	102	75 - 125

Lab Sample ID: 680-225093-L-2-B MS
Matrix: Water
Analysis Batch: 592659

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 592268

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	6.08	U G	124	113.7		16.9	3.00	4.20	pCi/L	87	60 - 140

Lab Sample ID: 680-225093-L-2-D DU
Matrix: Water
Analysis Batch: 592658

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 592268

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	6.08	U G	4.716	U G	4.78	3.00	7.64	pCi/L	0.15	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-590201/1-A
Matrix: Water
Analysis Batch: 592964

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 590201

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.7253	U	8.41	8.41	20.0	10.4	pCi/L	11/15/22 14:56	12/09/22 21:09	1
Potassium-40	-30.35	U	97.2	97.3		125	pCi/L	11/15/22 14:56	12/09/22 21:09	1

Lab Sample ID: LCS 160-590201/2-A
Matrix: Water
Analysis Batch: 592962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 590201

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	145300		17300		288	pCi/L	107	75 - 125
Cesium-137	41100	41850		4980	20.0	71.3	pCi/L	102	75 - 125
Cobalt-60	18500	19120		2280		38.5	pCi/L	103	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: 570-116265-11 DU
Matrix: Water
Analysis Batch: 593146

Client Sample ID: EPSW001IE01_20221108
Prep Type: Total/NA
Prep Batch: 590201

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-0.848	U	-2.487	U	8.12	20.0	9.89	pCi/L	0.1	1
Potassium-40	-32.9	U	-42.65	U	109		136	pCi/L	0.05	1

Lab Sample ID: MB 160-591195/1-A
Matrix: Water
Analysis Batch: 593146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 591195

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.4144	U	5.95	5.95	20.0	7.58	pCi/L	11/23/22 15:06	12/12/22 14:10	1
Potassium-40	-47.26	U	109	109		136	pCi/L	11/23/22 15:06	12/12/22 14:10	1

Lab Sample ID: LCS 160-591195/2-A
Matrix: Water
Analysis Batch: 593148

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 591195

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	143600		17100		306	pCi/L	106	75 - 125
Cesium-137	41100	42810		5100	20.0	79.9	pCi/L	104	75 - 125
Cobalt-60	18500	19350		2310		50.2	pCi/L	105	75 - 125

Lab Sample ID: 570-116265-11 DU
Matrix: Water
Analysis Batch: 593150

Client Sample ID: EPSW001IE01_20221108
Prep Type: Dissolved
Prep Batch: 591195

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-3.83	U	-2.544	U	8.50	20.0	10.3	pCi/L	0.08	1
Potassium-40	-2.33	U	73.21	U	81.8		105	pCi/L	0.45	1

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-590202/1-A
Matrix: Water
Analysis Batch: 590775

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 590202

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	26.58	U	184	184	500	325	pCi/L	11/15/22 15:02	11/18/22 18:24	1

Lab Sample ID: LCS 160-590202/2-A
Matrix: Water
Analysis Batch: 590775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 590202

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2140	1815		360	500	328	pCi/L	85	75 - 125

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: 380-27051-A-1-B MS
Matrix: Water
Analysis Batch: 590775

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 590202

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	71.6	U	2140	2040		380	500	328	pCi/L	92	60 - 140		

Lab Sample ID: 160-47790-C-1-B DU
Matrix: Water
Analysis Batch: 590775

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 590202

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	1900			1846		362	500	328	pCi/L			0.07	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-591668/1-A
Matrix: Water
Analysis Batch: 592893

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 591668

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1479	U	0.139	0.140	1.00	0.160	pCi/L	11/30/22 11:19	12/09/22 23:26	1
Total Uranium	0.1479	U	0.139	0.140	1.00	0.160	pCi/L	11/30/22 11:19	12/09/22 23:26	1

Lab Sample ID: LCS 160-591668/2-A
Matrix: Water
Analysis Batch: 592942

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 591668

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.95		1.54	1.00	0.141	pCi/L	102	75 - 125		
Uranium-238			13.0	12.86		1.53	1.00	0.131	pCi/L	99	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*76.9*		*30 - 110*

Lab Sample ID: 160-48062-A-1-B DU
Matrix: Water
Analysis Batch: 592907

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 591668

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.229			0.1464	U	0.139	1.00	0.177	pCi/L			0.28	1
Total Uranium	0.229			0.1464	U	0.139	1.00	0.177	pCi/L			0.28	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-3

Rad

Filtration Batch: 590181

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Dissolved	Water	Filtration	
570-116265-11	EPSW001IE01_20221108	Dissolved	Water	Filtration	
570-116265-11 DU	EPSW001IE01_20221108	Dissolved	Water	Filtration	

Prep Batch: 590201

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Total/NA	Water	Fill_Geo-0	
MB 160-590201/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-590201/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-116265-11 DU	EPSW001IE01_20221108	Total/NA	Water	Fill_Geo-0	

Prep Batch: 590202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Total/NA	Water	LSC_Dist_Susp	
MB 160-590202/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-590202/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
380-27051-A-1-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
160-47790-C-1-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 591195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Dissolved	Water	Fill_Geo-0	590181
MB 160-591195/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-591195/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-116265-11 DU	EPSW001IE01_20221108	Dissolved	Water	Fill_Geo-0	590181

Prep Batch: 591668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Dissolved	Water	ExtChrom	590181
570-116265-11	EPSW001IE01_20221108	Total/NA	Water	ExtChrom	
MB 160-591668/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-591668/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
160-48062-A-1-B DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 592268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116265-11	EPSW001IE01_20221108	Dissolved	Water	Evaporation	590181
570-116265-11	EPSW001IE01_20221108	Total/NA	Water	Evaporation	
MB 160-592268/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-592268/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
680-225093-L-2-B MS	Matrix Spike	Total/NA	Water	Evaporation	
680-225093-L-2-D DU	Duplicate	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-3
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Client Sample ID: EPSW001IE01_20221108
Lab Sample ID: 570-116265-11
Date Collected: 11/08/22 07:00
Matrix: Water
Date Received: 11/08/22 16:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			4000 mL	4000 mL	590181	11/15/22 12:28	LAM	EET SL
Dissolved	Prep	Evaporation			200.01 mL	1.0 g	592268	12/05/22 11:19	ASG	EET SL
Dissolved	Analysis	900.0		1			592659	12/07/22 20:48	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	Evaporation			200.00 mL	1.0 g	592268	12/05/22 11:19	ASG	EET SL
Total/NA	Analysis	900.0		1			592657	12/07/22 18:50	CLP	EET SL
	Instrument ID: GFPCPURPLE									
Dissolved	Filtration	Filtration			4000 mL	4000 mL	590181	11/15/22 12:28	LAM	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	591195	11/23/22 15:06	LAM	EET SL
Dissolved	Analysis	901.1		1			593146	12/12/22 11:12	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	590201	11/15/22 14:59	LAM	EET SL
Total/NA	Analysis	901.1		1			592963	12/09/22 21:09	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	LSC_Dist_Susp			100.21 mL	1.0 g	590202	11/15/22 15:02	ZR	EET SL
Total/NA	Analysis	906.0		1			590775	11/19/22 01:57	REV	EET SL
	Instrument ID: LSC3180									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	590181	11/15/22 13:14	LAM	EET SL
Dissolved	Prep	ExtChrom			250.62 mL	1.0 mL	591668	11/30/22 11:19	MAL	EET SL
Dissolved	Analysis	A-01-R		1			592901	12/09/22 23:26	CLP	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			201.37 mL	1.0 mL	591668	11/30/22 11:19	MAL	EET SL
Total/NA	Analysis	A-01-R		1			592894	12/09/22 23:26	CLP	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-3
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-22
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-22
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
NRC	NRC	24-24817-01	12-31-22
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	12-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-116265-3
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: BMP Performance-001,002,009 and/or 011 Watersheds

Job ID: 570-116265-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-116265-11	EPSW001IE01_20221108	Water	11/08/22 07:00	11/08/22 16:20

116265

Chain of Custody Record for
Chain of Custody Record

eurofins

Eurofins Calscience, Inc.

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under this Cal be performed in accordance with the T&Cs with Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☐ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8: Cd, Cu, Pb (Total Recoverable)	Method 200.8: Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250ml Amber	2-1L Amber	1-1L Poly	1 1L Poly
B1BMP0009_20221108	11/8/2022	600	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_20221108	11/8/2022	0605	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_20221108	11/8/2022	0610	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0004_20221108	11/8/2022	0625	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005_20221108	11/8/2022	0630	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008_20221108	11/8/2022	0635	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_20221108	11/8/2022	0715	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_20221108	11/8/2022	0710	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_20221108	11/8/2022	0700	G	WM	8	Y	Y	X	X	X	X	X	X	X
LPBMP0002_DUP_20221108	11/8/2022	0715	G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								4	4	2	1	1	1	1

570-116265 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	[illegible]	11/8/22 1315	[signature] EC	11/8/22 1315
[signature] EC	EC	11/8/22 1620		
			Received in Laboratory by:	

2.4/2.2 3.5/3.3 3.3/3.1 3.9/3.7 2.8/2.6 3.9/3.7 1.9/1.7 SC12

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

12/14/2022

116265

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other

TestAmerica services under the Col ce performed in rdan with the T&C thin Blank Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, its subsidi es and affiliat anc TestAmer aboratori

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▪ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No.
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trifium (E906.0)				Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250ml Amber	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20221108	11/8/22	0700	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH, 6= Other ____								1	1	1	1	1	4	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments: **ECI #44009815**

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ▫ Yes | Custody Seal No. | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	JHA	11/7/22 1315	[signature] EC	11/8/22 1315
Relinquished by: [signature]	Company: EC	Date/Time: 11/8/22 1620	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2-4/2.7 3.5/3.3 3.3/3.1 3.9/3.7 2.8/2.6 3.9/3.7 1.9/1.7 SC12

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

12/14/2022

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-196000.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-116265-3
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/13/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: BMP Performance-001,002,009 and/or 011 Watersheds	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation_(MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
EPSW001IE01_20221108 (570-116265-11)	11/8/22	07:00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	FED EX	11/9/22 1256		FED EX		
2					NOV 10 2022 0850	FAST
3				Autumn R. Johnson		

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-116265-3

Login Number: 116265
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Did not receive all required containers.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-116265-3

Login Number: 116265
List Number: 4
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 11/10/22 07:34 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL - BMP Performance
SDG NUMBER 001, 002, 009 and/or 11 Watersheds

JOB NUMBER

570-120461-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

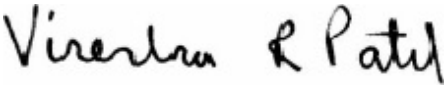
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-1
SDG: 001, 002, 009 and/or 11 Watersheds

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
EY	Result exceeds normal dynamic range; reported as a min. est.

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120461-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120461-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 12/24/2022. The report (revision 1) is being revised due to: The metals reporting was adjusted to report all elements by EPA 200.8..

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.1º C and 3.9º C.

HPLC/IC
Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-291037 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Sulfate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-289608 and analytical batch 570-289839 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The method blank for preparation batch 570-289608 and analytical batch 570-289839 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The method blank for preparation batch 570-289012 and analytical batch 570-289311 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPSW001IE01_20221211 (570-120461-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-1
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: EPSW001IE01_20221211 — Lab Sample ID: 570-120461-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1.6		1.0	0.24	mg/L	1		300.0	Total/NA
Arsenic	0.64	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Copper	1.8	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	1.0		1.0	0.12	ug/L	1		200.8	Total Recoverable
Iron	330	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Zinc	23		20	2.8	ug/L	1		200.8	Total Recoverable
Manganese	18		1.0	0.41	ug/L	1		200.8	Total Recoverable
Arsenic	0.45	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	1.5	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.23	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Iron	47	BU MB	20	3.7	ug/L	1		200.8	Dissolved
Zinc	18	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved
Manganese	2.2	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Total Suspended Solids	6.3		1.0	0.83	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.6		1.0	0.24	mg/L			12/21/22 22:11	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.64**	**J,DX**	1.0	0.16	ug/L		12/16/22 08:32	12/16/22 15:39	1
Cadmium	ND		1.0	0.13	ug/L		12/16/22 08:32	12/16/22 15:39	1
Copper	**1.8**	**J,DX**	2.0	0.32	ug/L		12/16/22 08:32	12/16/22 15:39	1
Lead	**1.0**		1.0	0.12	ug/L		12/16/22 08:32	12/16/22 15:39	1
Selenium	ND		2.0	0.52	ug/L		12/16/22 08:32	12/16/22 15:39	1
Iron	**330**	**MB**	20	3.7	ug/L		12/16/22 08:32	12/16/22 15:39	1
Zinc	**23**		20	2.8	ug/L		12/16/22 08:32	12/16/22 15:39	1
Manganese	**18**		1.0	0.41	ug/L		12/16/22 08:32	12/16/22 15:39	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.45**	**J,DX BU**	1.0	0.16	ug/L			12/15/22 09:40	1
Cadmium	ND	BU	1.0	0.13	ug/L			12/15/22 09:40	1
Copper	**1.5**	**J,DX BU**	2.0	0.32	ug/L			12/15/22 09:40	1
Lead	**0.23**	**J,DX BU**	1.0	0.12	ug/L			12/15/22 09:40	1
Selenium	ND	BU	2.0	0.52	ug/L			12/15/22 09:40	1
Iron	**47**	**BU MB**	20	3.7	ug/L			12/15/22 09:40	1
Zinc	**18**	**J,DX BU**	20	2.8	ug/L			12/15/22 09:40	1
Manganese	**2.2**	**BU**	1.0	0.41	ug/L			12/15/22 09:40	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-1
SDG: 001, 002, 009 and/or 11 Watersheds

General Chemistry

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	6.3		1.0	0.83	mg/L			12/15/22 16:52	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-291037/5
Matrix: Water
Analysis Batch: 291037

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			12/21/22 13:56	1

Lab Sample ID: LCS 570-291037/6
Matrix: Water
Analysis Batch: 291037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			50.0	49.7		mg/L		99	90 - 110		

Lab Sample ID: LCSD 570-291037/7
Matrix: Water
Analysis Batch: 291037

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate			50.0	49.9		mg/L		100	90 - 110	0	15

Lab Sample ID: 570-120404-B-1 MS
Matrix: Water
Analysis Batch: 291037

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate	45		50.0	100	EY	mg/L		111	80 - 120		

Lab Sample ID: 570-120404-B-1 MSD
Matrix: Water
Analysis Batch: 291037

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	45		50.0	101	EY	mg/L		112	80 - 120	0	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-289608/1-A
Matrix: Water
Analysis Batch: 289800

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L		12/16/22 08:32	12/16/22 14:32	1
Cadmium	ND		1.0	0.13	ug/L		12/16/22 08:32	12/16/22 14:32	1
Copper	ND		2.0	0.32	ug/L		12/16/22 08:32	12/16/22 14:32	1
Lead	ND		1.0	0.12	ug/L		12/16/22 08:32	12/16/22 14:32	1
Selenium	ND		2.0	0.52	ug/L		12/16/22 08:32	12/16/22 14:32	1
Iron	8.50	J,DX	20	3.7	ug/L		12/16/22 08:32	12/16/22 14:32	1
Zinc	ND		20	2.8	ug/L		12/16/22 08:32	12/16/22 14:32	1
Manganese	ND		1.0	0.41	ug/L		12/16/22 08:32	12/16/22 14:32	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-289608/2-A
Matrix: Water
Analysis Batch: 289800

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	85.3		ug/L		107	85 - 115
Cadmium	80.0	87.3		ug/L		109	85 - 115
Copper	80.0	89.4		ug/L		112	85 - 115
Lead	80.0	87.0		ug/L		109	85 - 115
Selenium	80.0	86.0		ug/L		107	85 - 115
Iron	800	903		ug/L		113	85 - 115
Zinc	80.0	85.6		ug/L		107	85 - 115
Manganese	80.0	88.3		ug/L		110	85 - 115

Lab Sample ID: LCSD 570-289608/3-A
Matrix: Water
Analysis Batch: 289800

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	80.0	85.3		ug/L		107	85 - 115	0	20
Cadmium	80.0	87.5		ug/L		109	85 - 115	0	20
Copper	80.0	88.8		ug/L		111	85 - 115	1	20
Lead	80.0	87.6		ug/L		109	85 - 115	1	20
Selenium	80.0	89.5		ug/L		112	85 - 115	4	20
Iron	800	896		ug/L		112	85 - 115	1	20
Zinc	80.0	87.3		ug/L		109	85 - 115	2	20
Manganese	80.0	87.1		ug/L		109	85 - 115	1	20

Lab Sample ID: 570-120461-1 MS
Matrix: Water
Analysis Batch: 289839

Client Sample ID: EPSW001IE01_20221211
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.64	J,DX	80.0	80.2		ug/L		99	80 - 120
Cadmium	ND		80.0	77.3		ug/L		97	80 - 120
Copper	1.8	J,DX	80.0	81.2		ug/L		99	80 - 120
Lead	1.0		80.0	78.6		ug/L		97	80 - 120
Selenium	ND		80.0	75.7		ug/L		95	80 - 120
Iron	330	MB	800	1100		ug/L		96	80 - 120
Zinc	23		80.0	101		ug/L		97	80 - 120
Manganese	18		80.0	95.3		ug/L		97	80 - 120

Lab Sample ID: 570-120461-1 MSD
Matrix: Water
Analysis Batch: 289839

Client Sample ID: EPSW001IE01_20221211
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.64	J,DX	80.0	83.8		ug/L		104	80 - 120	4	20
Cadmium	ND		80.0	81.4		ug/L		102	80 - 120	5	20
Copper	1.8	J,DX	80.0	84.3		ug/L		103	80 - 120	4	20
Lead	1.0		80.0	83.0		ug/L		102	80 - 120	5	20
Selenium	ND		80.0	82.3		ug/L		103	80 - 120	8	20
Iron	330	MB	800	1120		ug/L		100	80 - 120	2	20
Zinc	23		80.0	106		ug/L		103	80 - 120	5	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-120461-1 MSD
Matrix: Water
Analysis Batch: 289839

Client Sample ID: EPSW001IE01_20221211
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	18		80.0	98.0		ug/L		101	80 - 120	3	20

Lab Sample ID: MB 570-289012/1-A
Matrix: Water
Analysis Batch: 289311

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L			12/15/22 09:33	1
Cadmium	ND		1.0	0.13	ug/L			12/15/22 09:33	1
Copper	ND		2.0	0.32	ug/L			12/15/22 09:33	1
Lead	ND		1.0	0.12	ug/L			12/15/22 09:33	1
Selenium	ND		2.0	0.52	ug/L			12/15/22 09:33	1
Iron	6.20	J,DX	20	3.7	ug/L			12/15/22 09:33	1
Zinc	ND		20	2.8	ug/L			12/15/22 09:33	1
Manganese	ND		1.0	0.41	ug/L			12/15/22 09:33	1

Lab Sample ID: LCS 570-289012/2-A
Matrix: Water
Analysis Batch: 289311

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	72.7		ug/L		91	85 - 115
Cadmium	80.0	70.1		ug/L		88	85 - 115
Copper	80.0	70.5		ug/L		88	85 - 115
Lead	80.0	71.8		ug/L		90	85 - 115
Selenium	80.0	69.3		ug/L		87	85 - 115
Iron	800	722		ug/L		90	85 - 115
Zinc	80.0	70.9		ug/L		89	85 - 115
Manganese	80.0	71.3		ug/L		89	85 - 115

Lab Sample ID: LCSD 570-289012/3-A
Matrix: Water
Analysis Batch: 289311

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	80.0	72.4		ug/L		90	85 - 115	0	20
Cadmium	80.0	69.9		ug/L		87	85 - 115	0	20
Copper	80.0	71.8		ug/L		90	85 - 115	2	20
Lead	80.0	72.2		ug/L		90	85 - 115	0	20
Selenium	80.0	71.1		ug/L		89	85 - 115	3	20
Iron	800	729		ug/L		91	85 - 115	1	20
Zinc	80.0	72.3		ug/L		90	85 - 115	2	20
Manganese	80.0	72.0		ug/L		90	85 - 115	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-289412/1
Matrix: Water
Analysis Batch: 289412

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			12/15/22 16:52	1

Lab Sample ID: LCS 570-289412/2
Matrix: Water
Analysis Batch: 289412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	112		mg/L		112	77 - 116		

Lab Sample ID: LCSD 570-289412/3
Matrix: Water
Analysis Batch: 289412

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	113		mg/L		113	77 - 116	1	10

Lab Sample ID: 570-120290-F-2 DU
Matrix: Water
Analysis Batch: 289412

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	66			67.3		mg/L				1	10

HPLC/IC

Analysis Batch: 291037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Total/NA	Water	300.0	
MB 570-291037/5	Method Blank	Total/NA	Water	300.0	
LCS 570-291037/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-291037/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-120404-B-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-120404-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Filtration Batch: 289012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Dissolved	Water	Filtration	
MB 570-289012/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-289012/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-289012/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 289311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Dissolved	Water	200.8	289012
MB 570-289012/1-A	Method Blank	Dissolved	Water	200.8	289012
LCS 570-289012/2-A	Lab Control Sample	Dissolved	Water	200.8	289012
LCSD 570-289012/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	289012

Prep Batch: 289608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Total Recoverable	Water	200.8	
MB 570-289608/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-289608/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-289608/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-120461-1 MS	EPSW001IE01_20221211	Total Recoverable	Water	200.8	
570-120461-1 MSD	EPSW001IE01_20221211	Total Recoverable	Water	200.8	

Analysis Batch: 289800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-289608/1-A	Method Blank	Total Recoverable	Water	200.8	289608
LCS 570-289608/2-A	Lab Control Sample	Total Recoverable	Water	200.8	289608
LCSD 570-289608/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	289608

Analysis Batch: 289839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Total Recoverable	Water	200.8	289608
570-120461-1 MS	EPSW001IE01_20221211	Total Recoverable	Water	200.8	289608
570-120461-1 MSD	EPSW001IE01_20221211	Total Recoverable	Water	200.8	289608

General Chemistry

Analysis Batch: 289412

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Total/NA	Water	SM 2540D	
MB 570-289412/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-289412/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-289412/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 289412 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120290-F-2 DU	Duplicate	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-120461-1
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: EPSW001IE01_20221211
Lab Sample ID: 570-120461-1
Date Collected: 12/11/22 07:00
Matrix: Water
Date Received: 12/12/22 13:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	291037	12/21/22 22:11	PS	EET CAL 4
	Instrument ID: IC7									
Dissolved	Filtration	Filtration			50 mL	50 mL	289012	12/14/22 14:06	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			289311	12/15/22 09:40	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	289608	12/16/22 08:32	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			289839	12/16/22 15:39	C0YH	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	289412	12/15/22 16:52	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120461-1
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120461-1
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-1
SDG: 001, 002, 009 and/or 11 Watersheds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120461-1	EPSW001IE01_20221211	Water	12/11/22 07:00	12/12/22 13:10

120461

Every

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Dissolved)	Method 200.8 As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)			Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20221211	12/11/22	0700	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
A1BPSW0001_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
UP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	4	2	1	1			

570-120461 Chain of Custody

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com, Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by	Company: 3HA	Date/Time: 12/12/22 1310	Received by: EC		Date/Time: 12/12/22 1310
Relinquished by	Company: EC	Date/Time: 12/12/22 1710	Received by: EC		Date/Time: 12/12/22 17:10
Relinquished by	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

2-3/2-1 2-0/1.8 4.1/3.9 3-3/3.1 4.0/3.8 3.3/3.1 SC11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Page 21 of 29

2/2/2023 (Rev. 1)

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin. California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/22/2022			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07 00 Pacific		Water			X	2	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification Unconfirmed	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 1433				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No.: 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation Gross Alpha/Beta	900 0/Filtration_Rad Gross Alpha/Beta - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07 00 Pacific		Water			X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 1433				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals BMP Performance

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the BMP Performance program starting from data collected October 1st, 2022.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201296.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha/Beta - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07:00 Pacific		Water			X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	FEDEX	12/14/22 1433		FED EX		
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: DEC 15 2022 0840	Company ETAS
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201235.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/22/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07:00 Pacific		Water			X	1	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 11:08	EC	FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by:	Date/Time: DEC 15 2022 0845	Company ELAP
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201296.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha/Beta - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07:00 Pacific		Water			X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	FEDEX	12/14/22 1433		FED EX		
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: DEC 15 2022 0800	Company ETAS
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201235.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/22/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL - BMP Performance	SSOW#:			
Site:				

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07:00 Pacific		Water			X	1	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FED EX	12/14/22 1103	EC	FED EX		
2	Relinquished by: FED EX	Date/Time:	Company	Received by: [signature]	DEC 15 2022 0645	ETA
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120461-1
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120461
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL - BMP Performance
SDG NUMBER 001, 002, 009 and/or 11 Watersheds

JOB NUMBER

570-120461-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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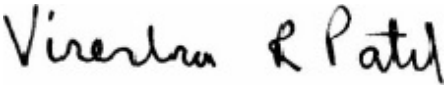
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
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Definitions/Glossary

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120461-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120461-2

Comments
No additional comments.

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.1º C and 3.9º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following sample was received with insufficient preservation at a pH of >2 SU: EPSW001IE01_20221211 (570-120461-1). 570-120461-K-1. The sample was preserved to the appropriate pH in the laboratory.

Dioxin
Method 1613B: The continuing calibration verification (CCV) associated with batch 320-648563 recovered above the upper control limit for 2,3,7,8-TCDF. The samples associated with this CCV had no detection over the reporting limit (RL) for the affected analyte and samples with any estimated detections below the reporting limit were analyzed on a second column for confirmation; therefore, the data have been reported.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: EPSW001IE01_20221211 (570-120461-1), (CCV 320-648980/2) and (MB 320-644230/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: The continuing calibration verification (CCV) associated with batch 320-648980 recovered above the upper control limit for the surrogate 37Cl4-2,3,7,8-TCDD. The surrogate is not used in the quantitation of any target analytes but used to monitor the efficiency of any cleanup steps done during the extraction process. The samples associated with this CCV were within limits for the surrogate; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
Method 1613B: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: EPSW001IE01_20221211 (570-120461-1). Nominal volume is 1L.

preparation batch 320-644230
Method: 1613B_Sox_Sep_P
Matrix: Water

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-2
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: EPSW001IE01_20221211

Lab Sample ID: 570-120461-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000013	J,DX MB q	0.000053	0.000000097	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000080	J,DX	0.000053	0.00000011	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000031	J,DX MB	0.000053	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000023	J,DX MB	0.000053	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000027	J,DX MB	0.000053	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000017	J,DX MB	0.000053	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000020	J,DX MB	0.000053	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000024	J,DX MB	0.000053	0.00000016	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000018	J,DX MB	0.000053	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000015	J,DX MB	0.000053	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000058	J,DX MB	0.000053	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000027	J,DX MB	0.000053	0.00000020	ug/L	1		1613B	Total/NA
OCDD	0.00013	MB	0.00011	0.00000049	ug/L	1		1613B	Total/NA
OCDF	0.000012	J,DX MB	0.00011	0.00000033	ug/L	1		1613B	Total/NA
Total TCDF	0.0000011	J,DX MB q	0.000011	0.00000012	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000028	J,DX MB q	0.000053	0.000000097	ug/L	1		1613B	Total/NA
Total HxCDD	0.000012	J,DX MB q	0.000053	0.00000014	ug/L	1		1613B	Total/NA
Total HxCDF	0.000011	J,DX MB q	0.000053	0.00000015	ug/L	1		1613B	Total/NA
Total HpCDD	0.000028	J,DX MB	0.000053	0.00000022	ug/L	1		1613B	Total/NA
Total HpCDF	0.000014	J,DX MB	0.000053	0.00000020	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000035	ug/L		01/03/23 13:01	01/21/23 05:34	1
1,2,3,7,8-PeCDD	ND		0.000053	0.00000012	ug/L		01/03/23 13:01	01/21/23 05:34	1
1,2,3,7,8-PeCDF	**0.0000013**	**J,DX MB q**	0.000053	0.00000097	ug/L		01/03/23 13:01	01/21/23 05:34	1
2,3,4,7,8-PeCDF	**0.00000080**	**J,DX**	0.000053	0.00000011	ug/L		01/03/23 13:01	01/21/23 05:34	1
1,2,3,4,7,8-HxCDD	**0.0000031**	**J,DX MB**	0.000053	0.00000015	ug/L		01/03/23 13:01	01/21/23 05:34	1
1,2,3,6,7,8-HxCDD	**0.0000023**	**J,DX MB**	0.000053	0.00000015	ug/L		01/03/23 13:01	01/21/23 05:34	1
1,2,3,7,8,9-HxCDD	**0.0000027**	**J,DX MB**	0.000053	0.00000014	ug/L		01/03/23 13:01	01/21/23 05:34	1
1,2,3,4,7,8-HxCDF	**0.0000017**	**J,DX MB**	0.000053	0.00000016	ug/L		01/03/23 13:01	01/21/23 05:34	1
1,2,3,6,7,8-HxCDF	**0.0000020**	**J,DX MB**	0.000053	0.00000016	ug/L		01/03/23 13:01	01/21/23 05:34	1
1,2,3,7,8,9-HxCDF	**0.0000024**	**J,DX MB**	0.000053	0.00000016	ug/L		01/03/23 13:01	01/21/23 05:34	1
2,3,4,6,7,8-HxCDF	**0.0000018**	**J,DX MB**	0.000053	0.00000015	ug/L		01/03/23 13:01	01/21/23 05:34	1
1,2,3,4,6,7,8-HpCDD	**0.000015**	**J,DX MB**	0.000053	0.00000022	ug/L		01/03/23 13:01	01/21/23 05:34	1
1,2,3,4,6,7,8-HpCDF	**0.0000058**	**J,DX MB**	0.000053	0.00000021	ug/L		01/03/23 13:01	01/21/23 05:34	1
1,2,3,4,7,8,9-HpCDF	**0.0000027**	**J,DX MB**	0.000053	0.00000020	ug/L		01/03/23 13:01	01/21/23 05:34	1
OCDD	**0.00013**	**MB**	0.00011	0.00000049	ug/L		01/03/23 13:01	01/21/23 05:34	1
OCDF	**0.000012**	**J,DX MB**	0.00011	0.00000033	ug/L		01/03/23 13:01	01/21/23 05:34	1
Total TCDD	ND		0.000011	0.00000035	ug/L		01/03/23 13:01	01/21/23 05:34	1
Total TCDF	**0.0000011**	**J,DX MB q**	0.000011	0.00000012	ug/L		01/03/23 13:01	01/21/23 05:34	1
Total PeCDD	ND		0.000053	0.00000012	ug/L		01/03/23 13:01	01/21/23 05:34	1
Total PeCDF	**0.0000028**	**J,DX MB q**	0.000053	0.00000097	ug/L		01/03/23 13:01	01/21/23 05:34	1
Total HxCDD	**0.000012**	**J,DX MB q**	0.000053	0.00000014	ug/L		01/03/23 13:01	01/21/23 05:34	1
Total HxCDF	**0.000011**	**J,DX MB q**	0.000053	0.00000015	ug/L		01/03/23 13:01	01/21/23 05:34	1
Total HpCDD	**0.000028**	**J,DX MB**	0.000053	0.00000022	ug/L		01/03/23 13:01	01/21/23 05:34	1
Total HpCDF	**0.000014**	**J,DX MB**	0.000053	0.00000020	ug/L		01/03/23 13:01	01/21/23 05:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 106*	*41/43/23 13:41*	*41/21/23 45:36*	*1*
13C-2,3,7,8-TCDF	*72*		*26 - 109*	*41/43/23 13:41*	*41/21/23 45:36*	*1*
13C-1,2,3,7,8-PeCDD	*87*		*25 - 181*	*41/43/23 13:41*	*41/21/23 45:36*	*1*
13C-1,2,3,7,8-PeCDF	*83*		*26 - 185*	*41/43/23 13:41*	*41/21/23 45:36*	*1*
13C-2,3,6,7,8-PeCDF	*79*		*21 - 178*	*41/43/23 13:41*	*41/21/23 45:36*	*1*
13C-1,2,3,6,7,8-HxCDD	*88*		*32 - 161*	*41/43/23 13:41*	*41/21/23 45:36*	*1*
13C-1,2,3,0,7,8-HxCDD	*79*		*28 - 134*	*41/43/23 13:41*	*41/21/23 45:36*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDF	94		20 - 152	41/43/23 13:41	41/21/23 45:36	1
13C-1,2,3,0,7,8-HxCDF	87		20 - 123	41/43/23 13:41	41/21/23 45:36	1
13C-1,2,3,7,8,9-HxCDF	96		29 - 167	41/43/23 13:41	41/21/23 45:36	1
13C-2,3,6,0,7,8-HxCDF	97		28 - 130	41/43/23 13:41	41/21/23 45:36	1
13C-1,2,3,6,0,7,8-HpCDD	143		23 - 164	41/43/23 13:41	41/21/23 45:36	1
13C-1,2,3,6,0,7,8-HpCDF	88		28 - 163	41/43/23 13:41	41/21/23 45:36	1
13C-1,2,3,6,7,8,9-HpCDF	146		20 - 138	41/43/23 13:41	41/21/23 45:36	1
13C-OCDD	149		17 - 157	41/43/23 13:41	41/21/23 45:36	1
13C-OCDF	110		17 - 157	41/43/23 13:41	41/21/23 45:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	94		35 - 197	41/43/23 13:41	41/21/23 45:36	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000011	0.0000013	ug/L		01/03/23 13:01	01/25/23 11:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*94*		*26 - 109*	*41/43/23 13:41*	*41/25/23 11:64*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*111*		*35 - 197*	*41/43/23 13:41*	*41/25/23 11:64*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-2
SDG: 001, 002, 009 and/or 11 Watersheds

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-120461-1	EPSW001IE01_20221211	90
570-120461-1 - RA	EPSW001IE01_20221211	111
MB 320-644230/1-A	Method Blank	91
MB 320-644230/1-A - RA	Method Blank	118

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-644230/2-A	Lab Control Sample	89
LCSD 320-644230/3-A	Lab Control Sample Dup	91

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-2
SDG: 001, 002, 009 and/or 11 Watersheds

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-120461-1	EPSW001IE01_20221211	76	72	87	83	79	88	79	90
570-120461-1 - RA	EPSW001IE01_20221211		90						
MB 320-644230/1-A	Method Blank	72	68	85	78	79	92	78	89
MB 320-644230/1-A - RA	Method Blank		85						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-120461-1	EPSW001IE01_20221211	87	94	97	103	88	104	109	116
570-120461-1 - RA	EPSW001IE01_20221211								
MB 320-644230/1-A	Method Blank	86	92	93	103	88	104	111	120
MB 320-644230/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-644230/2-A	Lab Control Sample	69	64	78	73	71	85	76	86
LCSD 320-644230/3-A	Lab Control Sample Dup	74	68	86	79	79	92	80	91

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-644230/2-A	Lab Control Sample	82	88	91	96	86	99	102	111
LCSD 320-644230/3-A	Lab Control Sample Dup	88	90	94	102	88	102	107	118

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-2
SDG: 001, 002, 009 and/or 11 Watersheds

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-644230/1-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 644230

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000033	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000020	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8-PeCDF	0.000000846	J,DX	0.000050	0.00000012	ug/L		01/03/23 13:01	01/21/23 03:10	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,7,8-HxCDD	0.00000177	J,DX q	0.000050	0.00000019	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,6,7,8-HxCDD	0.000000898	J,DX	0.000050	0.00000021	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8,9-HxCDD	0.00000254	J,DX	0.000050	0.00000018	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,7,8-HxCDF	0.000000787	J,DX	0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,6,7,8-HxCDF	0.000000819	J,DX q	0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8,9-HxCDF	0.00000130	J,DX	0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
2,3,4,6,7,8-HxCDF	0.000000412	J,DX q	0.000050	0.00000013	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,6,7,8-HpCDD	0.00000559	J,DX	0.000050	0.00000030	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,6,7,8-HpCDF	0.00000445	J,DX	0.000050	0.00000024	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,7,8,9-HpCDF	0.00000348	J,DX	0.000050	0.00000024	ug/L		01/03/23 13:01	01/21/23 03:10	1
OCDD	0.0000294	J,DX	0.00010	0.00000059	ug/L		01/03/23 13:01	01/21/23 03:10	1
OCDF	0.00000261	J,DX	0.00010	0.00000046	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total TCDD	ND		0.000010	0.00000033	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total TCDF	0.00000235	J,DX	0.000010	0.00000019	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total PeCDD	ND		0.000050	0.00000020	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total PeCDF	0.000000846	J,DX	0.000050	0.00000012	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HxCDD	0.00000689	J,DX q	0.000050	0.00000018	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HxCDF	0.00000670	J,DX q	0.000050	0.00000013	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HpCDD	0.0000111	J,DX	0.000050	0.00000030	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HpCDF	0.00000861	J,DX	0.000050	0.00000024	ug/L		01/03/23 13:01	01/21/23 03:10	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*72*		*25 - 164*	*01/03/23 13:01*	*01/21/23 03:10*	*1*
13C-2,3,7,8-TCDF	*68*		*24 - 169*	*01/03/23 13:01*	*01/21/23 03:10*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*25 - 181*	*01/03/23 13:01*	*01/21/23 03:10*	*1*
13C-1,2,3,7,8-PeCDF	*78*		*24 - 185*	*01/03/23 13:01*	*01/21/23 03:10*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-644230/1-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 644230

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	79		21 - 178	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,7,8-HxCDD	92		32 - 141	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,6,7,8-HxCDD	78		28 - 130	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,7,8-HxCDF	89		26 - 152	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,6,7,8-HxCDF	86		26 - 123	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,7,8,9-HxCDF	92		29 - 147	01/03/23 13:01	01/21/23 03:10	1
13C-2,3,4,6,7,8-HxCDF	93		28 - 136	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,6,7,8-HpCDD	103		23 - 140	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,6,7,8-HpCDF	88		28 - 143	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,7,8,9-HpCDF	104		26 - 138	01/03/23 13:01	01/21/23 03:10	1
13C-OCDD	111		17 - 157	01/03/23 13:01	01/21/23 03:10	1
13C-OCDF	120		17 - 157	01/03/23 13:01	01/21/23 03:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	01/03/23 13:01	01/21/23 03:10	1

Lab Sample ID: LCS 320-644230/2-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 644230

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000190		ug/L		95	67 - 158
2,3,7,8-TCDF	0.000200	0.000230		ug/L		115	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000891		ug/L		89	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000890		ug/L		89	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000882		ug/L		88	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000883		ug/L		88	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000987		ug/L		99	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000917		ug/L		92	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000938		ug/L		94	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000960		ug/L		96	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000959		ug/L		96	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000942		ug/L		94	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000899		ug/L		90	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000993		ug/L		99	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000890		ug/L		89	78 - 138
OCDD	0.00200	0.00200		ug/L		100	78 - 144
OCDF	0.00200	0.00196		ug/L		98	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	69		20 - 175
13C-2,3,7,8-TCDF	64		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 192
13C-2,3,4,7,8-PeCDF	71		13 - 328
13C-1,2,3,4,7,8-HxCDD	85		21 - 193
13C-1,2,3,6,7,8-HxCDD	76		25 - 163
13C-1,2,3,4,7,8-HxCDF	86		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-644230/2-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 644230

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	82		21 - 159
13C-1,2,3,7,8,9-HxCDF	88		17 - 205
13C-2,3,4,6,7,8-HxCDF	91		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	96		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	86		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	99		20 - 186
13C-OCDD	102		13 - 199
13C-OCDF	111		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	89		31 - 191

Lab Sample ID: LCSD 320-644230/3-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 644230

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000203		ug/L		102	67 - 158	7	50
2,3,7,8-TCDF			0.000200	0.000231		ug/L		115	75 - 158	0	50
1,2,3,7,8-PeCDD			0.00100	0.000886		ug/L		89	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.000923		ug/L		92	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.000911		ug/L		91	68 - 160	3	50
1,2,3,4,7,8-HxCDD			0.00100	0.000910		ug/L		91	70 - 164	3	50
1,2,3,6,7,8-HxCDD			0.00100	0.00104		ug/L		104	76 - 134	5	50
1,2,3,7,8,9-HxCDD			0.00100	0.000959		ug/L		96	64 - 162	4	50
1,2,3,4,7,8-HxCDF			0.00100	0.000971		ug/L		97	72 - 134	3	50
1,2,3,6,7,8-HxCDF			0.00100	0.000997		ug/L		100	84 - 130	4	50
1,2,3,7,8,9-HxCDF			0.00100	0.00102		ug/L		102	78 - 130	6	50
2,3,4,6,7,8-HxCDF			0.00100	0.000987		ug/L		99	70 - 156	5	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000924		ug/L		92	70 - 140	3	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00105		ug/L		105	82 - 122	6	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000942		ug/L		94	78 - 138	6	50
OCDD			0.00200	0.00209		ug/L		104	78 - 144	4	50
OCDF			0.00200	0.00200		ug/L		100	63 - 170	2	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	74		20 - 175
13C-2,3,7,8-TCDF	68		22 - 152
13C-1,2,3,7,8-PeCDD	86		21 - 227
13C-1,2,3,7,8-PeCDF	79		21 - 192
13C-2,3,4,7,8-PeCDF	79		13 - 328
13C-1,2,3,4,7,8-HxCDD	92		21 - 193
13C-1,2,3,6,7,8-HxCDD	80		25 - 163
13C-1,2,3,4,7,8-HxCDF	91		19 - 202
13C-1,2,3,6,7,8-HxCDF	88		21 - 159
13C-1,2,3,7,8,9-HxCDF	90		17 - 205
13C-2,3,4,6,7,8-HxCDF	94		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	102		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-644230/3-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 644230

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	88		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	102		20 - 186
13C-OCDD	107		13 - 199
13C-OCDF	118		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	91		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-644230/1-A
Matrix: Water
Analysis Batch: 648980

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 644230

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.0000013	ug/L		01/03/23 13:01	01/25/23 13:31	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	85		24 - 169	01/03/23 13:01	01/25/23 13:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	118		35 - 197	01/03/23 13:01	01/25/23 13:31	1

Specialty Organics

Prep Batch: 644230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1 - RA	EPSW001IE01_20221211	Total/NA	Water	1613B	
570-120461-1	EPSW001IE01_20221211	Total/NA	Water	1613B	
MB 320-644230/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-644230/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-644230/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-644230/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 648563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Total/NA	Water	1613B	644230
MB 320-644230/1-A	Method Blank	Total/NA	Water	1613B	644230
LCS 320-644230/2-A	Lab Control Sample	Total/NA	Water	1613B	644230
LCSD 320-644230/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	644230

Analysis Batch: 648980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1 - RA	EPSW001IE01_20221211	Total/NA	Water	1613B	644230
MB 320-644230/1-A - RA	Method Blank	Total/NA	Water	1613B	644230

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-120461-2
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: EPSW001IE01_20221211
Lab Sample ID: 570-120461-1

Date Collected: 12/11/22 07:00
Matrix: Water
Date Received: 12/12/22 13:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		942.8 mL	20.0 uL	644230	01/03/23 13:01	CGB	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	648980	01/25/23 11:40	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			942.8 mL	20.0 uL	644230	01/03/23 13:01	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	648563	01/21/23 05:34	SMA	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120461-2
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-31-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-30-23
Hawaii	State	<cert No.>	01-29-23
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-2
SDG: 001, 002, 009 and/or 11 Watersheds

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-2
SDG: 001, 002, 009 and/or 11 Watersheds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120461-1	EPSW001IE01_20221211	Water	12/11/22 07:00	12/12/22 13:10

120461

Every

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

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Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Dissolved)	Method 200.8 As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)			Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20221211	12/11/22	0700	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
A1BPSW0001_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
UP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			

570-120461 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

								1	1	1	1	1	1	4	2	1	1		

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com, Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by	Company: 3174	Date/Time: 12/12/22 1310	Received by: EC		Date/Time: 12/12/22 1310
Relinquished by	Company: EC	Date/Time: 12/12/22 1710	Received by: EC		Date/Time: 12/12/22 17:10
Relinquished by	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

2-3/2.1 2-0/1.8 4.1/3.9 3-3/3.1 4.0/3.8 3.3/3.1 SC11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

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1/26/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin. California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/22/2022			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07 00 Pacific		Water			X	2	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification Unconfirmed	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 12/14/22 1433	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No.: 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation Gross Alpha/Beta	900 0/Filtration_Rad Gross Alpha/Beta - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07 00 Pacific		Water			X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 1433				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201236.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-120461-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/4/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07:00 Pacific		Water			X	1	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12/14/22 11:15	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.2c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120461-2
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120461
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120461-2
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120461
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 12/15/22 02:53 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.9c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 12/22/2022 10:54:41 AM

JOB DESCRIPTION

Boeing SSFL - BMP Performance
SDG NUMBER 001, 002, 009 and/or 11 Watersheds

JOB NUMBER

570-120461-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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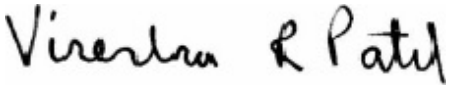
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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12/22/2022 10:54:41 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-3
SDG: 001, 002, 009 and/or 11 Watersheds

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120461-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120461-3

Comments
No additional comments.

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.1º C and 3.9º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following sample was received with insufficient preservation at a pH of >2 SU: EPSW001IE01_20221211 (570-120461-1). 570-120461-K-1. The sample was preserved to the appropriate pH in the laboratory.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-3
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: EPSW001IE01_20221211

Lab Sample ID: 570-120461-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0076		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0053		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-3
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0076		0.00050	0.000079	ug/L			12/19/22 13:59	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-3
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0053		0.00050	0.000079	ug/L			12/19/22 19:01	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-413392/18
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			12/19/22 14:20	1

Lab Sample ID: MB 580-413392/19
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			12/19/22 14:24	1

Lab Sample ID: MB 580-413392/20
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			12/19/22 14:29	1

Lab Sample ID: LCS 580-413392/25
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00490		ug/L		98	77 - 123		

Lab Sample ID: LCSD 580-413392/26
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00488		ug/L		98	77 - 123	0	24

Lab Sample ID: 570-120461-1 MS
Matrix: Water
Analysis Batch: 413392

Client Sample ID: EPSW001IE01_20221211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.0076		0.0100	0.0168		ug/L		92	71 - 125		

Lab Sample ID: 570-120461-1 MSD
Matrix: Water
Analysis Batch: 413392

Client Sample ID: EPSW001IE01_20221211
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0076		0.0100	0.0164		ug/L		88	71 - 125	2	24

Lab Sample ID: 580-121243-A-21 MS
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.19		0.300	0.441		ug/L		85	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-121243-A-21 MSD
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.19		0.300	0.440		ug/L		85	71 - 125	0	24

Lab Sample ID: MB 580-413056/1-A
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			12/19/22 17:11	1

Metals

Filtration Batch: 413056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Dissolved	Water	Filtration	
MB 580-413056/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 413392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Dissolved	Water	1631E	413056
570-120461-1	EPSW001IE01_20221211	Total/NA	Water	1631E	
MB 580-413056/1-A	Method Blank	Dissolved	Water	1631E	413056
MB 580-413392/18	Method Blank	Total/NA	Water	1631E	
MB 580-413392/19	Method Blank	Total/NA	Water	1631E	
MB 580-413392/20	Method Blank	Total/NA	Water	1631E	
LCS 580-413392/25	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-413392/26	Lab Control Sample Dup	Total/NA	Water	1631E	
570-120461-1 MS	EPSW001IE01_20221211	Total/NA	Water	1631E	
570-120461-1 MSD	EPSW001IE01_20221211	Total/NA	Water	1631E	
580-121243-A-21 MS	Matrix Spike	Total/NA	Water	1631E	
580-121243-A-21 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-120461-3
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: EPSW001IE01_20221211
Lab Sample ID: 570-120461-1
Date Collected: 12/11/22 07:00
Matrix: Water
Date Received: 12/12/22 13:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	413056	12/15/22 14:37	DRM	EET SEA
Dissolved	Analysis	1631E		1			413392	12/19/22 19:01	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			413392	12/19/22 13:59	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120461-3
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	P330-20-00031	12-31-22
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-3
SDG: 001, 002, 009 and/or 11 Watersheds

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-3
SDG: 001, 002, 009 and/or 11 Watersheds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120461-1	EPSW001IE01_20221211	Water	12/11/22 07:00	12/12/22 13:10

120461

Every

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901 1)	Gross Alpha & Beta, total recoverable(E900 0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901 1)	SO4 (E300)	Method 200.8 As, Cd, Cu, Pb, Se Method 200 7 Fe, Mn, Zn (Total Dissolved)	Method 200.8 As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20221211	12/11/22	0700	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
A1BPSW0001_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
OUP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
								1	1	1	1	1	1	4	2	1	1				

570-120461 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com, Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd:____ Corr'd:____ Therm ID No.____

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	3HA	12/12/22 1310	[signature] EC	12/12/22 1310
[signature]	EC	12/12/22 1710	[signature] EC	12-12-22 17:10
			Received in Laboratory by:	

2-3/2-1 2-0/1.8 4.1/3.9 3.3/3.1 4.0/3.8 3.3/3.1 SC11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

12/22/2022

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin. California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/22/2022			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07 00 Pacific		Water			X	2	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification Unconfirmed	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 12/14/22 1433	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No.: 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation Gross Alpha/Beta	900 0/Filtration_Rad Gross Alpha/Beta - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07 00 Pacific		Water			X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 1433				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

12/22/2022

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201223.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120461-3
Address: 5755 8th Street East,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements: 6226 1904 3215

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	12/14/22 10:50	E/C	[signature]	12/15/22 9:30	EMS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: NA	Cooler Temperature(s) °C and Other Remarks: 2.2 Dry 2 0.7 Lg Dlw Ice

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120461-3
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120461
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120461-3
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120461
List Number: 4
Creator: Williams, Clifford O

List Source: Eurofins Seattle
List Creation: 12/20/22 10:14 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
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Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL - BMP Performance
SDG NUMBER 001, 002, 009 and/or 11 Watersheds

JOB NUMBER

570-120461-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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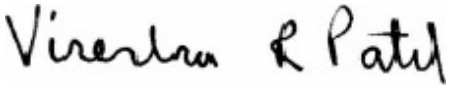

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-4
SDG: 001, 002, 009 and/or 11 Watersheds

Qualifiers

Rad

Qualifier	Qualifier Description
F	Duplicate RPD exceeds the control limit
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120461-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120461-4

Comments
No additional comments.

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.1º C and 3.9º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following sample was received with insufficient preservation at a pH of >2 SU: EPSW001IE01_20221211 (570-120461-1). 570-120461-K-1. The sample was preserved to the appropriate pH in the laboratory.

RAD
Methods 900.0, 9310: Gross alpha/beta prep batch 160-595066:

The duplicate associated with the following samples failed precision for gross beta. The gross alpha precision passed. There is a potential matrix interference present. (680-227905-E-2-A) and (680-227905-E-2-D DU)

Method 901.1: Gamma prep batch 160-594076:

Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20221211 (570-120461-1), (LCS 160-594076/2-A), (MB 160-594076/1-A) and (570-120461-K-1-B DU)

Job ID: 570-120461-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 901.1: Gamma prep batch 160-594397:

Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20221211 (570-120461-1), (LCS 160-594397/2-A), (MB 160-594397/1-A) and (570-120461-J-1-C DU)

Method 906.0: Tritium 593941
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPSW001IE01_20221211 (570-120461-1), (LCS 160-593941/2-A), (MB 160-593941/1-A), (380-30774-F-1-A), (380-30774-F-1-B DU), (380-30782-F-1-B) and (380-30782-F-1-C MS)

Methods A-01-R, U-02-RC: Isotopic Uranium batch 596160
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20221211 (570-120461-1), (LCS 160-596160/2-A), (MB 160-596160/1-A), (160-48265-E-1-A) and (160-48265-E-1-B DU)

Method A-01-R: Isotopic Uranium batch 596512
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20221211 (570-120461-1), (LCS 160-596512/2-A), (MB 160-596512/1-A), (160-48520-A-1-A) and (160-48520-A-1-B DU)

Method ExtChrom:

Method ExtChrom: Uranium Prep Batch 160-596512:

Job ID: 570-120461-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPSW001IE01_20221211 (570-120461-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-4
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: EPSW001IE01_20221211

Lab Sample ID: 570-120461-1

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.342	U	0.628	0.629	3.00	1.09	pCi/L	12/29/22 10:15	01/05/23 20:25	1
Gross Beta	**1.60**		0.645	0.665	4.00	0.896	pCi/L	12/29/22 10:15	01/05/23 20:25	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-4
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.847	U	0.913	0.918	3.00	1.49	pCi/L	12/29/22 10:15	01/05/23 20:26	1
Gross Beta	0.816	U	0.633	0.638	4.00	0.981	pCi/L	12/29/22 10:15	01/05/23 20:26	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.22	U	6.90	6.90	20.0	8.52	pCi/L	12/19/22 11:34	01/13/23 09:51	1
Potassium-40	-19.3	U	89.4	89.4		117	pCi/L	12/19/22 11:34	01/13/23 09:51	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-4
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	4.02	U	7.68	7.69	20.0	10.0	pCi/L	12/20/22 15:02	01/12/23 15:54	1
Potassium-40	-52.0	U	166	166		237	pCi/L	12/20/22 15:02	01/12/23 15:54	1

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	327		190	192	500	278	pCi/L	12/16/22 14:55	12/21/22 14:54	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-4
SDG: 001, 002, 009 and/or 11 Watersheds

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.522		0.415	0.416	1.00	0.415	pCi/L	01/09/23 16:00	01/13/23 14:10	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPSW001IE01_20221211
Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	**0.322**		0.221	0.223	1.00	0.193	pCi/L	01/11/23 12:14	01/13/23 14:14	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120461-4
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	U-232 (30-110)							
160-48265-E-1-B DU	Duplicate	82.7							
160-48520-A-1-B DU	Duplicate	80.9							
LCS 160-596160/2-A	Lab Control Sample	91.2							
LCS 160-596512/2-A	Lab Control Sample	87.6							
MB 160-596160/1-A	Method Blank	87.4							
MB 160-596512/1-A	Method Blank	90.8							

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-595066/1-A
Matrix: Water
Analysis Batch: 595512

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 595066

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.4804	U	0.636	0.638	3.00	1.31	pCi/L	12/29/22 10:15	01/04/23 19:02	1
Gross Beta	0.3169	U	0.488	0.489	4.00	0.822	pCi/L	12/29/22 10:15	01/04/23 19:02	1

Lab Sample ID: LCS 160-595066/2-A
Matrix: Water
Analysis Batch: 595512

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 595066

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	62.08		8.88	3.00	2.67	pCi/L	123	75 - 125

Lab Sample ID: LCSB 160-595066/3-A
Matrix: Water
Analysis Batch: 595512

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 595066

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.9	74.22		7.95	4.00	0.892	pCi/L	100	75 - 125

Lab Sample ID: 680-227905-E-2-B MS
Matrix: Water
Analysis Batch: 595569

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 595066

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	-0.0672	U	50.5	48.13		6.40	3.00	1.02	pCi/L	95	60 - 140

Lab Sample ID: 680-227905-E-2-C MSBT
Matrix: Water
Analysis Batch: 595569

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 595066

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	1.15		73.9	75.04		8.01	4.00	0.914	pCi/L	99	60 - 140

Lab Sample ID: 680-227905-E-2-D DU
Matrix: Water
Analysis Batch: 596333

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 595066

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	-0.0672	U	0.4132	U	0.561	3.00	0.941	pCi/L	0.45	1
Gross Beta	1.15		7.111	F	1.21	4.00	0.869	pCi/L	3.07	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-594076/1-A
Matrix: Water
Analysis Batch: 596811

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594076

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-4.780	U	8.70	8.72	20.0	10.4	pCi/L	12/19/22 11:34	01/13/23 09:52	1
Potassium-40	14.09	U	56.1	56.2		92.7	pCi/L	12/19/22 11:34	01/13/23 09:52	1

Lab Sample ID: LCS 160-594076/2-A
Matrix: Water
Analysis Batch: 596808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594076

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	153700		18300		301	pCi/L	114	75 - 125
Cesium-137	41000	42720		5090	20.0	85.3	pCi/L	104	75 - 125
Cobalt-60	18300	19040		2270		55.8	pCi/L	104	75 - 125

Lab Sample ID: 570-120461-1 DU
Matrix: Water
Analysis Batch: 596811

Client Sample ID: EPSW001IE01_20221211
Prep Type: Total/NA
Prep Batch: 594076

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	1.22	U	1.451	U	5.45	20.0	6.87	pCi/L	0.02	1
Potassium-40	-19.3	U	-48.93	U	112		143	pCi/L	0.15	1

Lab Sample ID: MB 160-594397/1-A
Matrix: Water
Analysis Batch: 596783

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594397

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-3.155	U	13.4	13.4	20.0	17.3	pCi/L	12/20/22 15:02	01/12/23 10:03	1
Potassium-40	-134.4	U	181	182		286	pCi/L	12/20/22 15:02	01/12/23 10:03	1

Lab Sample ID: LCS 160-594397/2-A
Matrix: Water
Analysis Batch: 596783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594397

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	137000	117900		14000		289	pCi/L	86	75 - 125
Cesium-137	42600	38460		4590	20.0	123	pCi/L	90	75 - 125
Cobalt-60	19000	17550		2100		56.3	pCi/L	92	75 - 125

Lab Sample ID: 570-120461-1 DU
Matrix: Water
Analysis Batch: 596805

Client Sample ID: EPSW001IE01_20221211
Prep Type: Dissolved
Prep Batch: 594397

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	4.02	U	1.262	U	13.2	20.0	17.3	pCi/L	0.13	1
Potassium-40	-52.0	U	30.30	U	144		208	pCi/L	0.27	1

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-593941/1-A
Matrix: Water
Analysis Batch: 594579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 593941

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	46.40	U	238	238	500	476	pCi/L	12/16/22 14:55	12/20/22 06:54	1

Lab Sample ID: LCS 160-593941/2-A
Matrix: Water
Analysis Batch: 594579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 593941

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2130	2097		374	500	280	pCi/L	99	75 - 125		

Lab Sample ID: 380-30782-F-1-C MS
Matrix: Water
Analysis Batch: 594579

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 593941

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	155	U G	2140	1989		363	500	277	pCi/L	86	60 - 140		

Lab Sample ID: 380-30774-F-1-B DU
Matrix: Water
Analysis Batch: 594579

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 593941

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	104	U		130.2	U	171	500	285	pCi/L			0.07	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-596160/1-A
Matrix: Water
Analysis Batch: 596925

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596160

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.1284	U	0.1273	0.1276	1.00	0.148	pCi/L	01/09/23 16:00	01/13/23 14:10	1

Lab Sample ID: LCS 160-596160/2-A
Matrix: Water
Analysis Batch: 596926

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596160

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	10.87		1.33	1.00	0.131	pCi/L	85	75 - 125		
Uranium-238			13.0	12.19		1.45	1.00	0.111	pCi/L	94	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*91.2*		*30 - 110*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: 160-48265-E-1-B DU
Matrix: Water
Analysis Batch: 596936

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596160

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	1.03			1.114		0.343	1.00	0.180	pCi/L			0.13	1

Lab Sample ID: MB 160-596512/1-A
Matrix: Water
Analysis Batch: 596962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596512

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1953		0.152	0.152	1.00	0.171	pCi/L	01/11/23 12:14	01/13/23 14:11	1

Lab Sample ID: LCS 160-596512/2-A
Matrix: Water
Analysis Batch: 596969

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596512

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.40		1.47	1.00	0.154	pCi/L	97	75 - 125		
Uranium-238			13.0	13.08		1.53	1.00	0.132	pCi/L	100	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*87.6*		*30 - 110*

Lab Sample ID: 160-48520-A-1-B DU
Matrix: Water
Analysis Batch: 597029

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596512

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.159			0.07438	U	0.1125	1.00	0.163	pCi/L			0.35	1

Rad

Prep Batch: 593941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Total/NA	Water	LSC_Dist_Susp	
MB 160-593941/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-593941/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
380-30782-F-1-C MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
380-30774-F-1-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Filtration Batch: 594030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Dissolved	Water	Filtration	
570-120461-1 DU	EPSW001IE01_20221211	Dissolved	Water	Filtration	

Prep Batch: 594076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Total/NA	Water	Fill_Geo-0	
MB 160-594076/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-594076/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-120461-1 DU	EPSW001IE01_20221211	Total/NA	Water	Fill_Geo-0	

Prep Batch: 594397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Dissolved	Water	Fill_Geo-0	594030
MB 160-594397/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-594397/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-120461-1 DU	EPSW001IE01_20221211	Dissolved	Water	Fill_Geo-0	594030

Prep Batch: 595066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Dissolved	Water	Evaporation	594030
570-120461-1	EPSW001IE01_20221211	Total/NA	Water	Evaporation	
MB 160-595066/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-595066/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-595066/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
680-227905-E-2-B MS	Matrix Spike	Total/NA	Water	Evaporation	
680-227905-E-2-C MSBT	Matrix Spike	Total/NA	Water	Evaporation	
680-227905-E-2-D DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 596160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Total/NA	Water	ExtChrom	
MB 160-596160/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-596160/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
160-48265-E-1-B DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 596512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120461-1	EPSW001IE01_20221211	Dissolved	Water	ExtChrom	594030
MB 160-596512/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-596512/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
160-48520-A-1-B DU	Duplicate	Total/NA	Water	ExtChrom	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-4
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: EPSW001IE01_20221211

Date Collected: 12/11/22 07:00
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120461-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	594030	12/19/22 10:56	JML	EET SL
Dissolved	Prep	Evaporation			199.99 mL	1.0 g	595066	12/29/22 10:15	MST	EET SL
Dissolved	Analysis	900.0		1			595569	01/05/23 20:26	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Evaporation			199.99 mL	1.0 g	595066	12/29/22 10:15	MST	EET SL
Total/NA	Analysis	900.0		1			595569	01/05/23 20:25	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	594030	12/19/22 10:56	JML	EET SL
Dissolved	Prep	Fill_Geo-0			500 mL	1.0 g	594397	12/20/22 15:02	SRE	EET SL
Dissolved	Analysis	901.1		1			596783	01/12/23 15:54	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	594076	12/19/22 11:34	SRE	EET SL
Total/NA	Analysis	901.1		1			596810	01/13/23 09:51	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	LSC_Dist_Susp			103.49 mL	1.0 g	593941	12/16/22 14:55	SEH	EET SL
Total/NA	Analysis	906.0		1			594578	12/21/22 14:54	REV	EET SL
	Instrument ID: LSCTEAL									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	594030	12/19/22 10:56	JML	EET SL
Dissolved	Prep	ExtChrom			349.08 mL	1.0 mL	596512	01/11/23 12:14	MAL	EET SL
Dissolved	Analysis	A-01-R		1			596973	01/13/23 14:14	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			253.84 mL	1.0 mL	596160	01/09/23 16:00	CMM	EET SL
Total/NA	Analysis	A-01-R		1			596939	01/13/23 14:10	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120461-4
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22 *
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120461-4
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120461-4
SDG: 001, 002, 009 and/or 11 Watersheds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120461-1	EPSW001IE01_20221211	Water	12/11/22 07:00	12/12/22 13:10

Every

120461

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Eurofins Calscience, Inc.

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑CALENDAR DAYS ☐WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Dissolved)	Method 200.8 As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)			Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20221211	12/11/22	0700	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
A1BPSW0001_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
UP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			

570-120461 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other 1 1 1 1 1 1 4 2 1 1

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal

☐Return to Client ☐Disposal by Lab ☑Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com, Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by	Company: 3HA	Date/Time: 12/12/22 1310	Received by: EC		Date/Time: 12/12/22 1310
Relinquished by	Company: EC	Date/Time: 12/12/22 1710	Received by: EC		Date/Time: 12/12/22 17:10
Relinquished by	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

2-3/2.1 2-0/1.8 4.1/3.9 3-3/3.1 4.0/3.8 3.3/3.1 SC11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

1/23/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin. California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/22/2022			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07 00 Pacific		Water			X	2	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 12/14/22 1433	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/23/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No.: 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation Gross Alpha/Beta	900 0/Filtration_Rad Gross Alpha/Beta - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07 00 Pacific		Water			X	X	X	X	X	X	2	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 1433				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/23/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201296.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha/Beta - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07:00 Pacific		Water			X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	FEDEX	12/14/22 1433		FED EX		
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: DEC 15 2022 0840	Company ETAST
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201235.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/22/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07:00 Pacific		Water			X	1	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 11:08	EC	FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by:	DEC 15 2022 0845	Company ETAST
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201296.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha/Beta - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07:00 Pacific		Water			X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	FEDEX	12/14/22 1433		FED EX		
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: DEC 15 2022 0800	Company ETAS
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201235.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120461-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 12/22/2022			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20221211 (570-120461-1)	12/11/22	07:00 Pacific		Water			X	1	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by:	Date: Time: Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 1103	EC	FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by:	DEC 15 2022 0645	Company ETA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120461-4
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120461
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120461-4
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120461
List Number: 2
Creator: Bohlmann, Jessica M

List Source: Eurofins St. Louis
List Creation: 12/15/22 11:20 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	570-120461-K-1 was received with a pH >2 SU.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 12/28/2022 8:27:05 AM

JOB DESCRIPTION

Boeing SSFL - BMP Performance
SDG NUMBER 001, 002, 009 and/or 11 Watersheds

JOB NUMBER

570-120466-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

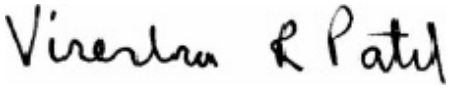
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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12/28/2022 8:27:05 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-1
SDG: 001, 002, 009 and/or 11 Watersheds

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120466-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120466-1

Comments
No additional comments.

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Receipt Exceptions

The laboratory received 250 ml plastic with HNO3 instead of 250 ml unpreserved plastic container for dissolved metals analysis on the following sample: A1BMP0002_20221211 (570-120466-1), A1BMP0003_20221211 (570-120466-2) and ILBMP0002_20221211 (570-120466-3). Aiquot was taken from 1L Amber glass container.

The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following sample: A1BMP0002_20221211 (570-120466-1), A1BMP0003_20221211 (570-120466-2) and ILBMP0002_20221211 (570-120466-3). Aliquott was taken from 1L Amber glass container.

The clients office was contacted with the above sample receipt anomalies. The laboratory was provided written direction on how to proceed, please refer to the COC section of the report for further details.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: A1BMP0002_20221211 (570-120466-1), A1BMP0003_20221211 (570-120466-2), ILBMP0002_20221211 (570-120466-3), EPNDSW04_20221211 (570-120466-4) and EPNDSW04_20221211-02 (570-120466-5). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-1
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: A1BMP0002_20221211 — Lab Sample ID: 570-120466-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	1.3		1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	12		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	4.5		1.0	0.12	ug/L	1		200.8	Total Recoverable
Cadmium	0.14	J,DX BU	1.0	0.13	ug/L	1		200.8	Dissolved
Copper	9.2	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Total Suspended Solids	29		1.7	1.4	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	4.40		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	23.51		0.01	0.01	%	1		D4464	Total/NA
Medium Sand (0.25 to 0.5 mm)	2.93		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	46.91		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	51.31		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	22.24		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: A1BMP0003_20221211 — Lab Sample ID: 570-120466-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	3.2		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	1.2		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	21	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.28	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	3.4		1.1	0.87	mg/L	1		SM 2540D	Total/NA

Client Sample ID: ILBMP0002_20221211 — Lab Sample ID: 570-120466-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2.9		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	1.9		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	3.8	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.70	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	6.7		1.1	0.87	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	8.87		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	8.56		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	41.67		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	50.54		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	40.91		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EPNDSW04_20221211 — Lab Sample ID: 570-120466-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	3.5		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	4.0		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	3.0	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.80	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	20		1.7	1.4	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	31.17		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	68.72		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample ID: EPNDSW04_20221211 (Continued)
Lab Sample ID: 570-120466-4

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Total Silt and Clay (0 to 0.0626mm)	99.89		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	0.11		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EPNDSW04_20221211-02
Lab Sample ID: 570-120466-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	3.4		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	3.6		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	2.9	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.67	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	17		2.0	1.7	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	26.27		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	54.41		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	80.67		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	19.32		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: A1BMP0002_20221211 **Lab Sample ID: 570-120466-1**
Date Collected: 12/11/22 10:30 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**1.3**		1.0	0.13	ug/L		12/16/22 13:08	12/19/22 18:11	1
Copper	**12**		2.0	0.32	ug/L		12/16/22 13:08	12/19/22 18:11	1
Lead	**4.5**		1.0	0.12	ug/L		12/16/22 13:08	12/19/22 18:11	1

Client Sample ID: A1BMP0003_20221211 **Lab Sample ID: 570-120466-2**
Date Collected: 12/11/22 10:15 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		12/16/22 13:08	12/19/22 18:13	1
Copper	**3.2**		2.0	0.32	ug/L		12/16/22 13:08	12/19/22 18:13	1
Lead	**1.2**		1.0	0.12	ug/L		12/16/22 13:08	12/19/22 18:13	1

Client Sample ID: ILBMP0002_20221211 **Lab Sample ID: 570-120466-3**
Date Collected: 12/11/22 10:00 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		12/16/22 13:08	12/19/22 18:16	1
Copper	**2.9**		2.0	0.32	ug/L		12/16/22 13:08	12/19/22 18:16	1
Lead	**1.9**		1.0	0.12	ug/L		12/16/22 13:08	12/19/22 18:16	1

Client Sample ID: EPNDSW04_20221211 **Lab Sample ID: 570-120466-4**
Date Collected: 12/11/22 07:30 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		12/16/22 13:08	12/19/22 18:18	1
Copper	**3.5**		2.0	0.32	ug/L		12/16/22 13:08	12/19/22 18:18	1
Lead	**4.0**		1.0	0.12	ug/L		12/16/22 13:08	12/19/22 18:18	1

Client Sample ID: EPNDSW04_20221211-02 **Lab Sample ID: 570-120466-5**
Date Collected: 12/11/22 07:30 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		12/16/22 13:08	12/19/22 18:21	1
Copper	**3.4**		2.0	0.32	ug/L		12/16/22 13:08	12/19/22 18:21	1
Lead	**3.6**		1.0	0.12	ug/L		12/16/22 13:08	12/19/22 18:21	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: A1BMP0002_20221211 **Lab Sample ID: 570-120466-1**
Date Collected: 12/11/22 10:30 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.14**	**J,DX BU**	1.0	0.13	ug/L			12/15/22 10:20	1
Copper	**9.2**	**BU**	2.0	0.32	ug/L			12/15/22 10:20	1
Lead	ND	BU	1.0	0.12	ug/L			12/15/22 10:20	1

Client Sample ID: A1BMP0003_20221211 **Lab Sample ID: 570-120466-2**
Date Collected: 12/11/22 10:15 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			12/15/22 10:25	1
Copper	**21**	**BU**	2.0	0.32	ug/L			12/15/22 10:25	1
Lead	**0.28**	**J,DX BU**	1.0	0.12	ug/L			12/15/22 10:25	1

Client Sample ID: ILBMP0002_20221211 **Lab Sample ID: 570-120466-3**
Date Collected: 12/11/22 10:00 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			12/15/22 10:23	1
Copper	**3.8**	**BU**	2.0	0.32	ug/L			12/15/22 10:23	1
Lead	**0.70**	**J,DX BU**	1.0	0.12	ug/L			12/15/22 10:23	1

Client Sample ID: EPNDSW04_20221211 **Lab Sample ID: 570-120466-4**
Date Collected: 12/11/22 07:30 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			12/15/22 10:52	1
Copper	**3.0**	**BU**	2.0	0.32	ug/L			12/15/22 10:52	1
Lead	**0.80**	**J,DX BU**	1.0	0.12	ug/L			12/15/22 10:52	1

Client Sample ID: EPNDSW04_20221211-02 **Lab Sample ID: 570-120466-5**
Date Collected: 12/11/22 07:30 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			12/15/22 10:54	1
Copper	**2.9**	**BU**	2.0	0.32	ug/L			12/15/22 10:54	1
Lead	**0.67**	**J,DX BU**	1.0	0.12	ug/L			12/15/22 10:54	1

General Chemistry

Client Sample ID: A1BMP0002_20221211
Date Collected: 12/11/22 10:30
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	29		1.7	1.4	mg/L			12/16/22 17:52	1

Client Sample ID: A1BMP0003_20221211
Date Collected: 12/11/22 10:15
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	3.4		1.1	0.87	mg/L			12/16/22 17:52	1

Client Sample ID: ILBMP0002_20221211
Date Collected: 12/11/22 10:00
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	6.7		1.1	0.87	mg/L			12/16/22 17:52	1

Client Sample ID: EPNDSW04_20221211
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	20		1.7	1.4	mg/L			12/16/22 17:52	1

Client Sample ID: EPNDSW04_20221211-02
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	17		2.0	1.7	mg/L			12/16/22 17:52	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: A1BMP0002_20221211 **Lab Sample ID: 570-120466-1**
Date Collected: 12/11/22 10:30 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**4.40**		0.01	0.01	%			12/14/22 12:28	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			12/14/22 12:28	1
Fine Sand (0.125 to 0.25mm)	**23.51**		0.01	0.01	%			12/14/22 12:28	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			12/14/22 12:28	1
Medium Sand (0.25 to 0.5 mm)	**2.93**		0.01	0.01	%			12/14/22 12:28	1
Silt (0.00391 to 0.0625mm)	**46.91**		0.01	0.01	%			12/14/22 12:28	1
Total Silt and Clay (0 to 0.0626mm)	**51.31**		0.01	0.01	%			12/14/22 12:28	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			12/14/22 12:28	1
Very Fine Sand (0.0625 to 0.125 mm)	**22.24**		0.01	0.01	%			12/14/22 12:28	1

Client Sample ID: A1BMP0003_20221211 **Lab Sample ID: 570-120466-2**
Date Collected: 12/11/22 10:15 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			12/14/22 12:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			12/14/22 12:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			12/14/22 12:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			12/14/22 12:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			12/14/22 12:34	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			12/14/22 12:34	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			12/14/22 12:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			12/14/22 12:34	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			12/14/22 12:34	1

Client Sample ID: ILBMP0002_20221211 **Lab Sample ID: 570-120466-3**
Date Collected: 12/11/22 10:00 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**8.87**		0.01	0.01	%			12/14/22 12:41	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			12/14/22 12:41	1
Fine Sand (0.125 to 0.25mm)	**8.56**		0.01	0.01	%			12/14/22 12:41	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			12/14/22 12:41	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			12/14/22 12:41	1
Silt (0.00391 to 0.0625mm)	**41.67**		0.01	0.01	%			12/14/22 12:41	1
Total Silt and Clay (0 to 0.0626mm)	**50.54**		0.01	0.01	%			12/14/22 12:41	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			12/14/22 12:41	1
Very Fine Sand (0.0625 to 0.125 mm)	**40.91**		0.01	0.01	%			12/14/22 12:41	1

Client Sample ID: EPNDSW04_20221211 **Lab Sample ID: 570-120466-4**
Date Collected: 12/11/22 07:30 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**31.17**		0.01	0.01	%			12/14/22 12:48	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			12/14/22 12:48	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			12/14/22 12:48	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			12/14/22 12:48	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			12/14/22 12:48	1
Silt (0.00391 to 0.0625mm)	**68.72**		0.01	0.01	%			12/14/22 12:48	1
Total Silt and Clay (0 to 0.0626mm)	**99.89**		0.01	0.01	%			12/14/22 12:48	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Client Sample ID: EPNDSW04_20221211 **Lab Sample ID: 570-120466-4**
Date Collected: 12/11/22 07:30 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			12/14/22 12:48	1
Very Fine Sand (0.0625 to 0.125 mm)	**0.11**		0.01	0.01	%			12/14/22 12:48	1

Client Sample ID: EPNDSW04_20221211-02 **Lab Sample ID: 570-120466-5**
Date Collected: 12/11/22 07:30 **Matrix: Water**
Date Received: 12/12/22 17:10

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**26.27**		0.01	0.01	%			12/14/22 12:54	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			12/14/22 12:54	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			12/14/22 12:54	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			12/14/22 12:54	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			12/14/22 12:54	1
Silt (0.00391 to 0.0625mm)	**54.41**		0.01	0.01	%			12/14/22 12:54	1
Total Silt and Clay (0 to 0.0626mm)	**80.67**		0.01	0.01	%			12/14/22 12:54	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			12/14/22 12:54	1
Very Fine Sand (0.0625 to 0.125 mm)	**19.32**		0.01	0.01	%			12/14/22 12:54	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

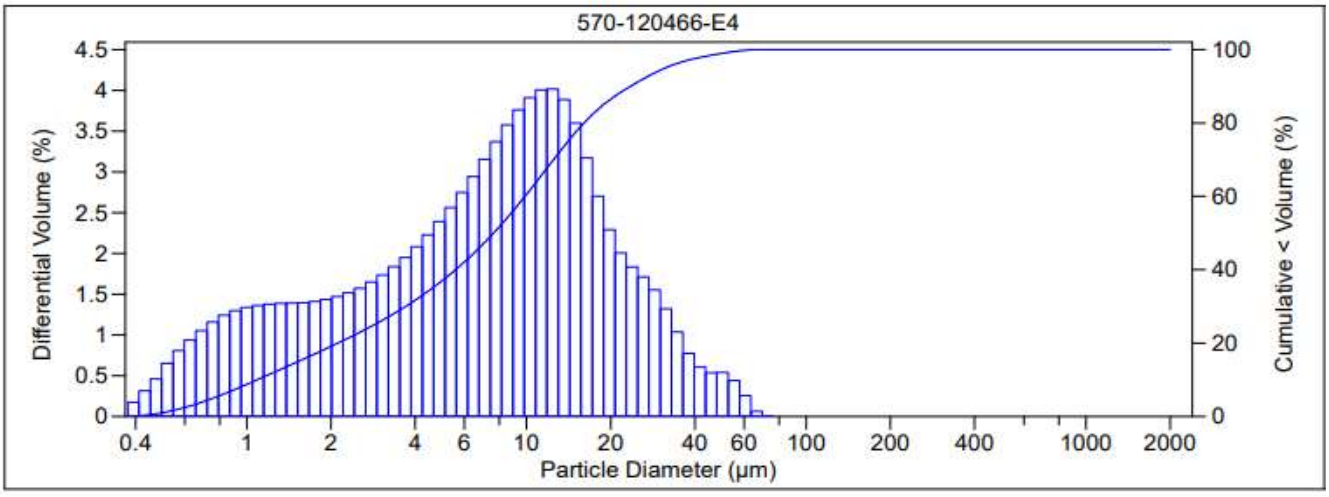
Haley & Aldrich, Inc.

Date Sampled:	12/11/22
Date Received:	12/12/22
Work Order No:	570-120466
Date Analyzed:	12/14/22
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPNDSW04_20221211		Silt	0.010

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.00	0.11	68.72	31.17	99.89



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

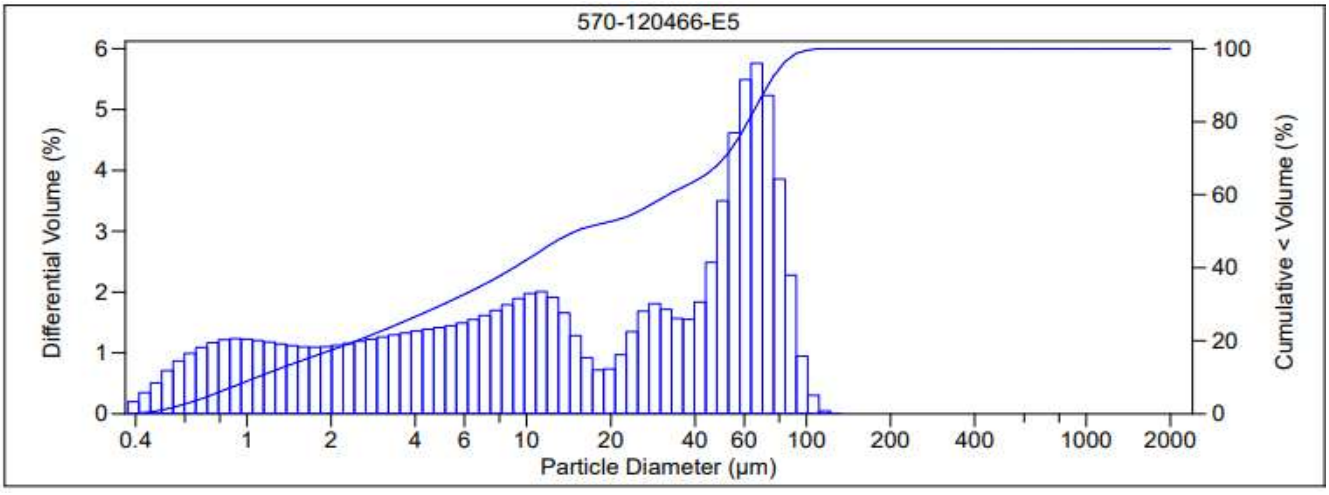
Haley & Aldrich, Inc.

Date Sampled:	12/11/22
Date Received:	12/12/22
Work Order No:	570-120466
Date Analyzed:	12/14/22
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPNDSL04_20221211		Silt	0.030

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	19.32	54.41	26.27	80.67



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

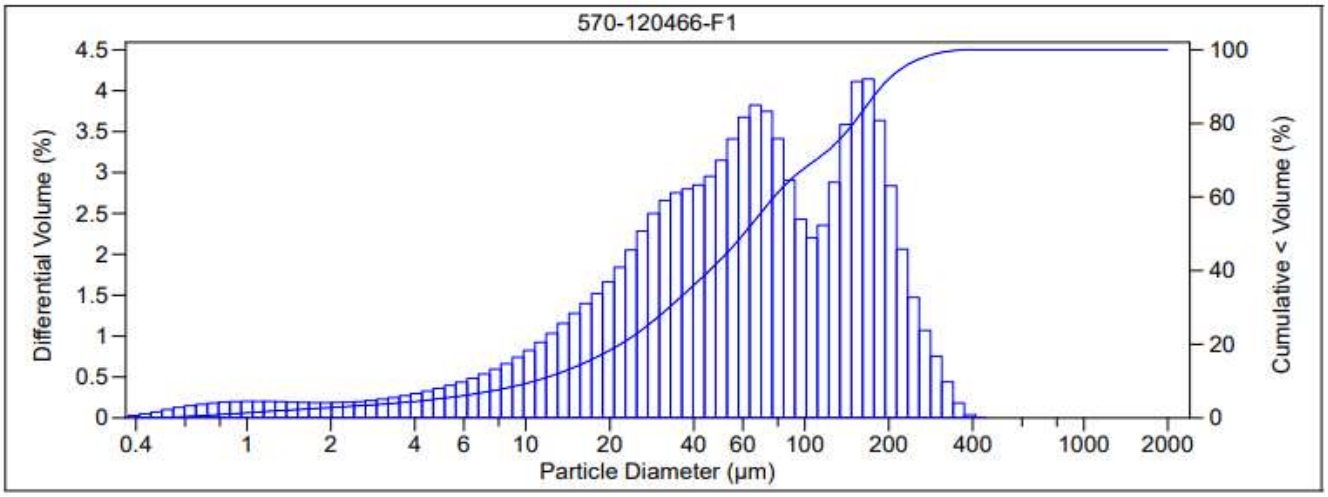
Haley & Aldrich, Inc.

Date Sampled:	12/11/22
Date Received:	12/12/22
Work Order No:	570-120466
Date Analyzed:	12/14/22
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
A1BMP0002_20221211		Very Fine Sand	0.083

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	2.93	23.51	22.24	46.91	4.40	51.31



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	12/11/22
Date Received:	12/12/22
Work Order No:	570-120466
Date Analyzed:	12/14/22
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
A1BMP0003_20221211		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

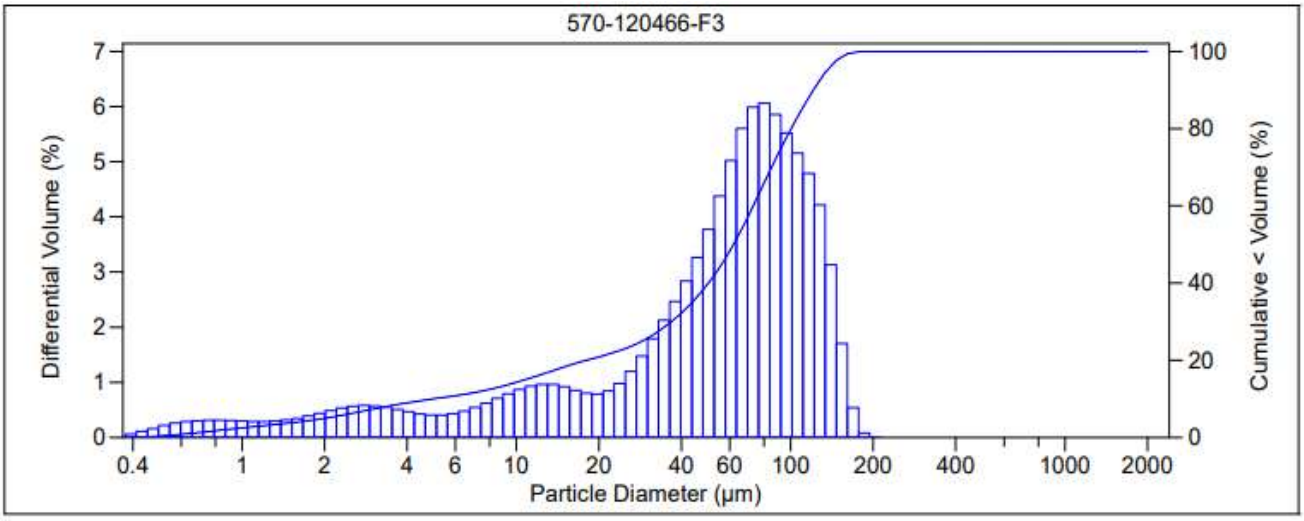
Haley & Aldrich, Inc.

Date Sampled:	12/11/22
Date Received:	12/12/22
Work Order No:	570-120466
Date Analyzed:	12/14/22
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
ILBMP0002_20221211		Very Fine Sand	0.063

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	8.56	40.91	41.67	8.87	50.54



Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-289735/1-A
Matrix: Water
Analysis Batch: 290526

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 289735

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		12/16/22 13:08	12/19/22 17:41	1
Copper	ND		2.0	0.32	ug/L		12/16/22 13:08	12/19/22 17:41	1
Lead	ND		1.0	0.12	ug/L		12/16/22 13:08	12/19/22 17:41	1

Lab Sample ID: LCS 570-289735/2-A
Matrix: Water
Analysis Batch: 290526

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 289735

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	78.5		ug/L		98	85 - 115
Copper	80.0	78.1		ug/L		98	85 - 115
Lead	80.0	80.3		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-289735/3-A
Matrix: Water
Analysis Batch: 290526

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 289735

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	79.3		ug/L		99	85 - 115	1	20
Copper	80.0	79.3		ug/L		99	85 - 115	1	20
Lead	80.0	81.5		ug/L		102	85 - 115	1	20

Lab Sample ID: 570-120466-5 MS
Matrix: Water
Analysis Batch: 290526

Client Sample ID: EPNDSW04_20221211-02
Prep Type: Total Recoverable
Prep Batch: 289735

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	80.0		ug/L		100	80 - 120
Copper	3.4		80.0	84.3		ug/L		101	80 - 120
Lead	3.6		80.0	84.3		ug/L		101	80 - 120

Lab Sample ID: 570-120466-5 MSD
Matrix: Water
Analysis Batch: 290526

Client Sample ID: EPNDSW04_20221211-02
Prep Type: Total Recoverable
Prep Batch: 289735

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	79.8		ug/L		100	80 - 120	0	20
Copper	3.4		80.0	84.9		ug/L		102	80 - 120	1	20
Lead	3.6		80.0	84.1		ug/L		101	80 - 120	0	20

Lab Sample ID: MB 570-289012/1-A
Matrix: Water
Analysis Batch: 289311

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			12/15/22 09:33	1
Copper	ND		2.0	0.32	ug/L			12/15/22 09:33	1
Lead	ND		1.0	0.12	ug/L			12/15/22 09:33	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-289012/2-A
Matrix: Water
Analysis Batch: 289311

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium			80.0	70.1		ug/L		88	85 - 115		
Copper			80.0	70.5		ug/L		88	85 - 115		
Lead			80.0	71.8		ug/L		90	85 - 115		

Lab Sample ID: LCSD 570-289012/3-A
Matrix: Water
Analysis Batch: 289311

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	69.9		ug/L		87	85 - 115	0	20
Copper			80.0	71.8		ug/L		90	85 - 115	2	20
Lead			80.0	72.2		ug/L		90	85 - 115	0	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-289857/1
Matrix: Water
Analysis Batch: 289857

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			12/16/22 17:52	1

Lab Sample ID: LCS 570-289857/2
Matrix: Water
Analysis Batch: 289857

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	96.0		mg/L		96	77 - 116		

Lab Sample ID: LCSD 570-289857/3
Matrix: Water
Analysis Batch: 289857

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.0		mg/L		96	77 - 116	0	10

Lab Sample ID: 570-120466-5 DU
Matrix: Water
Analysis Batch: 289857

Client Sample ID: EPNDSW04_20221211-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	17			17.8		mg/L				6	10

Metals

Filtration Batch: 289012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-1	A1BMP0002_20221211	Dissolved	Water	Filtration	
570-120466-2	A1BMP0003_20221211	Dissolved	Water	Filtration	
570-120466-3	ILBMP0002_20221211	Dissolved	Water	Filtration	
570-120466-4	EPNDSW04_20221211	Dissolved	Water	Filtration	
570-120466-5	EPNDSW04_20221211-02	Dissolved	Water	Filtration	
MB 570-289012/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-289012/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-289012/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 289311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-1	A1BMP0002_20221211	Dissolved	Water	200.8	289012
570-120466-2	A1BMP0003_20221211	Dissolved	Water	200.8	289012
570-120466-3	ILBMP0002_20221211	Dissolved	Water	200.8	289012
570-120466-4	EPNDSW04_20221211	Dissolved	Water	200.8	289012
570-120466-5	EPNDSW04_20221211-02	Dissolved	Water	200.8	289012
MB 570-289012/1-A	Method Blank	Dissolved	Water	200.8	289012
LCS 570-289012/2-A	Lab Control Sample	Dissolved	Water	200.8	289012
LCSD 570-289012/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	289012

Prep Batch: 289735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-1	A1BMP0002_20221211	Total Recoverable	Water	200.8	
570-120466-2	A1BMP0003_20221211	Total Recoverable	Water	200.8	
570-120466-3	ILBMP0002_20221211	Total Recoverable	Water	200.8	
570-120466-4	EPNDSW04_20221211	Total Recoverable	Water	200.8	
570-120466-5	EPNDSW04_20221211-02	Total Recoverable	Water	200.8	
MB 570-289735/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-289735/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-289735/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-120466-5 MS	EPNDSW04_20221211-02	Total Recoverable	Water	200.8	
570-120466-5 MSD	EPNDSW04_20221211-02	Total Recoverable	Water	200.8	

Analysis Batch: 290526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-1	A1BMP0002_20221211	Total Recoverable	Water	200.8	289735
570-120466-2	A1BMP0003_20221211	Total Recoverable	Water	200.8	289735
570-120466-3	ILBMP0002_20221211	Total Recoverable	Water	200.8	289735
570-120466-4	EPNDSW04_20221211	Total Recoverable	Water	200.8	289735
570-120466-5	EPNDSW04_20221211-02	Total Recoverable	Water	200.8	289735
MB 570-289735/1-A	Method Blank	Total Recoverable	Water	200.8	289735
LCS 570-289735/2-A	Lab Control Sample	Total Recoverable	Water	200.8	289735
LCSD 570-289735/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	289735
570-120466-5 MS	EPNDSW04_20221211-02	Total Recoverable	Water	200.8	289735
570-120466-5 MSD	EPNDSW04_20221211-02	Total Recoverable	Water	200.8	289735

General Chemistry

Analysis Batch: 289857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-1	A1BMP0002_20221211	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 289857 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-2	A1BMP0003_20221211	Total/NA	Water	SM 2540D	
570-120466-3	ILBMP0002_20221211	Total/NA	Water	SM 2540D	
570-120466-4	EPNDSW04_20221211	Total/NA	Water	SM 2540D	
570-120466-5	EPNDSW04_20221211-02	Total/NA	Water	SM 2540D	
MB 570-289857/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-289857/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-289857/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-120466-5 DU	EPNDSW04_20221211-02	Total/NA	Water	SM 2540D	

Geotechnical

Analysis Batch: 289052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-1	A1BMP0002_20221211	Total/NA	Water	D4464	
570-120466-2	A1BMP0003_20221211	Total/NA	Water	D4464	
570-120466-3	ILBMP0002_20221211	Total/NA	Water	D4464	
570-120466-4	EPNDSW04_20221211	Total/NA	Water	D4464	
570-120466-5	EPNDSW04_20221211-02	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-1
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: A1BMP0002_20221211
Date Collected: 12/11/22 10:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	289012	12/14/22 14:06	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			289311	12/15/22 10:20	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	289735	12/16/22 13:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			290526	12/19/22 18:11	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	600 mL	1000 mL	289857	12/16/22 17:52	U7UR	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			289052	12/14/22 12:28	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: A1BMP0003_20221211
Date Collected: 12/11/22 10:15
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	289012	12/14/22 14:06	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			289311	12/15/22 10:25	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	289735	12/16/22 13:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			290526	12/19/22 18:13	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	950 mL	1000 mL	289857	12/16/22 17:52	U7UR	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			289052	12/14/22 12:34	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: ILBMP0002_20221211
Date Collected: 12/11/22 10:00
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	289012	12/14/22 14:06	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			289311	12/15/22 10:23	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	289735	12/16/22 13:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			290526	12/19/22 18:16	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	950 mL	1000 mL	289857	12/16/22 17:52	U7UR	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			289052	12/14/22 12:41	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-120466-1
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: EPNDSW04_20221211
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	289012	12/14/22 14:06	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			289311	12/15/22 10:52	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Total Recoverable	Prep	200.8			50 mL	50 mL	289735	12/16/22 13:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			290526	12/19/22 18:18	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Total/NA	Analysis	SM 2540D		1	600 mL	1000 mL	289857	12/16/22 17:52	U7UR	EET CAL 4
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	D4464		1			289052	12/14/22 12:48	SP9M	EET CAL 4
	Instrument ID:	NOEQUIP								

Client Sample ID: EPNDSW04_20221211-02
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	289012	12/14/22 14:06	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			289311	12/15/22 10:54	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Total Recoverable	Prep	200.8			50 mL	50 mL	289735	12/16/22 13:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			290526	12/19/22 18:21	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	289857	12/16/22 17:52	U7UR	EET CAL 4
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	D4464		1			289052	12/14/22 12:54	SP9M	EET CAL 4
	Instrument ID:	NOEQUIP								

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120466-1
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-1
SDG: 001, 002, 009 and/or 11 Watersheds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120466-1	A1BMP0002_20221211	Water	12/11/22 10:30	12/12/22 17:10
570-120466-2	A1BMP0003_20221211	Water	12/11/22 10:15	12/12/22 17:10
570-120466-3	ILBMP0002_20221211	Water	12/11/22 10:00	12/12/22 17:10
570-120466-4	EPNDSW04_20221211	Water	12/11/22 07:30	12/12/22 17:10
570-120466-5	EPNDSW04_20221211-02	Water	12/11/22 07:30	12/12/22 17:10

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Thursday, December 15, 2022 7:07 AM
To: Virendra Patel; Dominick, Mark
Cc: Rapp, Kerry; Staff, Kathleen
Subject: RE: BMP / ISRA Sampling -- ECI Job#570-120466 -- Container Issues.

EXTERNAL EMAIL*

Confirmed, please proceed

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 5:38 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>; Dominick, Mark <MDominick@haleyaldrich.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: BMP / ISRA Sampling -- ECI Job#570-120466 -- Container Issues.

CAUTION: External Email

Katherine and/or Mark –

The lab had the following receipt items for the subject job: 570-120466

570-120466 –

A. The laboratory received 250 ml plastic with HNO3 instead of 250 ml unpreserved plastic container for dissolved metals analysis on the following samples:

A1BMP0002_20221211 (570-120466-1),
A1BMP0003_20221211 (570-120466-2),
ILBMP0002_20221211 (570-120466-3).

The laboratory used one of the 1 Liter ambers to pour off an aliquot for Dissolved Metals into 1 x 250ml poly unpreserved container

B. The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following samples:

A1BMP0002_20221211 (570-120466-1),
A1BMP0003_20221211 (570-120466-2),
ILBMP0002_20221211 (570-120466-3).

The laboratory used the 1 Liter ambers to pour off an aliquot for Dissolved Mercury into 1 x 250ml amber unpreserved container

Please confirm the above actions taken are acceptable and the lab is to proceed with testing.

Best Regards,

Virendra Patel
Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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1CU400

2 Storm

Chain of Custody Record for Chain of Custody Record

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

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Eurofins Calscience, Inc.

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2013-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑CALENDAR DAYS ☐WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Revised COC received from Kerry Rapp (Haley&Aldrich) on 12/19/22 at 06:20am.
- Virendra (ECI)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8, Cd, Cu, Pb (Total Recoverable)	Method 200.8, Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)					
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1-1L Poly	1-1L Poly					
A1BMP0002_20221211	12/11/22	1030	G	WM	8	Y	N	X	X	X	X	X	X	X					
A1BMP0003_20221211	12/11/22	1015	G	WM	8	Y	N	X	X	X	X	X	X	X					
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X					
B1BMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X					
B1BMP0011_			G	WM	8	Y	N	X	X	X	X	X	X	X					
LBMP0002_20221211	12/11/22	1000	G	WM	8	Y	Y	X	X	X	X	X	X	X					
LBMP0004_			G	WM	8	Y	N	X	X	X	X	X	X	X					
LBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X					
LBMP0008_			G	WM	8	Y	N	X	X	X	X	X	X	X					
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X					
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X					
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X					
LXBMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X					
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X					
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X							
EPNDSW04_20221211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X					
~~DUP01~~ EPNDSW04_20221211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X					
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X					
								4	1	2	1	1	1	1					

EPNDSW04_20221211-02

570-120466 Chain of Custody

Preservation Used: 1= Ice, 2= HC

Possible Hazard Identification.
Are any samples from a listed EPA ... or the sample in the
Comments Section if the lab is to di...

☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal

☐Return to Client ☐Disposal by Lab ☑Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com, Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

	Company	Date/Time		Date/Time
Relinquished by	Stantec	12/12/22 1210	Received by: EC	12/12/22 1310
Relinquished by	EC	12/12/22 1710	Received by: EC	12-12-22 17:10
Relinquished by			Received in Laboratory by	

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2.3|2.1, 2.0|1.8 SCN

SAP COC 2019/2020 VERSION 3

12/28/2022

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1CU400

2 Storm

Chain of Custody Record for Chain of Custody Record

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑CALENDAR DAYS ☐WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8. Cd, Cu, Pb (Total Recoverable)	Method 200.8. Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)							
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1-1L Poly	1-1L Poly							
A1BMP0002_2022 1211	12/11/22	1030	G	WM	8	Y	N	X	X	X	X	X	X	X							
A1BMP0003_2022 1211	12/11/22	0915	G	WM	8	Y	N	X	X	X	X	X	X	X							
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X							
B1BMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X							
B1BMP0011_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LBMP0002_2022 1211	12/11/22	1000	G	WM	8	Y	Y	X	X	X	X	X	X	X							
LBMP0004_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LBMP0008_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X							
LXBMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X							
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X									
EPNDSW04_2022 1211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X							
~~DUP01~~ EPNDSW04_2022 1211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X							
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X							
								4	1	2	1	1	1	1							

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

570-120466 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal
☐Return to Client ☐Disposal by Lab ☑Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com, Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

	Company	Date/Time		Date/Time
Relinquished by	[illegible]	12/12/22 1210	Received by: EC	12/12/22 1310
Relinquished by	EC	12/12/22 1710	Received by: EC	12-12-22 17:10
Relinquished by			Received in Laboratory by	

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2.3|2.1, 2.0|1.8 SCH

SAP COC 2019/2020 VERSION 3

12/28/2022

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-202233 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120466-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:				
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
A1BMP0002_20221211 (570-120466-1)	12/11/22	10 10 Pacific		Water			X	X	1	
A1BMP0003_20221211 (570-120466-2)	12/11/22	10 15 Pacific		Water			X	X	1	
ILBMP0002_20221211 (570-120466-3)	12/11/22	10 00 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 12/21/22 1232				
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120466-1
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120466
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 12/28/2022 8:33:10 AM

JOB DESCRIPTION

Boeing SSFL - BMP Performance
SDG NUMBER 001, 002, 009 and/or 11 Watersheds

JOB NUMBER

570-120466-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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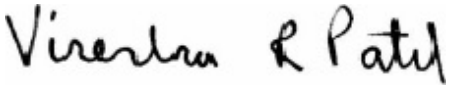
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-2
SDG: 001, 002, 009 and/or 11 Watersheds

Qualifiers

Metals

Qualifier	Qualifier Description
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120466-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120466-2

Comments
No additional comments.

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Receipt Exceptions

The laboratory received 250 ml plastic with HNO3 instead of 250 ml unpreserved plastic container for dissolved metals analysis on the following sample: A1BMP0002_20221211 (570-120466-1), A1BMP0003_20221211 (570-120466-2) and ILBMP0002_20221211 (570-120466-3). Aiquot was taken from 1L Amber glass container.

The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following sample: A1BMP0002_20221211 (570-120466-1), A1BMP0003_20221211 (570-120466-2) and ILBMP0002_20221211 (570-120466-3). Aliquott was taken from 1L Amber glass container.

The clients office was contacted with the above sample receipt anomalies. The laboratory was provided written direction on how to proceed, please refer to the COC section of the report for further details.

Metals
Method 1631E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-413631 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-2
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: A1BMP0002_20221211 — Lab Sample ID: 570-120466-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.033		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.017		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: A1BMP0003_20221211 — Lab Sample ID: 570-120466-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.015		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.012		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: ILBMP0002_20221211 — Lab Sample ID: 570-120466-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.019		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.013		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: EPNDSW04_20221211 — Lab Sample ID: 570-120466-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.018		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0098		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: EPNDSW04_20221211-02 — Lab Sample ID: 570-120466-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.016		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0095		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: A1BMP0002_20221211
Date Collected: 12/11/22 10:30
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.033		0.00050	0.000079	ug/L			12/19/22 19:13	1

Client Sample ID: A1BMP0003_20221211
Date Collected: 12/11/22 10:15
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.015		0.00050	0.000079	ug/L			12/19/22 18:10	1

Client Sample ID: ILBMP0002_20221211
Date Collected: 12/11/22 10:00
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.019		0.00050	0.000079	ug/L			12/21/22 17:19	1

Client Sample ID: EPNDSW04_20221211
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.018		0.00050	0.000079	ug/L			12/21/22 17:27	1

Client Sample ID: EPNDSW04_20221211-02
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.016		0.00050	0.000079	ug/L			12/21/22 12:20	1

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: A1BMP0002_20221211
Date Collected: 12/11/22 10:30
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.017		0.00050	0.000079	ug/L			12/19/22 19:05	1

Client Sample ID: A1BMP0003_20221211
Date Collected: 12/11/22 10:15
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.012		0.00050	0.000079	ug/L			12/19/22 18:14	1

Client Sample ID: ILBMP0002_20221211
Date Collected: 12/11/22 10:00
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.013		0.00050	0.000079	ug/L			12/21/22 17:23	1

Client Sample ID: EPNDSW04_20221211
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0098		0.00050	0.000079	ug/L			12/21/22 17:31	1

Client Sample ID: EPNDSW04_20221211-02
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0095		0.00050	0.000079	ug/L			12/21/22 17:35	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-413392/18
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			12/19/22 14:20	1

Lab Sample ID: MB 580-413392/19
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			12/19/22 14:24	1

Lab Sample ID: MB 580-413392/20
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			12/19/22 14:29	1

Lab Sample ID: LCS 580-413392/25
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00490		ug/L		98	77 - 123		

Lab Sample ID: LCSD 580-413392/26
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00488		ug/L		98	77 - 123	0	24

Lab Sample ID: 570-120461-H-1 MS
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.0076		0.0100	0.0168		ug/L		92	71 - 125		

Lab Sample ID: 570-120461-H-1 MSD
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0076		0.0100	0.0164		ug/L		88	71 - 125	2	24

Lab Sample ID: 580-121243-A-21 MS
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.19		0.300	0.441		ug/L		85	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-121243-A-21 MSD
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.19		0.300	0.440		ug/L		85	71 - 125	0	24

Lab Sample ID: MB 580-413631/23
Matrix: Water
Analysis Batch: 413631

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			12/21/22 13:01	1

Lab Sample ID: MB 580-413631/24
Matrix: Water
Analysis Batch: 413631

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			12/21/22 13:06	1

Lab Sample ID: MB 580-413631/25
Matrix: Water
Analysis Batch: 413631

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			12/21/22 13:10	1

Lab Sample ID: LCS 580-413631/31
Matrix: Water
Analysis Batch: 413631

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00439		ug/L		88	77 - 123		

Lab Sample ID: LCSD 580-413631/32
Matrix: Water
Analysis Batch: 413631

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00515		ug/L		103	77 - 123	16	24

Lab Sample ID: 570-120285-H-4 MS
Matrix: Water
Analysis Batch: 413631

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.013		0.0150	0.0230	LN	ug/L		69	71 - 125		

Lab Sample ID: 570-120285-H-4 MSD
Matrix: Water
Analysis Batch: 413631

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.013		0.0150	0.0223	LN	ug/L		64	71 - 125	3	24

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 570-120466-5 MS
Matrix: Water
Analysis Batch: 413631

Client Sample ID: EPNDSW04_20221211-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.016		0.0200	0.0358		ug/L		99	71 - 125		

Lab Sample ID: 570-120466-5 MSD
Matrix: Water
Analysis Batch: 413631

Client Sample ID: EPNDSW04_20221211-02
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.016		0.0200	0.0340		ug/L		89	71 - 125	5	24

Lab Sample ID: MB 580-413056/1-A
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			12/19/22 17:11	1

Metals

Filtration Batch: 413056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-1	A1BMP0002_20221211	Dissolved	Water	Filtration	
570-120466-2	A1BMP0003_20221211	Dissolved	Water	Filtration	
570-120466-3	ILBMP0002_20221211	Dissolved	Water	Filtration	
570-120466-4	EPNDSW04_20221211	Dissolved	Water	Filtration	
570-120466-5	EPNDSW04_20221211-02	Dissolved	Water	Filtration	
MB 580-413056/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 413392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-1	A1BMP0002_20221211	Dissolved	Water	1631E	413056
570-120466-1	A1BMP0002_20221211	Total/NA	Water	1631E	
570-120466-2	A1BMP0003_20221211	Dissolved	Water	1631E	413056
570-120466-2	A1BMP0003_20221211	Total/NA	Water	1631E	
MB 580-413056/1-A	Method Blank	Dissolved	Water	1631E	413056
MB 580-413392/18	Method Blank	Total/NA	Water	1631E	
MB 580-413392/19	Method Blank	Total/NA	Water	1631E	
MB 580-413392/20	Method Blank	Total/NA	Water	1631E	
LCS 580-413392/25	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-413392/26	Lab Control Sample Dup	Total/NA	Water	1631E	
570-120461-H-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-120461-H-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-121243-A-21 MS	Matrix Spike	Total/NA	Water	1631E	
580-121243-A-21 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Analysis Batch: 413631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-3	ILBMP0002_20221211	Dissolved	Water	1631E	413056
570-120466-3	ILBMP0002_20221211	Total/NA	Water	1631E	
570-120466-4	EPNDSW04_20221211	Dissolved	Water	1631E	413056
570-120466-4	EPNDSW04_20221211	Total/NA	Water	1631E	
570-120466-5	EPNDSW04_20221211-02	Dissolved	Water	1631E	413056
570-120466-5	EPNDSW04_20221211-02	Total/NA	Water	1631E	
MB 580-413631/23	Method Blank	Total/NA	Water	1631E	
MB 580-413631/24	Method Blank	Total/NA	Water	1631E	
MB 580-413631/25	Method Blank	Total/NA	Water	1631E	
LCS 580-413631/31	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-413631/32	Lab Control Sample Dup	Total/NA	Water	1631E	
570-120285-H-4 MS	Matrix Spike	Total/NA	Water	1631E	
570-120285-H-4 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
570-120466-5 MS	EPNDSW04_20221211-02	Total/NA	Water	1631E	
570-120466-5 MSD	EPNDSW04_20221211-02	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-2
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: A1BMP0002_20221211
Date Collected: 12/11/22 10:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	125 mL	413056	12/15/22 14:37	DRM	EET SEA
Dissolved	Analysis	1631E		1			413392	12/19/22 19:05	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			413392	12/19/22 19:13	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: A1BMP0003_20221211
Date Collected: 12/11/22 10:15
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	125 mL	413056	12/15/22 14:37	DRM	EET SEA
Dissolved	Analysis	1631E		1			413392	12/19/22 18:14	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			413392	12/19/22 18:10	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: ILBMP0002_20221211
Date Collected: 12/11/22 10:00
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	125 mL	413056	12/15/22 14:37	DRM	EET SEA
Dissolved	Analysis	1631E		1			413631	12/21/22 17:23	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			413631	12/21/22 17:19	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: EPNDSW04_20221211
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	413056	12/15/22 14:37	DRM	EET SEA
Dissolved	Analysis	1631E		1			413631	12/21/22 17:31	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			413631	12/21/22 17:27	COW	EET SEA
	Instrument ID: 2600-4									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-120466-2
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: EPNDSW04_20221211-02
Lab Sample ID: 570-120466-5

Date Collected: 12/11/22 07:30
Matrix: Water

Date Received: 12/12/22 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	413056	12/15/22 14:37	DRM	EET SEA
Dissolved	Analysis	1631E		1			413631	12/21/22 17:35	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			413631	12/21/22 12:20	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120466-2
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	P330-20-00031	12-31-22
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-2
SDG: 001, 002, 009 and/or 11 Watersheds

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-2
SDG: 001, 002, 009 and/or 11 Watersheds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120466-1	A1BMP0002_20221211	Water	12/11/22 10:30	12/12/22 17:10
570-120466-2	A1BMP0003_20221211	Water	12/11/22 10:15	12/12/22 17:10
570-120466-3	ILBMP0002_20221211	Water	12/11/22 10:00	12/12/22 17:10
570-120466-4	EPNDSW04_20221211	Water	12/11/22 07:30	12/12/22 17:10
570-120466-5	EPNDSW04_20221211-02	Water	12/11/22 07:30	12/12/22 17:10

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Thursday, December 15, 2022 7:07 AM
To: Virendra Patel; Dominick, Mark
Cc: Rapp, Kerry; Staff, Kathleen
Subject: RE: BMP / ISRA Sampling -- ECI Job#570-120466 -- Container Issues.

EXTERNAL EMAIL*

Confirmed, please proceed

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 5:38 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>; Dominick, Mark <MDominick@haleyaldrich.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: BMP / ISRA Sampling -- ECI Job#570-120466 -- Container Issues.

CAUTION: External Email

Katherine and/or Mark –

The lab had the following receipt items for the subject job: 570-120466

570-120466 –

A. The laboratory received 250 ml plastic with HNO3 instead of 250 ml unpreserved plastic container for dissolved metals analysis on the following samples:

A1BMP0002_20221211 (570-120466-1),
A1BMP0003_20221211 (570-120466-2),
ILBMP0002_20221211 (570-120466-3).

The laboratory used one of the 1 Liter ambers to pour off an aliquot for Dissolved Metals into 1 x 250ml poly unpreserved container

B. The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following samples:

A1BMP0002_20221211 (570-120466-1),
A1BMP0003_20221211 (570-120466-2),
ILBMP0002_20221211 (570-120466-3).

The laboratory used the 1 Liter ambers to pour off an aliquot for Dissolved Mercury into 1 x 250ml amber unpreserved container

Please confirm the above actions taken are acceptable and the lab is to proceed with testing.

Best Regards,

Virendra Patel
Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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Chain of Custody Record for Chain of Custody Record

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

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Eurofins Calscience, Inc.

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2013-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑CALENDAR DAYS ☐WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Revised COC received from Kerry Rapp (Haley&Aldrich) on 12/19/22 at 06:20am.
- Virendra (ECI)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8, Cd, Cu, Pb (Total Recoverable)	Method 200.8, Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1-1L Poly	1-1L Poly
A1BMP0002_20221211	12/11/22	1030	G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_20221211	12/11/22	0915	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_			G	WM	8	Y	N	X	X	X	X	X	X	X
LBMP0002_20221211	12/11/22	1000	G	WM	8	Y	Y	X	X	X	X	X	X	X
LBMP0004_			G	WM	8	Y	N	X	X	X	X	X	X	X
LBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X
LBMP0008_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_20221211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X
~~DUP01~~ EPNDSW04_20221211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X
								4	1	2	1	1	1	1

570-120466 Chain of Custody

EPNDSW04_20221211-02

Preservation Used: 1= Ice, 2= HC

Possible Hazard Identification.
Are any samples from a listed EPA ... or the sample in the
Comments Section if the lab is to di...

☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal

☐Return to Client ☐Disposal by Lab ☑Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com, Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

	Company	Date/Time		Date/Time
Relinquished by	T.H.A	12/12/22 1210	Received by: EC	12/12/22 1310
Relinquished by	EC	12/12/22 1710	Received by: EC	12-12-22 17:10
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2.3|2.1, 2.0|1.8 SCN

SAP COC 2019/2020 VERSION 3

12/28/2022

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Chain of Custody Record for Chain of Custody Record

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

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Eurofins Calscience, Inc.

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑CALENDAR DAYS ☐WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Method 200.8. Cd, Cu, Pb (Total Recoverable)	Method 200.8. Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)						
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1-1L Poly	1-1L Poly						
A1BMP0002_20221211	12/11/22	1030	G	WM	8	Y	N	X	X	X	X	X	X	X						
A1BMP0003_20221211	12/11/22	0915	G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0011_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0002_20221211	12/11/22	1000	G	WM	8	Y	Y	X	X	X	X	X	X	X						
LBMP0004_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0008_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X						
LXBMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X						
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X								
EPNDSW04_20221211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X						
~~DUP01~~ EPNDSW04_20221211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X						
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X						
								4	1	2	1	1	1	1						

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

570-120466 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal
☐Return to Client ☐Disposal by Lab ☑Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com, Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

	Company	Date/Time		Date/Time
Relinquished by	[illegible]	12/12/22 1210	Received by: EC	12/12/22 1310
Relinquished by	EC	12/12/22 1710	Received by: EC	12-12-22 17:10
Relinquished by			Received in Laboratory by	

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2.3|2.1, 2.0|1.8 SCM

SAP COC 2019/2020 VERSION 3

12/28/2022

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-202233 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120466-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:				
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
A1BMP0002_20221211 (570-120466-1)	12/11/22	10 10 Pacific		Water			X	X	1	
A1BMP0003_20221211 (570-120466-2)	12/11/22	10 15 Pacific		Water			X	X	1	
ILBMP0002_20221211 (570-120466-3)	12/11/22	10:00 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/21/22 1232				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

12/28/2022

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201267.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120466-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
A1BMP002_20221211 (570-120466-1)	12/11/22	10:10 Pacific		Water			X	X	1	
A1BMP003_20221211 (570-120466-2)	12/11/22	10:15 Pacific		Water			X	X	1	
ILBMP002_20221211 (570-120466-3)	12/11/22	10:00 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 12/14/22 13:15	Company EC	Received by:	Date/Time: 12/15/22 9:30	Company FEDEX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: NO	Cooler Temperature(s) °C and Other Remarks: -0.5 0.3 -1.1

Blue Ice

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201223.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120466-2
Address: 5755 8th Street East,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
A1BMP002_20221211 (570-120466-1)	12/11/22	10:10 Pacific		Water			X	X	1	
A1BMP003_20221211 (570-120466-2)	12/11/22	10:15 Pacific		Water			X	X	1	
ILBMP002_20221211 (570-120466-3)	12/11/22	10:00 Pacific		Water			X	X	1	
EPNDSW04_20221211 (570-120466-4)	12/11/22	07:30 Pacific		Water			X	X	2	
EPNDSL04_20221211 (570-120466-5)	12/11/22	08:30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 12/14/22 10:50	Company EC	Received by:	Date/Time: 12/15/22 9:30	Company FEDEX
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: NA	Cooler Temperature(s) °C and Other Remarks: -0.2 Blue Ice 0.7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201267.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120466-2
Address: 5755 8th Street East,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note:
A1BMP002_20221211 (570-120466-1)	12/11/22	10:10 Pacific		Water				X	X	1	
A1BMP003_20221211 (570-120466-2)	12/11/22	10:15 Pacific		Water				X	X	1	
ILBMP002_20221211 (570-120466-3)	12/11/22	10:00 Pacific		Water				X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12/14/22 13:15	EC		12/15/22 9:30	ECL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: ND | Cooler Temperature(s) °C and Other Remarks: 0.5 0.3 1.1 Blue Ice

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201223.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120466-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
A1BMP002_20221211 (570-120466-1)	12/11/22	10:10 Pacific		Water			X	X	1	
A1BMP003_20221211 (570-120466-2)	12/11/22	10:15 Pacific		Water			X	X	1	
ILBMP002_20221211 (570-120466-3)	12/11/22	10:00 Pacific		Water			X	X	1	
EPNDSW04_20221211 (570-120466-4)	12/11/22	07:30 Pacific		Water			X	X	2	
EPNDSL04_20221211 (570-120466-5)	12/11/22	08:30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	12/14/22 10:50	EC	[signature]	12/15/22 9:30	[illegible]

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: NP Ly Bloc Ice | Cooler Temperature(s) °C and Other Remarks: -0.2 Dry 2 0.7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-202233.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120466-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL - BMP Performance	SSOW#:			
Site:				

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note:
		Preservation Code:								
A1BMP0002_20221211 (570-120466-1)	12/11/22	10:10 Pacific		Water			X	X	1	
A1BMP0003_20221211 (570-120466-2)	12/11/22	10:15 Pacific		Water			X	X	1	
ILBMP0002_20221211 (570-120466-3)	12/11/22	10:00 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 12/21/22 1232	Company	Received by:	Date/Time: 12/22/22 10:30	Company EFGS	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 6226 1904 5944
Cooler Temperature(s) °C and Other Remarks: 5m Blue -0.1 Dig 4 0.2

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120466-2
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120466
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120466-2
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120466
List Number: 3
Creator: Williams, Clifford O

List Source: Eurofins Seattle
List Creation: 12/16/22 12:04 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL - BMP Performance
SDG NUMBER 001, 002, 009 and/or 11 Watersheds

JOB NUMBER

570-120466-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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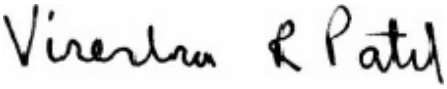
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
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(714)895-5494

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Definitions/Glossary

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120466-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120466-3

Comments
No additional comments.

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Receipt Exceptions

The laboratory received 250 ml plastic with HNO3 instead of 250 ml unpreserved plastic container for dissolved metals analysis on the following sample: A1BMP0002_20221211 (570-120466-1), A1BMP0003_20221211 (570-120466-2) and ILBMP0002_20221211 (570-120466-3). Aiquot was taken from 1L Amber glass container.

The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following sample: A1BMP0002_20221211 (570-120466-1), A1BMP0003_20221211 (570-120466-2) and ILBMP0002_20221211 (570-120466-3). Aliquott was taken from 1L Amber glass container.

The clients office was contacted with the above sample receipt anomalies. The laboratory was provided written direction on how to proceed, please refer to the COC section of the report for further details.

Dioxin
Method 1613B: The continuing calibration verification (CCV) associated with batch 320-648563 recovered above the upper control limit for 2,3,7,8-TCDF. The samples associated with this CCV had no detection over the reporting limit (RL) for the affected analyte and samples with any estimated detections below the reporting limit were analyzed on a second column for confirmation; therefore, the data have been reported.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: EPNDSW04_20221211-02 (570-120466-5), (CCV 320-648980/2) and (MB 320-644230/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: The continuing calibration verification (CCV) associated with batch 320-648980 recovered above the upper control limit for the surrogate 37Cl4-2,3,7,8-TCDD. The surrogate is not used in the quantitation of any target analytes but used to monitor the efficiency of any cleanup steps done during the extraction process. The samples associated with this CCV were within limits for the surrogate; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
Method 1613B: Elevated reporting limits are provided for the following samples due to insufficient sample provided for preparation: A1BMP0003_20221211 (570-120466-2), ILBMP0002_20221211 (570-120466-3) and EPNDSW04_20221211-02 (570-120466-5). Nominal volume is 1L.

preparation batch 320-644230
Method: 1613B_Sox_Sep_P
Matrix: Water

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-3
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: A1BMP0002_20221211 — Lab Sample ID: 570-120466-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000024	J,DX MB	0.000052	0.00000013	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000097	J,DX MB q	0.000052	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000011	J,DX MB q	0.000052	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000041	J,DX MB q	0.000052	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000083	J,DX MB	0.000052	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000012	J,DX MB	0.000052	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000048	J,DX MB	0.000052	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000020	J,DX MB	0.000052	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000093	J,DX MB q	0.000052	0.00000015	ug/L	1		1613B	Total/NA
OCDD	0.000034	J,DX MB	0.00010	0.00000041	ug/L	1		1613B	Total/NA
OCDF	0.0000039	J,DX MB	0.00010	0.00000027	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000051	J,DX MB q	0.000052	0.00000012	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000034	J,DX MB q	0.000052	0.00000013	ug/L	1		1613B	Total/NA
Total HpCDD	0.000010	J,DX MB	0.000052	0.00000018	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000044	J,DX MB q	0.000052	0.00000014	ug/L	1		1613B	Total/NA

Client Sample ID: A1BMP0003_20221211 — Lab Sample ID: 570-120466-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000025	J,DX MB	0.000055	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000016	J,DX MB	0.000055	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000010	J,DX MB	0.000055	0.00000013	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000017	J,DX MB	0.000055	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000012	J,DX MB	0.000055	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000011	J,DX MB q	0.000055	0.00000015	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000076	J,DX MB	0.000055	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000011	J,DX MB	0.000055	0.00000030	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000070	J,DX MB	0.000055	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000011	J,DX MB	0.000055	0.00000017	ug/L	1		1613B	Total/NA
OCDD	0.000088	J,DX MB	0.00011	0.00000049	ug/L	1		1613B	Total/NA
OCDF	0.000012	J,DX MB	0.00011	0.00000047	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: A1BMP0003_20221211 (Continued)
Lab Sample ID: 570-120466-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total HxCDD	0.0000081	J,DX MB q	0.000055	0.00000013	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000079	J,DX MB q	0.000055	0.00000014	ug/L	1		1613B	Total/NA
Total HpCDD	0.000021	J,DX MB q	0.000055	0.00000030	ug/L	1		1613B	Total/NA
Total HpCDF	0.000012	J,DX MB	0.000055	0.00000015	ug/L	1		1613B	Total/NA

Client Sample ID: ILBMP0002_20221211
Lab Sample ID: 570-120466-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000030	J,DX MB	0.000057	0.00000089	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000020	J,DX MB	0.000057	0.00000010	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000023	J,DX MB q	0.000057	0.00000086	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000010	J,DX MB q	0.000057	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000090	J,DX MB	0.000057	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000099	J,DX MB q	0.000057	0.00000012	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000087	J,DX MB q	0.000057	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000024	J,DX MB	0.000057	0.00000032	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000011	J,DX MB	0.000057	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000011	J,DX MB	0.000057	0.00000018	ug/L	1		1613B	Total/NA
OCDD	0.00019	MB	0.00011	0.00000051	ug/L	1		1613B	Total/NA
OCDF	0.000026	J,DX MB	0.00011	0.00000035	ug/L	1		1613B	Total/NA
Total HxCDD	0.000014	J,DX MB q	0.000057	0.00000086	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000097	J,DX MB q	0.000057	0.00000012	ug/L	1		1613B	Total/NA
Total HpCDD	0.000049	J,DX MB	0.000057	0.00000032	ug/L	1		1613B	Total/NA
Total HpCDF	0.000022	J,DX MB q	0.000057	0.00000018	ug/L	1		1613B	Total/NA

Client Sample ID: EPNDSW04_20221211
Lab Sample ID: 570-120466-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000031	J,DX MB	0.000052	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000039	J,DX q MB	0.000052	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000042	J,DX MB	0.000052	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000014	J,DX q MB	0.000052	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000012	J,DX MB	0.000052	0.00000014	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPNDSW04_20221211 (Continued)
Lab Sample ID: 570-120466-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8,9-HxCDF	0.0000016	J,DX MB	0.000052	0.00000015	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000086	J,DX MB	0.000052	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000089	MB	0.000052	0.00000053	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000020	J,DX MB	0.000052	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000018	J,DX q MB	0.000052	0.00000027	ug/L	1		1613B	Total/NA
OCDD	0.0012	MB	0.00010	0.0000012	ug/L	1		1613B	Total/NA
OCDF	0.000047	J,DX MB	0.00010	0.00000039	ug/L	1		1613B	Total/NA
Total HxCDD	0.000029	J,DX q MB	0.000052	0.00000020	ug/L	1		1613B	Total/NA
Total HxCDF	0.000019	J,DX q MB	0.000052	0.00000014	ug/L	1		1613B	Total/NA
Total HpCDD	0.00021	MB	0.000052	0.00000053	ug/L	1		1613B	Total/NA
Total HpCDF	0.000051	J,DX q MB	0.000052	0.00000024	ug/L	1		1613B	Total/NA

Client Sample ID: EPNDSW04_20221211-02
Lab Sample ID: 570-120466-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000012	J,DX MB	0.000056	0.00000026	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000014	J,DX q	0.000056	0.00000029	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000032	J,DX MB	0.000056	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000059	J,DX MB	0.000056	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000039	J,DX MB	0.000056	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000029	J,DX MB	0.000056	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000023	J,DX MB	0.000056	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000019	J,DX MB q	0.000056	0.00000026	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000023	J,DX MB q	0.000056	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00010	MB	0.000056	0.00000063	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000027	J,DX MB	0.000056	0.00000029	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000023	J,DX MB	0.000056	0.00000033	ug/L	1		1613B	Total/NA
OCDD	0.0014	MB	0.00011	0.0000013	ug/L	1		1613B	Total/NA
OCDF	0.000054	J,DX MB	0.00011	0.00000041	ug/L	1		1613B	Total/NA
Total TCDF	0.0000093	J,DX MB q	0.000011	0.00000035	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000097	J,DX MB q	0.000056	0.00000026	ug/L	1		1613B	Total/NA
Total HxCDD	0.000037	J,DX MB q	0.000056	0.00000015	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPNDSW04_20221211-02 (Continued)
Lab Sample ID: 570-120466-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total HxCDF	0.000027	J,DX MB q	0.000056	0.00000023	ug/L	1		1613B	Total/NA
Total HpCDD	0.00023	MB	0.000056	0.00000063	ug/L	1		1613B	Total/NA
Total HpCDF	0.000061	MB q	0.000056	0.00000029	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: A1BMP0002_20221211
Date Collected: 12/11/22 10:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000024	ug/L		01/03/23 13:01	01/21/23 06:22	1
2,3,7,8-TCDF	ND		0.000010	0.00000074	ug/L		01/03/23 13:01	01/21/23 06:22	1
1,2,3,7,8-PeCDD	ND		0.000052	0.00000015	ug/L		01/03/23 13:01	01/21/23 06:22	1
1,2,3,7,8-PeCDF	ND		0.000052	0.00000058	ug/L		01/03/23 13:01	01/21/23 06:22	1
2,3,4,7,8-PeCDF	ND		0.000052	0.00000066	ug/L		01/03/23 13:01	01/21/23 06:22	1
1,2,3,4,7,8-HxCDD	**0.0000024**	**J,DX MB**	0.000052	0.00000013	ug/L		01/03/23 13:01	01/21/23 06:22	1
1,2,3,6,7,8-HxCDD	**0.00000097**	**J,DX MB q**	0.000052	0.00000014	ug/L		01/03/23 13:01	01/21/23 06:22	1
1,2,3,7,8,9-HxCDD	**0.0000011**	**J,DX MB q**	0.000052	0.00000012	ug/L		01/03/23 13:01	01/21/23 06:22	1
1,2,3,4,7,8-HxCDF	**0.00000041**	**J,DX MB q**	0.000052	0.00000015	ug/L		01/03/23 13:01	01/21/23 06:22	1
1,2,3,6,7,8-HxCDF	**0.00000083**	**J,DX MB**	0.000052	0.00000015	ug/L		01/03/23 13:01	01/21/23 06:22	1
1,2,3,7,8,9-HxCDF	**0.0000012**	**J,DX MB**	0.000052	0.00000014	ug/L		01/03/23 13:01	01/21/23 06:22	1
2,3,4,6,7,8-HxCDF	ND		0.000052	0.00000013	ug/L		01/03/23 13:01	01/21/23 06:22	1
1,2,3,4,6,7,8-HpCDD	**0.0000048**	**J,DX MB**	0.000052	0.00000018	ug/L		01/03/23 13:01	01/21/23 06:22	1
1,2,3,4,6,7,8-HpCDF	**0.0000020**	**J,DX MB**	0.000052	0.00000014	ug/L		01/03/23 13:01	01/21/23 06:22	1
1,2,3,4,7,8,9-HpCDF	**0.00000093**	**J,DX MB q**	0.000052	0.00000015	ug/L		01/03/23 13:01	01/21/23 06:22	1
OCDD	**0.000034**	**J,DX MB**	0.00010	0.00000041	ug/L		01/03/23 13:01	01/21/23 06:22	1
OCDF	**0.0000039**	**J,DX MB**	0.00010	0.00000027	ug/L		01/03/23 13:01	01/21/23 06:22	1
Total TCDD	ND		0.000010	0.00000024	ug/L		01/03/23 13:01	01/21/23 06:22	1
Total TCDF	ND		0.000010	0.00000074	ug/L		01/03/23 13:01	01/21/23 06:22	1
Total PeCDD	ND		0.000052	0.00000015	ug/L		01/03/23 13:01	01/21/23 06:22	1
Total PeCDF	ND		0.000052	0.00000058	ug/L		01/03/23 13:01	01/21/23 06:22	1
Total HxCDD	**0.0000051**	**J,DX MB q**	0.000052	0.00000012	ug/L		01/03/23 13:01	01/21/23 06:22	1
Total HxCDF	**0.0000034**	**J,DX MB q**	0.000052	0.00000013	ug/L		01/03/23 13:01	01/21/23 06:22	1
Total HpCDD	**0.000010**	**J,DX MB**	0.000052	0.00000018	ug/L		01/03/23 13:01	01/21/23 06:22	1
Total HpCDF	**0.0000044**	**J,DX MB q**	0.000052	0.00000014	ug/L		01/03/23 13:01	01/21/23 06:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*75*		*26 - 145*	*/ 10/ 3023 13:/ 1*	*/ 10/ 2123 / 4:22*	*1*
13C-2,3,7,8-TCDF	*49*		*25 - 149*	*/ 10/ 3023 13:/ 1*	*/ 10/ 2123 / 4:22*	*1*
13C-1,2,3,7,8-PeCDD	*86*		*26 - 181*	*/ 10/ 3023 13:/ 1*	*/ 10/ 2123 / 4:22*	*1*
13C-1,2,3,7,8-PeCDF	*8/*		*25 - 186*	*/ 10/ 3023 13:/ 1*	*/ 10/ 2123 / 4:22*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: A1BMP0002_20221211
Date Collected: 12/11/22 10:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,5,7,8-PeCDF	76		21 - 178	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1
13C-1,2,3,5,7,8-HxCDD	85		32 - 151	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1
13C-1,2,3,4,7,8-HxCDD	72		28 - 13/	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1
13C-1,2,3,5,7,8-HxCDF	86		24 - 162	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1
13C-1,2,3,4,7,8-HxCDF	81		24 - 123	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1
13C-1,2,3,7,8,9-HxCDF	89		29 - 157	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1
13C-2,3,5,4,7,8-HxCDF	91		28 - 134	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1
13C-1,2,3,5,4,7,8-HpCDD	95		23 - 15/	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1
13C-1,2,3,5,4,7,8-HpCDF	83		28 - 153	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1
13C-1,2,3,5,7,8,9-HpCDF	98		24 - 138	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1
13C-OCDD	99		17 - 167	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1
13C-OCDF	1/ 7		17 - 167	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl5-2,3,7,8-TCDD	91		36 - 197	/ 10/ 3023 13:/ 1	/ 10/21/23 / 4:22	1

Client Sample ID: A1BMP0003_20221211
Date Collected: 12/11/22 10:15
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000027	ug/L		01/03/23 13:01	01/21/23 07:10	1
2,3,7,8-TCDF	ND		0.000011	0.00000010	ug/L		01/03/23 13:01	01/21/23 07:10	1
1,2,3,7,8-PeCDD	ND		0.000055	0.00000038	ug/L		01/03/23 13:01	01/21/23 07:10	1
1,2,3,7,8-PeCDF	ND		0.000055	0.00000015	ug/L		01/03/23 13:01	01/21/23 07:10	1
2,3,4,7,8-PeCDF	ND		0.000055	0.00000016	ug/L		01/03/23 13:01	01/21/23 07:10	1
1,2,3,4,7,8-HxCDD	**0.0000025**	**J,DX MB**	0.000055	0.00000014	ug/L		01/03/23 13:01	01/21/23 07:10	1
1,2,3,6,7,8-HxCDD	**0.0000016**	**J,DX MB**	0.000055	0.00000016	ug/L		01/03/23 13:01	01/21/23 07:10	1
1,2,3,7,8,9-HxCDD	**0.0000010**	**J,DX MB**	0.000055	0.00000013	ug/L		01/03/23 13:01	01/21/23 07:10	1
1,2,3,4,7,8-HxCDF	**0.0000017**	**J,DX MB**	0.000055	0.00000015	ug/L		01/03/23 13:01	01/21/23 07:10	1
1,2,3,6,7,8-HxCDF	**0.0000012**	**J,DX MB**	0.000055	0.00000015	ug/L		01/03/23 13:01	01/21/23 07:10	1
1,2,3,7,8,9-HxCDF	**0.0000011**	**J,DX MB q**	0.000055	0.00000015	ug/L		01/03/23 13:01	01/21/23 07:10	1
2,3,4,6,7,8-HxCDF	**0.00000076**	**J,DX MB**	0.000055	0.00000014	ug/L		01/03/23 13:01	01/21/23 07:10	1
1,2,3,4,6,7,8-HpCDD	**0.000011**	**J,DX MB**	0.000055	0.00000030	ug/L		01/03/23 13:01	01/21/23 07:10	1
1,2,3,4,6,7,8-HpCDF	**0.0000070**	**J,DX MB**	0.000055	0.00000015	ug/L		01/03/23 13:01	01/21/23 07:10	1
1,2,3,4,7,8,9-HpCDF	**0.0000011**	**J,DX MB**	0.000055	0.00000017	ug/L		01/03/23 13:01	01/21/23 07:10	1
OCDD	**0.000088**	**J,DX MB**	0.00011	0.00000049	ug/L		01/03/23 13:01	01/21/23 07:10	1
OCDF	**0.000012**	**J,DX MB**	0.00011	0.00000047	ug/L		01/03/23 13:01	01/21/23 07:10	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: A1BMP0003_20221211
Date Collected: 12/11/22 10:15
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDD	ND		0.000011	0.00000027	ug/L		01/03/23 13:01	01/21/23 07:10	1
Total TCDF	ND		0.000011	0.00000010	ug/L		01/03/23 13:01	01/21/23 07:10	1
Total PeCDD	ND		0.000055	0.00000038	ug/L		01/03/23 13:01	01/21/23 07:10	1
Total PeCDF	ND		0.000055	0.00000015	ug/L		01/03/23 13:01	01/21/23 07:10	1
Total HxCDD	**0.0000081**	**J,DX MB q**	0.000055	0.00000013	ug/L		01/03/23 13:01	01/21/23 07:10	1
Total HxCDF	**0.0000079**	**J,DX MB q**	0.000055	0.00000014	ug/L		01/03/23 13:01	01/21/23 07:10	1
Total HpCDD	**0.000021**	**J,DX MB q**	0.000055	0.00000030	ug/L		01/03/23 13:01	01/21/23 07:10	1
Total HpCDF	**0.000012**	**J,DX MB**	0.000055	0.00000015	ug/L		01/03/23 13:01	01/21/23 07:10	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*49*		*26 - 145*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-2,3,7,8-TCDF	*46*		*25 - 149*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-1,2,3,7,8-PeCDD	*8/*		*26 - 181*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-1,2,3,7,8-PeCDF	*74*		*25 - 186*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-2,3,5,7,8-PeCDF	*75*		*21 - 178*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-1,2,3,5,7,8-HxCDD	*89*		*32 - 151*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-1,2,3,4,7,8-HxCDD	*76*		*28 - 13/*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-1,2,3,5,7,8-HxCDF	*88*		*24 - 162*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-1,2,3,4,7,8-HxCDF	*85*		*24 - 123*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-1,2,3,7,8,9-HxCDF	*86*		*29 - 157*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-2,3,5,4,7,8-HxCDF	*89*		*28 - 134*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-1,2,3,5,4,7,8-HpCDD	*96*		*23 - 15/*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-1,2,3,5,4,7,8-HpCDF	*86*		*28 - 153*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-1,2,3,5,7,8,9-HpCDF	*96*		*24 - 138*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-OCDD	*98*		*17 - 167*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*
13C-OCDF	*1/ 6*		*17 - 167*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl5-2,3,7,8-TCDD	*9/*		*36 - 197*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 7:1/*	*1*

Client Sample ID: ILBMP0002_20221211
Date Collected: 12/11/22 10:00
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000031	ug/L		01/03/23 13:01	01/21/23 07:59	1
2,3,7,8-TCDF	ND		0.000011	0.00000012	ug/L		01/03/23 13:01	01/21/23 07:59	1
1,2,3,7,8-PeCDD	ND		0.000057	0.00000019	ug/L		01/03/23 13:01	01/21/23 07:59	1
1,2,3,7,8-PeCDF	ND		0.000057	0.00000098	ug/L		01/03/23 13:01	01/21/23 07:59	1
2,3,4,7,8-PeCDF	ND		0.000057	0.00000011	ug/L		01/03/23 13:01	01/21/23 07:59	1
1,2,3,4,7,8-HxCDD	**0.0000030**	**J,DX MB**	0.000057	0.00000089	ug/L		01/03/23 13:01	01/21/23 07:59	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: ILBMP0002_20221211
Date Collected: 12/11/22 10:00
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,6,7,8-HxCDD	0.0000020	J,DX MB	0.000057	0.00000010	ug/L		01/03/23 13:01	01/21/23 07:59	1
1,2,3,7,8,9-HxCDD	0.0000023	J,DX MB q	0.000057	0.00000086	ug/L		01/03/23 13:01	01/21/23 07:59	1
1,2,3,4,7,8-HxCDF	0.0000010	J,DX MB q	0.000057	0.00000012	ug/L		01/03/23 13:01	01/21/23 07:59	1
1,2,3,6,7,8-HxCDF	0.00000090	J,DX MB	0.000057	0.00000012	ug/L		01/03/23 13:01	01/21/23 07:59	1
1,2,3,7,8,9-HxCDF	0.00000099	J,DX MB q	0.000057	0.00000012	ug/L		01/03/23 13:01	01/21/23 07:59	1
2,3,4,6,7,8-HxCDF	0.00000087	J,DX MB q	0.000057	0.00000012	ug/L		01/03/23 13:01	01/21/23 07:59	1
1,2,3,4,6,7,8-HpCDD	0.000024	J,DX MB	0.000057	0.00000032	ug/L		01/03/23 13:01	01/21/23 07:59	1
1,2,3,4,6,7,8-HpCDF	0.000011	J,DX MB	0.000057	0.00000018	ug/L		01/03/23 13:01	01/21/23 07:59	1
1,2,3,4,7,8,9-HpCDF	0.0000011	J,DX MB	0.000057	0.00000018	ug/L		01/03/23 13:01	01/21/23 07:59	1
OCDD	0.00019	MB	0.00011	0.00000051	ug/L		01/03/23 13:01	01/21/23 07:59	1
OCDF	0.000026	J,DX MB	0.00011	0.00000035	ug/L		01/03/23 13:01	01/21/23 07:59	1
Total TCDD	ND		0.000011	0.00000031	ug/L		01/03/23 13:01	01/21/23 07:59	1
Total TCDF	ND		0.000011	0.00000012	ug/L		01/03/23 13:01	01/21/23 07:59	1
Total PeCDD	ND		0.000057	0.00000019	ug/L		01/03/23 13:01	01/21/23 07:59	1
Total PeCDF	ND		0.000057	0.00000098	ug/L		01/03/23 13:01	01/21/23 07:59	1
Total HxCDD	0.000014	J,DX MB q	0.000057	0.00000086	ug/L		01/03/23 13:01	01/21/23 07:59	1
Total HxCDF	0.0000097	J,DX MB q	0.000057	0.00000012	ug/L		01/03/23 13:01	01/21/23 07:59	1
Total HpCDD	0.000049	J,DX MB	0.000057	0.00000032	ug/L		01/03/23 13:01	01/21/23 07:59	1
Total HpCDF	0.000022	J,DX MB q	0.000057	0.00000018	ug/L		01/03/23 13:01	01/21/23 07:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*26 - 145*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-2,3,7,8-TCDF	*48*		*25 - 149*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-1,2,3,7,8-PeCDD	*84*		*26 - 181*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-1,2,3,7,8-PeCDF	*8/*		*25 - 186*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-2,3,5,7,8-PeCDF	*81*		*21 - 178*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-1,2,3,5,7,8-HxCDD	*93*		*32 - 151*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-1,2,3,4,7,8-HxCDD	*8/*		*28 - 13/*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-1,2,3,5,7,8-HxCDF	*96*		*24 - 162*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-1,2,3,4,7,8-HxCDF	*89*		*24 - 123*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-1,2,3,7,8,9-HxCDF	*93*		*29 - 157*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-2,3,5,4,7,8-HxCDF	*95*		*28 - 134*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-1,2,3,5,4,7,8-HpCDD	*1/ 2*		*23 - 15/*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-1,2,3,5,4,7,8-HpCDF	*91*		*28 - 153*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-1,2,3,5,7,8,9-HpCDF	*1/ 5*		*24 - 138*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*
13C-OCDD	*1/ 9*		*17 - 167*	*/ 10/ 3023 13:/ 1*	*/ 10/21/23 7:/ 69*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: ILBMP0002_20221211
Date Collected: 12/11/22 10:00
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-3
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-OCDF	*117*		*17 - 167*	*/ 10/ 3023 13:/ 1*	*/ 10/ 2123 / 7:69*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl5-2,3,7,8-TCDD	*88*		*36 - 197*	*/ 10/ 3023 13:/ 1*	*/ 10/ 2123 / 7:69*	*1*

Client Sample ID: EPNDSW04_20221211
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-4
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000039	ug/L		01/03/23 13:01	01/21/23 08:47	1
2,3,7,8-TCDF	ND		0.000010	0.00000063	ug/L		01/03/23 13:01	01/21/23 08:47	1
1,2,3,7,8-PeCDD	ND		0.000052	0.00000024	ug/L		01/03/23 13:01	01/21/23 08:47	1
1,2,3,7,8-PeCDF	ND		0.000052	0.00000010	ug/L		01/03/23 13:01	01/21/23 08:47	1
2,3,4,7,8-PeCDF	ND		0.000052	0.00000012	ug/L		01/03/23 13:01	01/21/23 08:47	1
1,2,3,4,7,8-HxCDD	**0.0000031**	**J,DX MB**	0.000052	0.00000021	ug/L		01/03/23 13:01	01/21/23 08:47	1
1,2,3,6,7,8-HxCDD	**0.0000039**	**J,DX q MB**	0.000052	0.00000023	ug/L		01/03/23 13:01	01/21/23 08:47	1
1,2,3,7,8,9-HxCDD	**0.0000042**	**J,DX MB**	0.000052	0.00000020	ug/L		01/03/23 13:01	01/21/23 08:47	1
1,2,3,4,7,8-HxCDF	**0.0000014**	**J,DX q MB**	0.000052	0.00000014	ug/L		01/03/23 13:01	01/21/23 08:47	1
1,2,3,6,7,8-HxCDF	**0.0000012**	**J,DX MB**	0.000052	0.00000014	ug/L		01/03/23 13:01	01/21/23 08:47	1
1,2,3,7,8,9-HxCDF	**0.0000016**	**J,DX MB**	0.000052	0.00000015	ug/L		01/03/23 13:01	01/21/23 08:47	1
2,3,4,6,7,8-HxCDF	**0.00000086**	**J,DX MB**	0.000052	0.00000014	ug/L		01/03/23 13:01	01/21/23 08:47	1
1,2,3,4,6,7,8-HpCDD	**0.000089**	**MB**	0.000052	0.00000053	ug/L		01/03/23 13:01	01/21/23 08:47	1
1,2,3,4,6,7,8-HpCDF	**0.000020**	**J,DX MB**	0.000052	0.00000024	ug/L		01/03/23 13:01	01/21/23 08:47	1
1,2,3,4,7,8,9-HpCDF	**0.0000018**	**J,DX q MB**	0.000052	0.00000027	ug/L		01/03/23 13:01	01/21/23 08:47	1
OCDD	**0.0012**	**MB**	0.00010	0.0000012	ug/L		01/03/23 13:01	01/21/23 08:47	1
OCDF	**0.000047**	**J,DX MB**	0.00010	0.00000039	ug/L		01/03/23 13:01	01/21/23 08:47	1
Total TCDD	ND		0.000010	0.00000039	ug/L		01/03/23 13:01	01/21/23 08:47	1
Total TCDF	ND		0.000010	0.00000063	ug/L		01/03/23 13:01	01/21/23 08:47	1
Total PeCDD	ND		0.000052	0.00000024	ug/L		01/03/23 13:01	01/21/23 08:47	1
Total PeCDF	ND		0.000052	0.00000010	ug/L		01/03/23 13:01	01/21/23 08:47	1
Total HxCDD	**0.000029**	**J,DX q MB**	0.000052	0.00000020	ug/L		01/03/23 13:01	01/21/23 08:47	1
Total HxCDF	**0.000019**	**J,DX q MB**	0.000052	0.00000014	ug/L		01/03/23 13:01	01/21/23 08:47	1
Total HpCDD	**0.00021**	**MB**	0.000052	0.00000053	ug/L		01/03/23 13:01	01/21/23 08:47	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPNDSW04_20221211
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-4
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDF	**0.000051**	**J,DX q MB**	0.000052	0.00000024	ug/L		01/03/23 13:01	01/21/23 08:47	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*26 - 145*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-2,3,7,8-TCDF	*7/*		*25 - 149*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-1,2,3,7,8-PeCDD	*9/*		*26 - 181*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-1,2,3,7,8-PeCDF	*82*		*25 - 186*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-2,3,5,7,8-PeCDF	*81*		*21 - 178*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-1,2,3,5,7,8-HxCDD	*98*		*32 - 151*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-1,2,3,4,7,8-HxCDD	*87*		*28 - 13/*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-1,2,3,5,7,8-HxCDF	*98*		*24 - 162*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-1,2,3,4,7,8-HxCDF	*97*		*24 - 123*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-1,2,3,7,8,9-HxCDF	*94*		*29 - 157*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-2,3,5,4,7,8-HxCDF	*1/ 2*		*28 - 134*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-1,2,3,5,4,7,8-HpCDD	*1/ 6*		*23 - 15/*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-1,2,3,5,4,7,8-HpCDF	*99*		*28 - 153*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-1,2,3,5,7,8,9-HpCDF	*1/ 7*		*24 - 138*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-OCDD	*11/*		*17 - 167*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*
13C-OCDF	*114*		*17 - 167*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl5-2,3,7,8-TCDD	*88*		*36 - 197*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 8:57*	*1*

Client Sample ID: EPNDSW04_20221211-02
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10
Lab Sample ID: 570-120466-5
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000049	ug/L		01/03/23 13:01	01/21/23 09:35	1
1,2,3,7,8-PeCDD	ND		0.000056	0.00000033	ug/L		01/03/23 13:01	01/21/23 09:35	1
1,2,3,7,8-PeCDF	**0.0000012**	**J,DX MB**	0.000056	0.00000026	ug/L		01/03/23 13:01	01/21/23 09:35	1
2,3,4,7,8-PeCDF	**0.0000014**	**J,DX q**	0.000056	0.00000029	ug/L		01/03/23 13:01	01/21/23 09:35	1
1,2,3,4,7,8-HxCDD	**0.0000032**	**J,DX MB**	0.000056	0.00000016	ug/L		01/03/23 13:01	01/21/23 09:35	1
1,2,3,6,7,8-HxCDD	**0.0000059**	**J,DX MB**	0.000056	0.00000018	ug/L		01/03/23 13:01	01/21/23 09:35	1
1,2,3,7,8,9-HxCDD	**0.0000039**	**J,DX MB**	0.000056	0.00000015	ug/L		01/03/23 13:01	01/21/23 09:35	1
1,2,3,4,7,8-HxCDF	**0.0000029**	**J,DX MB**	0.000056	0.00000025	ug/L		01/03/23 13:01	01/21/23 09:35	1
1,2,3,6,7,8-HxCDF	**0.0000023**	**J,DX MB**	0.000056	0.00000025	ug/L		01/03/23 13:01	01/21/23 09:35	1
1,2,3,7,8,9-HxCDF	**0.0000019**	**J,DX MB q**	0.000056	0.00000026	ug/L		01/03/23 13:01	01/21/23 09:35	1
2,3,4,6,7,8-HxCDF	**0.0000023**	**J,DX MB q**	0.000056	0.00000023	ug/L		01/03/23 13:01	01/21/23 09:35	1
1,2,3,4,6,7,8-HpCDD	**0.00010**	**MB**	0.000056	0.00000063	ug/L		01/03/23 13:01	01/21/23 09:35	1
1,2,3,4,6,7,8-HpCDF	**0.000027**	**J,DX MB**	0.000056	0.00000029	ug/L		01/03/23 13:01	01/21/23 09:35	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPNDSW04_20221211-02
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-5
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,7,8,9-HpCDF	0.0000023	J,DX MB	0.000056	0.00000033	ug/L		01/03/23 13:01	01/21/23 09:35	1
OCDD	0.0014	MB	0.00011	0.0000013	ug/L		01/03/23 13:01	01/21/23 09:35	1
OCDF	0.000054	J,DX MB	0.00011	0.00000041	ug/L		01/03/23 13:01	01/21/23 09:35	1
Total TCDD	ND		0.000011	0.00000049	ug/L		01/03/23 13:01	01/21/23 09:35	1
Total TCDF	0.0000093	J,DX MB q	0.000011	0.00000035	ug/L		01/03/23 13:01	01/21/23 09:35	1
Total PeCDD	ND		0.000056	0.00000033	ug/L		01/03/23 13:01	01/21/23 09:35	1
Total PeCDF	0.0000097	J,DX MB q	0.000056	0.00000026	ug/L		01/03/23 13:01	01/21/23 09:35	1
Total HxCDD	0.000037	J,DX MB q	0.000056	0.00000015	ug/L		01/03/23 13:01	01/21/23 09:35	1
Total HxCDF	0.000027	J,DX MB q	0.000056	0.00000023	ug/L		01/03/23 13:01	01/21/23 09:35	1
Total HpCDD	0.00023	MB	0.000056	0.00000063	ug/L		01/03/23 13:01	01/21/23 09:35	1
Total HpCDF	0.000061	MB q	0.000056	0.00000029	ug/L		01/03/23 13:01	01/21/23 09:35	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*26 - 145*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-2,3,7,8-TCDF	*48*		*25 - 149*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-1,2,3,7,8-PeCDD	*9/*		*26 - 181*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-1,2,3,7,8-PeCDF	*81*		*25 - 186*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-2,3,5,7,8-PeCDF	*74*		*21 - 178*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-1,2,3,5,7,8-HxCDD	*91*		*32 - 151*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-1,2,3,4,7,8-HxCDD	*79*		*28 - 13/*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-1,2,3,5,7,8-HxCDF	*92*		*24 - 162*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-1,2,3,4,7,8-HxCDF	*89*		*24 - 123*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-1,2,3,7,8,9-HxCDF	*9/*		*29 - 157*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-2,3,5,4,7,8-HxCDF	*97*		*28 - 134*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-1,2,3,5,4,7,8-HpCDD	*98*		*23 - 15/*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-1,2,3,5,4,7,8-HpCDF	*88*		*28 - 153*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-1,2,3,5,7,8,9-HpCDF	*98*		*24 - 138*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-OCDD	*1/ 2*		*17 - 167*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*
13C-OCDF	*1/ 9*		*17 - 167*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl5-2,3,7,8-TCDD	*87*		*36 - 197*	*/ 10/ 3023 13:/ 1*	*/ 1021023 / 9:36*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-3
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: EPNDSW04_20221211-02
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-5
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000011	0.0000013	ug/L		01/03/23 13:01	01/25/23 12:17	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*89*		*25 - 149*	*01/03/23 13:01*	*01/26/23 12:17*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl5-2,3,7,8-TCDD	*114*		*36 - 197*	*01/03/23 13:01*	*01/26/23 12:17*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-3
SDG: 001, 002, 009 and/or 11 Watersheds

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-120466-1	A1BMP0002_20221211	91
570-120466-2	A1BMP0003_20221211	90
570-120466-3	ILBMP0002_20221211	88
570-120466-4	EPNDSW04_20221211	88
570-120466-5	EPNDSW04_20221211-02	87
570-120466-5 - RA	EPNDSW04_20221211-02	116
MB 320-644230/1-A	Method Blank	91
MB 320-644230/1-A - RA	Method Blank	118

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-644230/2-A	Lab Control Sample	89
LCSD 320-644230/3-A	Lab Control Sample Dup	91

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-3
SDG: 001, 002, 009 and/or 11 Watersheds

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-120466-1	A1BMP0002_20221211	74	69	85	80	75	84	72	85
570-120466-2	A1BMP0003_20221211	69	65	80	76	74	89	75	88
570-120466-3	ILBMP0002_20221211	75	68	86	80	81	93	80	95
570-120466-4	EPNDSW04_20221211	76	70	90	82	81	98	87	98
570-120466-5	EPNDSW04_20221211-02	76	68	90	81	76	91	79	92
570-120466-5 - RA	EPNDSW04_20221211-02		89						
MB 320-644230/1-A	Method Blank	72	68	85	78	79	92	78	89
MB 320-644230/1-A - RA	Method Blank		85						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-120466-1	A1BMP0002_20221211	81	89	91	94	83	98	99	107
570-120466-2	A1BMP0003_20221211	84	85	89	95	85	95	98	105
570-120466-3	ILBMP0002_20221211	89	93	94	102	91	104	109	117
570-120466-4	EPNDSW04_20221211	97	96	102	105	99	107	110	116
570-120466-5	EPNDSW04_20221211-02	89	90	97	98	88	98	102	109
570-120466-5 - RA	EPNDSW04_20221211-02								
MB 320-644230/1-A	Method Blank	86	92	93	103	88	104	111	120
MB 320-644230/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-644230/2-A	Lab Control Sample	69	64	78	73	71	85	76	86
LCSD 320-644230/3-A	Lab Control Sample Dup	74	68	86	79	79	92	80	91

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-644230/2-A	Lab Control Sample	82	88	91	96	86	99	102	111

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Job ID: 570-120466-3
Project/Site: Boeing SSFL - BMP Performance SDG: 001, 002, 009 and/or 11 Watersheds

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCSD 320-644230/3-A	Lab Control Sample Dup	88	90	94	102	88	102	107	118

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-644230/1-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 644230

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000033	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000020	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8-PeCDF	0.000000846	J,DX	0.000050	0.00000012	ug/L		01/03/23 13:01	01/21/23 03:10	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,7,8-HxCDD	0.00000177	J,DX q	0.000050	0.00000019	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,6,7,8-HxCDD	0.000000898	J,DX	0.000050	0.00000021	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8,9-HxCDD	0.00000254	J,DX	0.000050	0.00000018	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,7,8-HxCDF	0.000000787	J,DX	0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,6,7,8-HxCDF	0.000000819	J,DX q	0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8,9-HxCDF	0.00000130	J,DX	0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
2,3,4,6,7,8-HxCDF	0.000000412	J,DX q	0.000050	0.00000013	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,6,7,8-HpCDD	0.00000559	J,DX	0.000050	0.00000030	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,6,7,8-HpCDF	0.00000445	J,DX	0.000050	0.00000024	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,7,8,9-HpCDF	0.00000348	J,DX	0.000050	0.00000024	ug/L		01/03/23 13:01	01/21/23 03:10	1
OCDD	0.0000294	J,DX	0.00010	0.00000059	ug/L		01/03/23 13:01	01/21/23 03:10	1
OCDF	0.00000261	J,DX	0.00010	0.00000046	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total TCDD	ND		0.000010	0.00000033	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total TCDF	0.00000235	J,DX	0.000010	0.00000019	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total PeCDD	ND		0.000050	0.00000020	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total PeCDF	0.000000846	J,DX	0.000050	0.00000012	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HxCDD	0.00000689	J,DX q	0.000050	0.00000018	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HxCDF	0.00000670	J,DX q	0.000050	0.00000013	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HpCDD	0.0000111	J,DX	0.000050	0.00000030	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HpCDF	0.00000861	J,DX	0.000050	0.00000024	ug/L		01/03/23 13:01	01/21/23 03:10	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*72*		*25 - 164*	*01/03/23 13:01*	*01/21/23 03:10*	*1*
13C-2,3,7,8-TCDF	*68*		*24 - 169*	*01/03/23 13:01*	*01/21/23 03:10*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*25 - 181*	*01/03/23 13:01*	*01/21/23 03:10*	*1*
13C-1,2,3,7,8-PeCDF	*78*		*24 - 185*	*01/03/23 13:01*	*01/21/23 03:10*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-644230/1-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 644230

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	79		21 - 178	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,7,8-HxCDD	92		32 - 141	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,6,7,8-HxCDD	78		28 - 130	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,7,8-HxCDF	89		26 - 152	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,6,7,8-HxCDF	86		26 - 123	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,7,8,9-HxCDF	92		29 - 147	01/03/23 13:01	01/21/23 03:10	1
13C-2,3,4,6,7,8-HxCDF	93		28 - 136	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,6,7,8-HpCDD	103		23 - 140	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,6,7,8-HpCDF	88		28 - 143	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,7,8,9-HpCDF	104		26 - 138	01/03/23 13:01	01/21/23 03:10	1
13C-OCDD	111		17 - 157	01/03/23 13:01	01/21/23 03:10	1
13C-OCDF	120		17 - 157	01/03/23 13:01	01/21/23 03:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	01/03/23 13:01	01/21/23 03:10	1

Lab Sample ID: LCS 320-644230/2-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 644230

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000190		ug/L		95	67 - 158
2,3,7,8-TCDF	0.000200	0.000230		ug/L		115	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000891		ug/L		89	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000890		ug/L		89	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000882		ug/L		88	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000883		ug/L		88	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000987		ug/L		99	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000917		ug/L		92	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000938		ug/L		94	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000960		ug/L		96	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000959		ug/L		96	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000942		ug/L		94	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000899		ug/L		90	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000993		ug/L		99	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000890		ug/L		89	78 - 138
OCDD	0.00200	0.00200		ug/L		100	78 - 144
OCDF	0.00200	0.00196		ug/L		98	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	69		20 - 175
13C-2,3,7,8-TCDF	64		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 192
13C-2,3,4,7,8-PeCDF	71		13 - 328
13C-1,2,3,4,7,8-HxCDD	85		21 - 193
13C-1,2,3,6,7,8-HxCDD	76		25 - 163
13C-1,2,3,4,7,8-HxCDF	86		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-644230/2-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 644230

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	82		21 - 159
13C-1,2,3,7,8,9-HxCDF	88		17 - 205
13C-2,3,4,6,7,8-HxCDF	91		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	96		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	86		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	99		20 - 186
13C-OCDD	102		13 - 199
13C-OCDF	111		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	89		31 - 191

Lab Sample ID: LCSD 320-644230/3-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 644230

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000203		ug/L		102	67 - 158	7	50
2,3,7,8-TCDF			0.000200	0.000231		ug/L		115	75 - 158	0	50
1,2,3,7,8-PeCDD			0.00100	0.000886		ug/L		89	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.000923		ug/L		92	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.000911		ug/L		91	68 - 160	3	50
1,2,3,4,7,8-HxCDD			0.00100	0.000910		ug/L		91	70 - 164	3	50
1,2,3,6,7,8-HxCDD			0.00100	0.00104		ug/L		104	76 - 134	5	50
1,2,3,7,8,9-HxCDD			0.00100	0.000959		ug/L		96	64 - 162	4	50
1,2,3,4,7,8-HxCDF			0.00100	0.000971		ug/L		97	72 - 134	3	50
1,2,3,6,7,8-HxCDF			0.00100	0.000997		ug/L		100	84 - 130	4	50
1,2,3,7,8,9-HxCDF			0.00100	0.00102		ug/L		102	78 - 130	6	50
2,3,4,6,7,8-HxCDF			0.00100	0.000987		ug/L		99	70 - 156	5	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000924		ug/L		92	70 - 140	3	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00105		ug/L		105	82 - 122	6	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000942		ug/L		94	78 - 138	6	50
OCDD			0.00200	0.00209		ug/L		104	78 - 144	4	50
OCDF			0.00200	0.00200		ug/L		100	63 - 170	2	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	74		20 - 175
13C-2,3,7,8-TCDF	68		22 - 152
13C-1,2,3,7,8-PeCDD	86		21 - 227
13C-1,2,3,7,8-PeCDF	79		21 - 192
13C-2,3,4,7,8-PeCDF	79		13 - 328
13C-1,2,3,4,7,8-HxCDD	92		21 - 193
13C-1,2,3,6,7,8-HxCDD	80		25 - 163
13C-1,2,3,4,7,8-HxCDF	91		19 - 202
13C-1,2,3,6,7,8-HxCDF	88		21 - 159
13C-1,2,3,7,8,9-HxCDF	90		17 - 205
13C-2,3,4,6,7,8-HxCDF	94		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	102		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-644230/3-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 644230

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	88		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	102		20 - 186
13C-OCDD	107		13 - 199
13C-OCDF	118		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	91		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-644230/1-A
Matrix: Water
Analysis Batch: 648980

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 644230

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.0000013	ug/L		01/03/23 13:01	01/25/23 13:31	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	85		24 - 169	01/03/23 13:01	01/25/23 13:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	118		35 - 197	01/03/23 13:01	01/25/23 13:31	1

Specialty Organics

Prep Batch: 644230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-1	A1BMP0002_20221211	Total/NA	Water	1613B	
570-120466-2	A1BMP0003_20221211	Total/NA	Water	1613B	
570-120466-3	ILBMP0002_20221211	Total/NA	Water	1613B	
570-120466-4	EPNDSW04_20221211	Total/NA	Water	1613B	
570-120466-5 - RA	EPNDSW04_20221211-02	Total/NA	Water	1613B	
570-120466-5	EPNDSW04_20221211-02	Total/NA	Water	1613B	
MB 320-644230/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-644230/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-644230/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-644230/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 648563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-1	A1BMP0002_20221211	Total/NA	Water	1613B	644230
570-120466-2	A1BMP0003_20221211	Total/NA	Water	1613B	644230
570-120466-3	ILBMP0002_20221211	Total/NA	Water	1613B	644230
570-120466-4	EPNDSW04_20221211	Total/NA	Water	1613B	644230
570-120466-5	EPNDSW04_20221211-02	Total/NA	Water	1613B	644230
MB 320-644230/1-A	Method Blank	Total/NA	Water	1613B	644230
LCS 320-644230/2-A	Lab Control Sample	Total/NA	Water	1613B	644230
LCSD 320-644230/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	644230

Analysis Batch: 648980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120466-5 - RA	EPNDSW04_20221211-02	Total/NA	Water	1613B	644230
MB 320-644230/1-A - RA	Method Blank	Total/NA	Water	1613B	644230

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-3
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: A1BMP0002_20221211
Date Collected: 12/11/22 10:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			966.7 mL	20.0 uL	644230	01/03/23 13:01	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	648563	01/21/23 06:22	SMA	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: A1BMP0003_20221211
Date Collected: 12/11/22 10:15
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			912.5 mL	20.0 uL	644230	01/03/23 13:01	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	648563	01/21/23 07:10	SMA	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: ILBMP0002_20221211
Date Collected: 12/11/22 10:00
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			878.8 mL	20.0 uL	644230	01/03/23 13:01	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	648563	01/21/23 07:59	SMA	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: EPNDSW04_20221211
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			966.3 mL	20.0 uL	644230	01/03/23 13:01	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	648563	01/21/23 08:47	SMA	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: EPNDSW04_20221211-02
Date Collected: 12/11/22 07:30
Date Received: 12/12/22 17:10

Lab Sample ID: 570-120466-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		888.6 mL	20.0 uL	644230	01/03/23 13:01	CGB	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	648980	01/25/23 12:17	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			888.6 mL	20.0 uL	644230	01/03/23 13:01	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	648563	01/21/23 09:35	SMA	EET SAC
	Instrument ID: DFS 1									

Laboratory References:
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120466-3
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-31-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-30-23
Hawaii	State	<cert No.>	01-29-23
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-3
SDG: 001, 002, 009 and/or 11 Watersheds

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120466-3
SDG: 001, 002, 009 and/or 11 Watersheds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120466-1	A1BMP0002_20221211	Water	12/11/22 10:30	12/12/22 17:10
570-120466-2	A1BMP0003_20221211	Water	12/11/22 10:15	12/12/22 17:10
570-120466-3	ILBMP0002_20221211	Water	12/11/22 10:00	12/12/22 17:10
570-120466-4	EPNDSW04_20221211	Water	12/11/22 07:30	12/12/22 17:10
570-120466-5	EPNDSW04_20221211-02	Water	12/11/22 07:30	12/12/22 17:10

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Thursday, December 15, 2022 7:07 AM
To: Virendra Patel; Dominick, Mark
Cc: Rapp, Kerry; Staff, Kathleen
Subject: RE: BMP / ISRA Sampling -- ECI Job#570-120466 -- Container Issues.

EXTERNAL EMAIL*

Confirmed, please proceed

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 5:38 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>; Dominick, Mark <MDominick@haleyaldrich.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: BMP / ISRA Sampling -- ECI Job#570-120466 -- Container Issues.

CAUTION: External Email

Katherine and/or Mark –

The lab had the following receipt items for the subject job: 570-120466

570-120466 –

A. The laboratory received 250 ml plastic with HNO3 instead of 250 ml unpreserved plastic container for dissolved metals analysis on the following samples:

A1BMP0002_20221211 (570-120466-1),
A1BMP0003_20221211 (570-120466-2),
ILBMP0002_20221211 (570-120466-3).

The laboratory used one of the 1 Liter ambers to pour off an aliquot for Dissolved Metals into 1 x 250ml poly unpreserved container

B. The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following samples:

A1BMP0002_20221211 (570-120466-1),
A1BMP0003_20221211 (570-120466-2),
ILBMP0002_20221211 (570-120466-3).

The laboratory used the 1 Liter ambers to pour off an aliquot for Dissolved Mercury into 1 x 250ml amber unpreserved container

Please confirm the above actions taken are acceptable and the lab is to proceed with testing.

Best Regards,

Virendra Patel
Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

1CU400

2 Storm

Chain of Custody Record for Chain of Custody Record

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

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Eurofins Calscience, Inc.

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2013-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑CALENDAR DAYS ☐WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Revised COC received from Kerry Rapp (Haley&Aldrich) on 12/19/22 at 06:20am.
- Virendra (ECI)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8, Cd, Cu, Pb (Total Recoverable)	Method 200.8, Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)						
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1-1L Poly	1-1L Poly						
A1BMP0002_20221211	12/11/22	1030	G	WM	8	Y	N	X	X	X	X	X	X	X						
A1BMP0003_20221211	12/11/22	1015	G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0011_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0002_20221211	12/11/22	1000	G	WM	8	Y	Y	X	X	X	X	X	X	X						
LBMP0004_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0008_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X						
LXBMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X						
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X								
EPNDSW04_20221211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X						
~~DUP01~~ EPNDSW04_20221211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X						
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X						
Preservation Used: 1= Ice, 2= HC								4	1	2	1	1	1	1						

EPNDSW04_20221211-02

570-120466 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA ... or the sample in the
Comments Section if the lab is to di...
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal
☐Return to Client ☐Disposal by Lab ☑Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com, Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

	Company	Date/Time		Date/Time
Relinquished by	3.1A	12/12/22 1310	Received by: EC	12/12/22 1310
Relinquished by	EC	12/12/22 1710	Received by: EC	12-12-22 17:10
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2.3|2.1, 2.0|1.8 SCM

1/26/2023

SAP COC 2019/2020 VERSION 3

1CU400

2 Storm

Chain of Custody Record for Chain of Custody Record

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

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Eurofins Calscience, Inc.

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑CALENDAR DAYS ☐WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Method 200.8. Cd, Cu, Pb (Total Recoverable)	Method 200.8. Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)							
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1-1L Poly	1-1L Poly							
A1BMP0002_20221211	12/11/22	1030	G	WM	8	Y	N	X	X	X	X	X	X	X							
A1BMP0003_20221211	12/11/22	0915	G	WM	8	Y	N	X	X	X	X	X	X	X							
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X							
B1BMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X							
B1BMP0011_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LBMP0002_20221211	12/11/22	1000	G	WM	8	Y	Y	X	X	X	X	X	X	X							
LBMP0004_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LBMP0008_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X							
LXBMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X							
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X							
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X									
EPNDSW04_20221211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X							
~~DUP01~~ EPNDSW04_20221211	12/11/22	0730	G	WM	8	Y	N	X	X	X	X	X	X	X							
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X							
								4	1	2	1	1	1	1							

570-120466 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐Non-Hazard ☐Flammable ☐Skin Irritant ☐Poison B ☐Unknown

Sample Disposal
☐Return to Client ☐Disposal by Lab ☑Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com, Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

	Company	Date/Time		Date/Time
Relinquished by	[illegible]	12/12/22 1210	Received by: EC	12/12/22 1310
Relinquished by	EC	12/12/22 1710	Received by: EC	12-12-22 17:10
Relinquished by			Received in Laboratory by	

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2.3|2.1, 2.0|1.8 SCM

Page 33 of 37

1/26/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-202233 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120466-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:				
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Total	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
A1BMP0002_20221211 (570-120466-1)	12/11/22	10 10 Pacific		Water			X	X	1	
A1BMP0003_20221211 (570-120466-2)	12/11/22	10 15 Pacific		Water			X	X	1	
ILBMP0002_20221211 (570-120466-3)	12/11/22	10:00 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 12/21/22 1232		Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201234.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-120466-3
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/4/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
A1BMP002_20221211 (570-120466-1)	12/11/22	10:10 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
A1BMP003_20221211 (570-120466-2)	12/11/22	10:15 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
ILBMP002_20221211 (570-120466-3)	12/11/22	10:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPNDSW04_20221211 (570-120466-4)	12/11/22	07:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPNDSL04_20221211 (570-120466-5)	12/11/22	08:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 12/14/22 11:10	Company	Received by:	Date/Time: 12/15/22 900	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 1.0c

Ver: 06/08/2021

1/26/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120466-3
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120466
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120466-3
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120466
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 12/15/22 02:53 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.2c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 12/28/2022 8:42:33 AM

JOB DESCRIPTION

Boeing SSFL - BMP Performance
SDG NUMBER 001, 002, 009 and/or 11 Watersheds

JOB NUMBER

570-120471-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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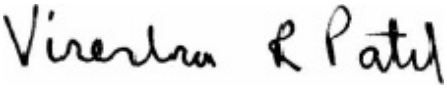

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120471-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120471-1

Comments
No additional comments.

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 3.1º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following sample was received with insufficient preservation at a pH of >2 SU: BGBMP0003_20221211 (570-120471-1). 570-120471-U-1. The sample was preserved to the appropriate pH in the laboratory.

The laboratory received 500 ml unpreserved plastic instead of 500 ml plastic W/NaOH container for CN analysis on the following sample: BGBMP0003_20221211 (570-120471-1). CN container was preserved at the lab..

The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following sample: BGBMP0003_20221211 (570-120471-1). Aliquott was taken from 1L Amber glass container.

The clients office was contacted with the above sample receipt anomalies. The laboratory was provided written direction on how to proceed, please refer to the COC section of the report for further details.

GC/MS VOA
Method 624.1: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: BGBMP0003_20221211 (570-120471-1). Elevated reporting limits (RLs) are provided.

Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-290331. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following sample was received and analyzed outside of holding time: BGBMP0003_20221211 (570-120471-1).

Method 218.6: The following sample was received, filtered and analyzed outside of holding time: BGBMP0003_20221211 (570-120471-1).

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 570-288811 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 300.0: The following sample was analyzed outside of analytical holding time due to the exceeded lab capacity as a result of the storm water event: BGBMP0003_20221211 (570-120471-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-289608 and analytical batch 570-289839 were outside control limits for Aluminum. Sample matrix interference is suspected because the associated laboratory control

Job ID: 570-120471-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample (LCS) recovery was within acceptance limits.

Method 200.8: The method blank for preparation batch 570-289608 and analytical batch 570-289839 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: BGBMP0003_20221211 (570-120471-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: BGBMP0003_20221211 (570-120471-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 570-290587.

Method 200.7 Rev 4.4: The method blank for preparation batch 570-290587 and analytical batch 570-291076 contained Boron above the method detection limit. This target analyte concentration was less than the reporting limit (RL) or greater than 10X the value found in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-289215. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: BGBMP0003_20221211

Lab Sample ID: 570-120471-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.019	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.061	J,DX BU	0.20	0.019	ug/L	1		218.6	Dissolved
Nitrate as N	4.7	BU	0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	2.4		1.0	0.24	mg/L	1		300.0	Total/NA
Boron	34	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	32	J,DX BU MB	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Aluminum	63		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	0.39	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	14		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	0.36	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	1.9	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	56	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	1.7		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	0.46	J,DX	2.0	0.17	ug/L	1		200.8	Total Recoverable
Aluminum	43	BU	15	8.6	ug/L	1		200.8	Dissolved
Arsenic	0.44	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	14	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.30	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	1.7	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	34	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	1.8	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Antimony	0.43	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: 40CFR136A 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		2.0	0.82	ug/L			12/19/22 23:48	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*60 - 140*		*12/19/22 23:48*	*2*
4-Bromofluorobenzene (Surr)	*88*		*60 - 140*		*12/19/22 23:48*	*2*
Dibromofluoromethane	*116*		*60 - 140*		*12/19/22 23:48*	*2*
Toluene-d8 (Surr)	*99*		*60 - 140*		*12/19/22 23:48*	*2*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: 40CFR136A 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.7	4.1	ug/L		12/16/22 05:31	12/22/22 11:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*93*		*28 - 127*	*12/16/22 05:31*	*12/22/22 11:27*	*1*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*	*12/16/22 05:31*	*12/22/22 11:27*	*1*
2-Fluorophenol (Surr)	*49*		*17 - 120*	*12/16/22 05:31*	*12/22/22 11:27*	*1*
Nitrobenzene-d5 (Surr)	*78*		*27 - 120*	*12/16/22 05:31*	*12/22/22 11:27*	*1*
Phenol-d6 (Surr)	*36*		*10 - 120*	*12/16/22 05:31*	*12/22/22 11:27*	*1*
p-Terphenyl-d14 (Surr)	*84*		*45 - 120*	*12/16/22 05:31*	*12/22/22 11:27*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.019	J,DX BU BV	0.20	0.019	ug/L			12/13/22 02:35	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.061	J,DX BU	0.20	0.019	ug/L			12/14/22 11:39	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: MCAWW 300.0 - Anions, Ion Chromatography

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			12/14/22 17:24	1
Nitrite as N	ND	BU	0.10	0.043	mg/L			12/14/22 17:24	1
Nitrate as N	**4.7**	**BU**	0.10	0.020	mg/L			12/14/22 17:24	1
Sulfate	**2.4**		1.0	0.24	mg/L			12/14/22 17:24	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/14/22 16:46	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**34**	**J,DX**	500	3.5	ug/L		12/16/22 08:33	12/20/22 09:30	1
Zinc	ND		250	4.6	ug/L		12/16/22 08:33	12/20/22 09:30	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	**32**	**J,DX BU MB**	500	3.5	ug/L			12/21/22 13:17	1
Zinc	ND	BU	250	4.6	ug/L			12/21/22 13:17	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**63**		15	8.6	ug/L		12/16/22 08:32	12/16/22 15:36	1
Silver	ND		1.0	0.23	ug/L		12/16/22 08:32	12/16/22 15:36	1
Arsenic	**0.39**	**J,DX**	1.0	0.16	ug/L		12/16/22 08:32	12/16/22 15:36	1
Barium	**14**		1.0	0.17	ug/L		12/16/22 08:32	12/16/22 15:36	1
Beryllium	ND		0.50	0.26	ug/L		12/16/22 08:32	12/16/22 15:36	1
Cadmium	ND		1.0	0.13	ug/L		12/16/22 08:32	12/16/22 15:36	1
Chromium	**0.36**	**J,DX**	2.0	0.14	ug/L		12/16/22 08:32	12/16/22 15:36	1
Copper	**1.9**	**J,DX**	2.0	0.32	ug/L		12/16/22 08:32	12/16/22 15:36	1
Iron	**56**	**MB**	20	3.7	ug/L		12/16/22 08:32	12/16/22 15:36	1
Manganese	**1.7**		1.0	0.41	ug/L		12/16/22 08:32	12/16/22 15:36	1
Nickel	**0.46**	**J,DX**	2.0	0.17	ug/L		12/16/22 08:32	12/16/22 15:36	1
Lead	ND		1.0	0.12	ug/L		12/16/22 08:32	12/16/22 15:36	1
Antimony	ND		2.0	0.36	ug/L		12/16/22 08:32	12/16/22 15:36	1
Selenium	ND		2.0	0.52	ug/L		12/16/22 08:32	12/16/22 15:36	1
Thallium	ND		1.0	0.11	ug/L		12/16/22 08:32	12/16/22 15:36	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**43**	**BU**	15	8.6	ug/L			12/20/22 16:27	1
Silver	ND	BU	1.0	0.23	ug/L			12/20/22 16:27	1
Arsenic	**0.44**	**J,DX BU**	1.0	0.16	ug/L			12/20/22 16:27	1
Barium	**14**	**BU**	1.0	0.17	ug/L			12/20/22 16:27	1
Beryllium	ND	BU	0.50	0.26	ug/L			12/20/22 16:27	1
Cadmium	ND	BU	1.0	0.13	ug/L			12/20/22 16:27	1
Chromium	**0.30**	**J,DX BU**	2.0	0.14	ug/L			12/20/22 16:27	1
Copper	**1.7**	**J,DX BU**	2.0	0.32	ug/L			12/20/22 16:27	1
Iron	**34**	**BU**	20	3.7	ug/L			12/20/22 16:27	1
Manganese	**1.8**	**BU**	1.0	0.41	ug/L			12/20/22 16:27	1
Nickel	ND	BU	2.0	0.17	ug/L			12/20/22 16:27	1
Lead	ND	BU	1.0	0.12	ug/L			12/20/22 16:27	1
Antimony	**0.43**	**J,DX BU**	2.0	0.36	ug/L			12/20/22 16:27	1
Selenium	ND	BU	2.0	0.52	ug/L			12/20/22 16:27	1
Thallium	ND	BU	1.0	0.11	ug/L			12/20/22 16:27	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

General Chemistry

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			12/27/22 10:58	1
Total Suspended Solids (SM 2540D)	ND		1.0	0.83	mg/L			12/14/22 18:39	1
Cyanide, Total (SM 4500 CN E)	ND		5.0	2.5	ug/L		12/19/22 14:06	12/19/22 19:07	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			12/14/22 13:02	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			12/14/22 13:02	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			12/14/22 13:02	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			12/14/22 13:02	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			12/14/22 13:02	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			12/14/22 13:02	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			12/14/22 13:02	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			12/14/22 13:02	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			12/14/22 13:02	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	12/11/22
Date Received:	12/12/22
Work Order No:	570-120471
Date Analyzed:	12/14/22
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
BGBMP0003_20221211		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-120471-1	BGBMP0003_20221211	114	88	116	99
LCS 570-290331/4	Lab Control Sample	108	99	102	100
LCSD 570-290331/5	Lab Control Sample Dup	108	100	103	101
MB 570-290331/7	Method Blank	114	86	112	98

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-120471-1	BGBMP0003_20221211	93	69	49	78	36	84

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-290331/7
Matrix: Water
Analysis Batch: 290331

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			12/19/22 17:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*114*		*60 - 140*		*12/19/22 17:54*	*1*
4-Bromofluorobenzene (Surr)	*86*		*60 - 140*		*12/19/22 17:54*	*1*
Dibromofluoromethane	*112*		*60 - 140*		*12/19/22 17:54*	*1*
Toluene-d8 (Surr)	*98*		*60 - 140*		*12/19/22 17:54*	*1*

Lab Sample ID: LCS 570-290331/4
Matrix: Water
Analysis Batch: 290331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	19.8		ug/L		99	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*60 - 140*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*
Dibromofluoromethane	*102*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: LCSD 570-290331/5
Matrix: Water
Analysis Batch: 290331

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene			20.0	20.3		ug/L		101	65 - 135	2	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*108*		*60 - 140*
4-Bromofluorobenzene (Surr)	*100*		*60 - 140*
Dibromofluoromethane	*103*		*60 - 140*
Toluene-d8 (Surr)	*101*		*60 - 140*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-288424/4
Matrix: Water
Analysis Batch: 288424

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			12/13/22 01:59	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: LCS 570-288424/5
Matrix: Water
Analysis Batch: 288424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	49.1		ug/L		98	95 - 107		

Lab Sample ID: LCSD 570-288424/6
Matrix: Water
Analysis Batch: 288424

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	49.3		ug/L		99	95 - 107	0	20

Lab Sample ID: 570-120392-N-1 MS
Matrix: Water
Analysis Batch: 288424

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	2.0		50.1	51.8		ug/L		100	85 - 121		

Lab Sample ID: 570-120392-N-1 MSD
Matrix: Water
Analysis Batch: 288424

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	2.0		50.1	51.6		ug/L		99	85 - 121	1	25

Lab Sample ID: MB 570-288824/1-A
Matrix: Water
Analysis Batch: 288808

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			12/14/22 11:04	1

Lab Sample ID: LCS 570-288824/2-A
Matrix: Water
Analysis Batch: 288808

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	47.8		ug/L		96	95 - 107		

Lab Sample ID: LCSD 570-288824/3-A
Matrix: Water
Analysis Batch: 288808

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	47.7		ug/L		95	95 - 107	0	20

Lab Sample ID: 570-120471-1 MS
Matrix: Water
Analysis Batch: 288808

Client Sample ID: BGBMP0003_20221211
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	0.061	J,DX BU	50.1	47.7		ug/L		95	85 - 121		

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: 570-120471-1 MSD
Matrix: Water
Analysis Batch: 288808

Client Sample ID: BGBMP0003_20221211
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.061	J,DX BU	50.1	47.9		ug/L		96	85 - 121	1	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-288811/5
Matrix: Water
Analysis Batch: 288811

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			12/14/22 03:51	1
Nitrate as N	ND		0.10	0.020	mg/L			12/14/22 03:51	1

Lab Sample ID: LCS 570-288811/6
Matrix: Water
Analysis Batch: 288811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.51		mg/L		101	90 - 110
Nitrate as N	5.00	5.02		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-288811/7
Matrix: Water
Analysis Batch: 288811

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.51		mg/L		101	90 - 110	0	15
Nitrate as N	5.00	5.02		mg/L		100	90 - 110	0	15

Lab Sample ID: 570-120683-H-8 MS
Matrix: Water
Analysis Batch: 288811

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	ND		2.50	2.70		mg/L		108	80 - 120
Nitrate as N	ND		5.00	5.06		mg/L		101	80 - 120

Lab Sample ID: 570-120683-H-8 MSD
Matrix: Water
Analysis Batch: 288811

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	ND		2.50	2.80		mg/L		112	80 - 120	4	20
Nitrate as N	ND		5.00	5.09		mg/L		102	80 - 120	1	20

Lab Sample ID: MB 570-288812/5
Matrix: Water
Analysis Batch: 288812

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			12/14/22 03:51	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-288812/5
Matrix: Water
Analysis Batch: 288812

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			12/14/22 03:51	1

Lab Sample ID: LCS 570-288812/6
Matrix: Water
Analysis Batch: 288812

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride			2.50	2.56		mg/L		102	90 - 110		
Sulfate			50.0	49.9		mg/L		100	90 - 110		

Lab Sample ID: LCSD 570-288812/7
Matrix: Water
Analysis Batch: 288812

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride			2.50	2.57		mg/L		103	90 - 110	0	15
Sulfate			50.0	50.0		mg/L		100	90 - 110	0	15

Lab Sample ID: 570-120683-H-8 MS
Matrix: Water
Analysis Batch: 288812

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	0.14		2.50	2.42		mg/L		91	80 - 120		

Lab Sample ID: 570-120683-H-8 MSD
Matrix: Water
Analysis Batch: 288812

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.14		2.50	2.54		mg/L		96	80 - 120	5	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-288984/7
Matrix: Water
Analysis Batch: 288984

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			12/14/22 15:22	1

Lab Sample ID: LCS 570-288984/8
Matrix: Water
Analysis Batch: 288984

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	24.0		ug/L		96	85 - 115		

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCSD 570-288984/9
Matrix: Water
Analysis Batch: 288984

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.2		ug/L		97	85 - 115	1	15

Lab Sample ID: 570-120548-A-1 MS
Matrix: Water
Analysis Batch: 288984

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	ND		50.0	47.2		ug/L		94	80 - 120		

Lab Sample ID: 570-120548-A-1 MSD
Matrix: Water
Analysis Batch: 288984

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	ND		50.0	47.1		ug/L		94	80 - 120	0	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-289609/1-A
Matrix: Water
Analysis Batch: 290463

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 289609

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		12/16/22 08:33	12/20/22 09:15	1
Zinc	ND		250	4.6	ug/L		12/16/22 08:33	12/20/22 09:15	1

Lab Sample ID: LCS 570-289609/2-A
Matrix: Water
Analysis Batch: 290463

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 289609

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	502		ug/L		100	85 - 115		
Zinc			500	522		ug/L		104	85 - 115		

Lab Sample ID: LCSD 570-289609/3-A
Matrix: Water
Analysis Batch: 290463

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 289609

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	495	J,DX	ug/L		99	85 - 115	1	20
Zinc			500	523		ug/L		105	85 - 115	0	20

Lab Sample ID: 570-120354-A-1-C MS
Matrix: Water
Analysis Batch: 290463

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 289609

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	110	J,DX	500	633		ug/L		104	80 - 120		
Zinc	580		500	1120		ug/L		110	80 - 120		

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 570-120354-A-1-D MSD
Matrix: Water
Analysis Batch: 290463

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 289609

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	110	J,DX	500	628		ug/L		103	80 - 120	1	20
Zinc	580		500	1110		ug/L		107	80 - 120	1	20

Lab Sample ID: MB 570-290587/1-A
Matrix: Water
Analysis Batch: 291076

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	7.80	J,DX	500	3.5	ug/L			12/21/22 13:10	1
Zinc	ND		250	4.6	ug/L			12/21/22 13:10	1

Lab Sample ID: LCS 570-290587/2-A
Matrix: Water
Analysis Batch: 291076

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	429	J,DX	ug/L		86	85 - 115
Zinc	500	440		ug/L		88	85 - 115

Lab Sample ID: LCSD 570-290587/3-A
Matrix: Water
Analysis Batch: 291076

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	429	J,DX	ug/L		86	85 - 115	0	20
Zinc	500	442		ug/L		88	85 - 115	0	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-289608/1-A
Matrix: Water
Analysis Batch: 289800

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		12/16/22 08:32	12/16/22 14:32	1
Silver	ND		1.0	0.23	ug/L		12/16/22 08:32	12/16/22 14:32	1
Arsenic	ND		1.0	0.16	ug/L		12/16/22 08:32	12/16/22 14:32	1
Barium	ND		1.0	0.17	ug/L		12/16/22 08:32	12/16/22 14:32	1
Beryllium	ND		0.50	0.26	ug/L		12/16/22 08:32	12/16/22 14:32	1
Cadmium	ND		1.0	0.13	ug/L		12/16/22 08:32	12/16/22 14:32	1
Chromium	ND		2.0	0.14	ug/L		12/16/22 08:32	12/16/22 14:32	1
Copper	ND		2.0	0.32	ug/L		12/16/22 08:32	12/16/22 14:32	1
Iron	8.50	J,DX	20	3.7	ug/L		12/16/22 08:32	12/16/22 14:32	1
Manganese	ND		1.0	0.41	ug/L		12/16/22 08:32	12/16/22 14:32	1
Nickel	ND		2.0	0.17	ug/L		12/16/22 08:32	12/16/22 14:32	1
Lead	ND		1.0	0.12	ug/L		12/16/22 08:32	12/16/22 14:32	1
Antimony	ND		2.0	0.36	ug/L		12/16/22 08:32	12/16/22 14:32	1
Selenium	ND		2.0	0.52	ug/L		12/16/22 08:32	12/16/22 14:32	1
Thallium	ND		1.0	0.11	ug/L		12/16/22 08:32	12/16/22 14:32	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-289608/2-A
Matrix: Water
Analysis Batch: 289800

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum			80.0	86.7		ug/L		108	85 - 115		
Silver			80.0	86.8		ug/L		108	85 - 115		
Arsenic			80.0	85.3		ug/L		107	85 - 115		
Barium			80.0	86.7		ug/L		108	85 - 115		
Beryllium			80.0	87.5		ug/L		109	85 - 115		
Cadmium			80.0	87.3		ug/L		109	85 - 115		
Chromium			80.0	86.0		ug/L		108	85 - 115		
Copper			80.0	89.4		ug/L		112	85 - 115		
Iron			800	903		ug/L		113	85 - 115		
Manganese			80.0	88.3		ug/L		110	85 - 115		
Nickel			80.0	88.2		ug/L		110	85 - 115		
Lead			80.0	87.0		ug/L		109	85 - 115		
Antimony			80.0	89.6		ug/L		112	85 - 115		
Selenium			80.0	86.0		ug/L		107	85 - 115		
Thallium			80.0	86.3		ug/L		108	85 - 115		

Lab Sample ID: LCSD 570-289608/3-A
Matrix: Water
Analysis Batch: 289800

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum			80.0	87.1		ug/L		109	85 - 115	1	20
Silver			80.0	87.1		ug/L		109	85 - 115	0	20
Arsenic			80.0	85.3		ug/L		107	85 - 115	0	20
Barium			80.0	88.2		ug/L		110	85 - 115	2	20
Beryllium			80.0	89.0		ug/L		111	85 - 115	2	20
Cadmium			80.0	87.5		ug/L		109	85 - 115	0	20
Chromium			80.0	86.6		ug/L		108	85 - 115	1	20
Copper			80.0	88.8		ug/L		111	85 - 115	1	20
Iron			800	896		ug/L		112	85 - 115	1	20
Manganese			80.0	87.1		ug/L		109	85 - 115	1	20
Nickel			80.0	87.7		ug/L		110	85 - 115	1	20
Lead			80.0	87.6		ug/L		109	85 - 115	1	20
Antimony			80.0	89.4		ug/L		112	85 - 115	0	20
Selenium			80.0	89.5		ug/L		112	85 - 115	4	20
Thallium			80.0	87.4		ug/L		109	85 - 115	1	20

Lab Sample ID: 570-120461-C-1-B MS
Matrix: Water
Analysis Batch: 289839

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum	300		80.0	425	LM	ug/L		152	80 - 120		
Silver	ND		80.0	76.8		ug/L		96	80 - 120		
Arsenic	0.64	J,DX	80.0	80.2		ug/L		99	80 - 120		
Barium	9.1		80.0	87.2		ug/L		98	80 - 120		
Beryllium	ND		80.0	83.0		ug/L		104	80 - 120		
Cadmium	ND		80.0	77.3		ug/L		97	80 - 120		
Chromium	0.60	J,DX	80.0	78.2		ug/L		97	80 - 120		

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-120461-C-1-B MS
Matrix: Water
Analysis Batch: 289839

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Copper	1.8	J,DX	80.0	81.2		ug/L		99	80 - 120
Iron	330	MB	800	1100		ug/L		96	80 - 120
Manganese	18		80.0	95.3		ug/L		97	80 - 120
Nickel	0.47	J,DX	80.0	78.6		ug/L		98	80 - 120
Lead	1.0		80.0	78.6		ug/L		97	80 - 120
Antimony	ND		80.0	81.3		ug/L		102	80 - 120
Selenium	ND		80.0	75.7		ug/L		95	80 - 120
Thallium	ND		80.0	77.9		ug/L		97	80 - 120

Lab Sample ID: 570-120461-C-1-C MSD
Matrix: Water
Analysis Batch: 289839

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 289608

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	300		80.0	445	LM	ug/L		177	80 - 120	5	20
Silver	ND		80.0	81.0		ug/L		101	80 - 120	5	20
Arsenic	0.64	J,DX	80.0	83.8		ug/L		104	80 - 120	4	20
Barium	9.1		80.0	90.9		ug/L		102	80 - 120	4	20
Beryllium	ND		80.0	81.8		ug/L		102	80 - 120	1	20
Cadmium	ND		80.0	81.4		ug/L		102	80 - 120	5	20
Chromium	0.60	J,DX	80.0	80.9		ug/L		100	80 - 120	3	20
Copper	1.8	J,DX	80.0	84.3		ug/L		103	80 - 120	4	20
Iron	330	MB	800	1120		ug/L		100	80 - 120	2	20
Manganese	18		80.0	98.0		ug/L		101	80 - 120	3	20
Nickel	0.47	J,DX	80.0	81.1		ug/L		101	80 - 120	3	20
Lead	1.0		80.0	83.0		ug/L		102	80 - 120	5	20
Antimony	ND		80.0	85.4		ug/L		107	80 - 120	5	20
Selenium	ND		80.0	82.3		ug/L		103	80 - 120	8	20
Thallium	ND		80.0	81.6		ug/L		102	80 - 120	5	20

Lab Sample ID: MB 570-290573/1-A
Matrix: Water
Analysis Batch: 290920

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			12/20/22 16:20	1
Silver	ND		1.0	0.23	ug/L			12/20/22 16:20	1
Arsenic	ND		1.0	0.16	ug/L			12/20/22 16:20	1
Barium	ND		1.0	0.17	ug/L			12/20/22 16:20	1
Beryllium	ND		0.50	0.26	ug/L			12/20/22 16:20	1
Cadmium	ND		1.0	0.13	ug/L			12/20/22 16:20	1
Chromium	ND		2.0	0.14	ug/L			12/20/22 16:20	1
Copper	ND		2.0	0.32	ug/L			12/20/22 16:20	1
Iron	ND		20	3.7	ug/L			12/20/22 16:20	1
Manganese	ND		1.0	0.41	ug/L			12/20/22 16:20	1
Nickel	ND		2.0	0.17	ug/L			12/20/22 16:20	1
Lead	ND		1.0	0.12	ug/L			12/20/22 16:20	1
Antimony	ND		2.0	0.36	ug/L			12/20/22 16:20	1
Selenium	ND		2.0	0.52	ug/L			12/20/22 16:20	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-290573/1-A
Matrix: Water
Analysis Batch: 290920

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		1.0	0.11	ug/L			12/20/22 16:20	1

Lab Sample ID: LCS 570-290573/2-A
Matrix: Water
Analysis Batch: 290920

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	77.0		ug/L		96	85 - 115
Silver	80.0	73.8		ug/L		92	85 - 115
Arsenic	80.0	74.2		ug/L		93	85 - 115
Barium	80.0	76.5		ug/L		96	85 - 115
Beryllium	80.0	72.7		ug/L		91	85 - 115
Cadmium	80.0	74.4		ug/L		93	85 - 115
Chromium	80.0	74.3		ug/L		93	85 - 115
Copper	80.0	74.2		ug/L		93	85 - 115
Iron	800	772		ug/L		97	85 - 115
Manganese	80.0	75.2		ug/L		94	85 - 115
Nickel	80.0	74.0		ug/L		92	85 - 115
Lead	80.0	75.3		ug/L		94	85 - 115
Antimony	80.0	76.0		ug/L		95	85 - 115
Selenium	80.0	71.7		ug/L		90	85 - 115
Thallium	80.0	74.8		ug/L		93	85 - 115

Lab Sample ID: LCSD 570-290573/3-A
Matrix: Water
Analysis Batch: 290920

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	68.4		ug/L		85	85 - 115	12	20
Silver	80.0	71.6		ug/L		90	85 - 115	3	20
Arsenic	80.0	72.2		ug/L		90	85 - 115	3	20
Barium	80.0	74.0		ug/L		92	85 - 115	3	20
Beryllium	80.0	71.8		ug/L		90	85 - 115	1	20
Cadmium	80.0	71.8		ug/L		90	85 - 115	3	20
Chromium	80.0	72.7		ug/L		91	85 - 115	2	20
Copper	80.0	73.1		ug/L		91	85 - 115	2	20
Iron	800	752		ug/L		94	85 - 115	3	20
Manganese	80.0	73.6		ug/L		92	85 - 115	2	20
Nickel	80.0	71.6		ug/L		89	85 - 115	3	20
Lead	80.0	72.9		ug/L		91	85 - 115	3	20
Antimony	80.0	73.7		ug/L		92	85 - 115	3	20
Selenium	80.0	68.3		ug/L		85	85 - 115	5	20
Thallium	80.0	72.2		ug/L		90	85 - 115	4	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-289102/1
Matrix: Water
Analysis Batch: 289102

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			12/14/22 18:39	1

Lab Sample ID: LCS 570-289102/2
Matrix: Water
Analysis Batch: 289102

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	108		mg/L		108	77 - 116		

Lab Sample ID: LCSD 570-289102/3
Matrix: Water
Analysis Batch: 289102

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	115		mg/L		115	77 - 116	6	10

Lab Sample ID: 570-120081-A-1 DU
Matrix: Water
Analysis Batch: 289102

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	110			107		mg/L				0.4	10

Method: SM 4500 CN E - Cyanide, Total (Low Level)

Lab Sample ID: MB 440-673416/1-A
Matrix: Water
Analysis Batch: 673417

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 673416

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L		12/19/22 14:06	12/19/22 19:05	1

Lab Sample ID: LCS 440-673416/2-A
Matrix: Water
Analysis Batch: 673417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 673416

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			100	96.8		ug/L		97	80 - 120		

Lab Sample ID: LCSD 440-673416/3-A
Matrix: Water
Analysis Batch: 673417

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 673416

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			100	111		ug/L		111	80 - 120	14	20

Method: SM 4500 CN E - Cyanide, Total (Low Level) (Continued)

Lab Sample ID: 570-120290-C-4-C MS
Matrix: Water
Analysis Batch: 673417

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 673416

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	ND		100	102		ug/L		102	75 - 125

Lab Sample ID: 570-120290-C-4-D MSD
Matrix: Water
Analysis Batch: 673417

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 673416

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		100	104		ug/L		104	75 - 125	2	20

Lab Sample ID: 570-120290-C-4-E DU
Matrix: Water
Analysis Batch: 673417

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 673416

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cyanide, Total	ND		ND		ug/L		NC	

GC/MS VOA

Analysis Batch: 290331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	624.1	
MB 570-290331/7	Method Blank	Total/NA	Water	624.1	
LCS 570-290331/4	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-290331/5	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 289215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	625	

Analysis Batch: 291381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	625.1 SIM	289215

HPLC/IC

Analysis Batch: 288424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	218.6	
MB 570-288424/4	Method Blank	Total/NA	Water	218.6	
LCS 570-288424/5	Lab Control Sample	Total/NA	Water	218.6	
LCSD 570-288424/6	Lab Control Sample Dup	Total/NA	Water	218.6	
570-120392-N-1 MS	Matrix Spike	Total/NA	Water	218.6	
570-120392-N-1 MSD	Matrix Spike Duplicate	Total/NA	Water	218.6	

Analysis Batch: 288808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	218.6	288824
MB 570-288824/1-A	Method Blank	Dissolved	Water	218.6	288824
LCS 570-288824/2-A	Lab Control Sample	Dissolved	Water	218.6	288824
LCSD 570-288824/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	288824
570-120471-1 MS	BGBMP0003_20221211	Dissolved	Water	218.6	288824
570-120471-1 MSD	BGBMP0003_20221211	Dissolved	Water	218.6	288824

Analysis Batch: 288811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	300.0	
MB 570-288811/5	Method Blank	Total/NA	Water	300.0	
LCS 570-288811/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-288811/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-120683-H-8 MS	Matrix Spike	Total/NA	Water	300.0	
570-120683-H-8 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 288812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	300.0	
MB 570-288812/5	Method Blank	Total/NA	Water	300.0	
LCS 570-288812/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-288812/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-120683-H-8 MS	Matrix Spike	Total/NA	Water	300.0	
570-120683-H-8 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

HPLC/IC

Filtration Batch: 288824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	Filtration	
MB 570-288824/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-288824/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-288824/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-120471-1 MS	BGBMP0003_20221211	Dissolved	Water	Filtration	
570-120471-1 MSD	BGBMP0003_20221211	Dissolved	Water	Filtration	

Analysis Batch: 288984

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	314.0	
MB 570-288984/7	Method Blank	Total/NA	Water	314.0	
LCS 570-288984/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-288984/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-120548-A-1 MS	Matrix Spike	Total/NA	Water	314.0	
570-120548-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Metals

Prep Batch: 289608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total Recoverable	Water	200.8	
MB 570-289608/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-289608/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-289608/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-120461-C-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	
570-120461-C-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Prep Batch: 289609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total Recoverable	Water	200.7	
MB 570-289609/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-289609/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-289609/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-120354-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.7	
570-120354-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Analysis Batch: 289800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-289608/1-A	Method Blank	Total Recoverable	Water	200.8	289608
LCS 570-289608/2-A	Lab Control Sample	Total Recoverable	Water	200.8	289608
LCSD 570-289608/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	289608

Analysis Batch: 289839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total Recoverable	Water	200.8	289608
570-120461-C-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	289608
570-120461-C-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	289608

Analysis Batch: 290463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total Recoverable	Water	200.7 Rev 4.4	289609

Metals (Continued)

Analysis Batch: 290463 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-289609/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	289609
LCS 570-289609/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	289609
LCSD 570-289609/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	289609
570-120354-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	289609
570-120354-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	289609

Filtration Batch: 290573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	Filtration	
MB 570-290573/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-290573/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-290573/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Filtration Batch: 290587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	Filtration	
MB 570-290587/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-290587/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-290587/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 290920

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	200.8	290573
MB 570-290573/1-A	Method Blank	Dissolved	Water	200.8	290573
LCS 570-290573/2-A	Lab Control Sample	Dissolved	Water	200.8	290573
LCSD 570-290573/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	290573

Analysis Batch: 291076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	200.7 Rev 4.4	290587
MB 570-290587/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	290587
LCS 570-290587/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	290587
LCSD 570-290587/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	290587

General Chemistry

Analysis Batch: 289102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	SM 2540D	
MB 570-289102/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-289102/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-289102/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-120081-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 291899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	218.6 CR3	

Prep Batch: 673416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	Distill/CN	

General Chemistry (Continued)

Prep Batch: 673416 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-673416/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 440-673416/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
LCSD 440-673416/3-A	Lab Control Sample Dup	Total/NA	Water	Distill/CN	
570-120290-C-4-C MS	Matrix Spike	Total/NA	Water	Distill/CN	
570-120290-C-4-D MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
570-120290-C-4-E DU	Duplicate	Total/NA	Water	Distill/CN	

Analysis Batch: 673417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	SM 4500 CN E	673416
MB 440-673416/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	673416
LCS 440-673416/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	673416
LCSD 440-673416/3-A	Lab Control Sample Dup	Total/NA	Water	SM 4500 CN E	673416
570-120290-C-4-C MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	673416
570-120290-C-4-D MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	673416
570-120290-C-4-E DU	Duplicate	Total/NA	Water	SM 4500 CN E	673416

Geotechnical

Analysis Batch: 289052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: BGBMP0003_20221211

Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		2	5 mL	5 mL	290331	12/19/22 23:48	OH1	EET CAL 4
	Instrument ID: GCMSPP									
Total/NA	Prep	625			875.2 mL	2 mL	289215	12/16/22 05:31	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	291381	12/22/22 11:27	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Dissolved	Filtration	Filtration			100 mL	100 mL	288824	12/14/22 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	288808	12/14/22 11:39	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	288424	12/13/22 02:35	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	288811	12/14/22 17:24	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	288812	12/14/22 17:24	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	288984	12/14/22 16:46	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	290587	12/20/22 10:13	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			291076	12/21/22 13:17	P1R	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	289609	12/16/22 08:33	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			290463	12/20/22 09:30	P1R	EET CAL 4
	Instrument ID: ICP10									
Dissolved	Filtration	Filtration			50 mL	50 mL	290573	12/20/22 09:53	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			290920	12/20/22 16:27	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	289608	12/16/22 08:32	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			289839	12/16/22 15:36	C0YH	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	218.6 CR3		1			291899	12/27/22 10:58	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	289102	12/14/22 18:39	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	Distill/CN			50 mL	50 mL	673416	12/19/22 14:06		EET TUS 2
Total/NA	Analysis	SM 4500 CN E		1			673417	12/19/22 19:07	GG0B	EET TUS 2
	Instrument ID: Genesys30-5									
Total/NA	Analysis	D4464		1			289052	12/14/22 13:02	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET TUS 2 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120471-1
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-12-22 *

Laboratory: Eurofins Calscience

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	40CFR136A	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	40CFR136A	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	MCAWW	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 4500 CN E	Cyanide, Total (Low Level)	SM	EET TUS 2
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Distill/CN	Distillation, Cyanide	None	EET TUS 2
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
ASTM = ASTM International
EPA = US Environmental Protection Agency
MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494
EET TUS 2 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-1
SDG: 001, 002, 009 and/or 11 Watersheds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120471-1	BGBMP0003_20221211	Water	12/11/22 08:30	12/12/22 13:10

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Thursday, December 15, 2022 7:07 AM
To: Virendra Patel; Dominick, Mark
Cc: Rapp, Kerry; Staff, Kathleen
Subject: RE: BMP / ISRA Sampling -- ECI Job#570-120471 -- Container Issues.

EXTERNAL EMAIL*

Confirmed, please proceed

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 5:38 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>; Dominick, Mark <MDominick@haleyaldrich.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: BMP / ISRA Sampling -- ECI Job#570-120471 -- Container Issues.

CAUTION: External Email

Katherine and/or Mark –

The lab had the following receipt items for the subject job: 570-120471

570-120471 –

A. The laboratory received 500 ml unpreserved plastic instead of 500 ml plastic W/NaOH container for CN analysis on the following sample:
BGBMP0003_20221211 (570-120471-1).

The laboratory preserved the sample container with NaOH upon receipt at the lab.

B. The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following sample:
BGBMP0003_20221211 (570-120471-1).

The laboratory used the 1 Liter ambers to pour off an aliquot for Dissolved Mercury into 1 x 250ml amber unpreserved container

Please confirm the above actions taken are acceptable and the lab is to proceed with testing.

Best Regards,

Virendra Patel
Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, December 14, 2022 11:48 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

EXTERNAL EMAIL*

Which incorrect containers/preservatives?

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 12:43 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

CAUTION: External Email

Thank you Katherine.

The BMP field teams need to revisit COC procedures as well please for the following:
-- We have receiving insufficient volume and/or incorrect containers/preservatives.
-- We would also request the teams use darker pens and write more diligently, sample IDs are hard to make out when they are hand writing them in.

I understand the field teams have a lot to manage already out in the field – Containers and preservatives may seem minor, but this can have an impact on your analytical program. We will do all we can to help mitigate any project failures.

Best Regards,

Virendra Patel

Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

Follow Us! Facebook | LinkedIn

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, December 14, 2022 11:28 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

EXTERNAL EMAIL*

Virendra,

I'll go over sample receipt proofing with our staff. The NPDES Permit sampling is reviewed to the analyte/RL, but we haven't been as diligent about our training with these BMP samples. As for Uranium, the NPDES permit sampling reports "Uranium" and we want to match that for these samples.

Total Uranium
Dissolved Uranium

Thanks for checking,
Katherine

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 10:18 AM
To: Miller, Katherine <KMiller@haleyaldrich.com>
Cc: Dallalah, Michelle <MDallalah@haleyaldrich.com>; Godard, Vanessa <VGodard@haleyaldrich.com>; Gardiner, Nancy <NGardiner@haleyaldrich.com>
Subject: Uranium?
Importance: High

CAUTION: External Email

Katherine –

Good Morning. For the attached COC – Uranium reporting, what analytes are required?

For both Dissolved/Total – are we to include the full list for each fraction or a subset list for Uranium reporting?
Uranium-232
Uranium-234
Uranium-235/236
Uranium-238
Total Uranium
Dissolved Uranium

We sent out the attached SRC documents post receipt – I just noticed the limits document had the target analyte lists varying between Total/Dissolved Uranium? We didn't receive any comments on this? Someone on the Haley distribution is reviewing the SRC documents post receipt, correct? If not, going forward, may we please ensure a review is made to ensure have the analytical program correct.

Please confirm on the analyte list required, so I can move forward with report finalization/reporting on J116265 later today. In advance, thank you.

Best Regards,

Virendra Patel
Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

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www.EurofinsUS.com/Env

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Everg

1CU4T1

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number 129095-010-001-06				Job / SDG No..
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag Al, As, Ba Be, Cd, Cr Cu Fe, Mn Ni, Pb, Se, Sb, Tl Method 200.7: B, Zn – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Cr Cu, Fe, Mn Ni, Pb, Se, Sb, Tl Method 200.7: B, Zn – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
BGBMP0003_2022\211	12/11/22	0830	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

570-120471 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non- ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.. | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by	Company	Date/Time	Received by	Date/Time
	H A	12/12/22 1310	EC	12/12/22 1310
	EC	12/12/22 1710	EC	12-12-22 1710
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2.0/1.8, 3.3/3.1 SCII

12/28/2022

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note) State Program - California		Job #: 570-120471-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site.	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/FIII_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Trilium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20221211 (570-120471-1)	12/11/22	08 30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	2	Boeing SSFL DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 1433				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-202233 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120471-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20221211 (570-120471-1)	12/11/22	08 30 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12/21/22 1232				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120471-1
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120471
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 12/28/2022 8:56:36 AM

JOB DESCRIPTION

Boeing SSFL - BMP Performance
SDG NUMBER 001, 002, 009 and/or 11 Watersheds

JOB NUMBER

570-120471-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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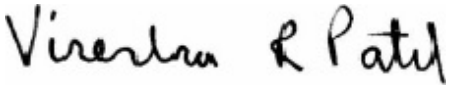
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
12/28/2022 8:56:36 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-2
SDG: 001, 002, 009 and/or 11 Watersheds

Qualifiers

Metals

Qualifier	Qualifier Description
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120471-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120471-2

Comments
No additional comments.

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 3.1º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following sample was received with insufficient preservation at a pH of >2 SU: BGBMP0003_20221211 (570-120471-1). 570-120471-U-1. The sample was preserved to the appropriate pH in the laboratory.

The laboratory received 500 ml unpreserved plastic instead of 500 ml plastic W/NaOH container for CN analysis on the following sample: BGBMP0003_20221211 (570-120471-1). CN container was preserved at the lab..

The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following sample: BGBMP0003_20221211 (570-120471-1). Aliquott was taken from 1L Amber glass container.

The clients office was contacted with the above sample receipt anomalies. The laboratory was provided written direction on how to proceed, please refer to the COC section of the report for further details.

Metals
Method 1631E: The matrix spike duplicate (MSD) recoveries for analytical batch 580-413631 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 1631E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 580-413631 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-2
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: BGBMP0003_20221211 — Lab Sample ID: 570-120471-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.016		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.015		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-2
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.016		0.00050	0.000079	ug/L			12/21/22 17:10	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-2
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.015		0.00050	0.000079	ug/L			12/21/22 17:15	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-413631/23 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 413631

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lid-mda	uD		0,00050	0,00007G	mB9F			129219221N:01	1

Lab Sample ID: MB 580-413631/24 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 413631

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lid-mda	uD		0,00050	0,00007G	mB9F			129219221N:08	1

Lab Sample ID: MB 580-413631/25 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 413631

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lid-mda	uD		0,00050	0,00007G	mB9F			129219221N:10	1

Lab Sample ID: LCS 580-413631/31 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 413631

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lid-mda	0,00500	0,004NG		mB9F		33	77 - 12N

Lab Sample ID: LCSD 580-413631/32 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 413631

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lid-mda	0,00500	0,00515		mB9F		10N	77 - 12N	18	24

Lab Sample ID: 570-120285-H-4 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 413631

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Lid-mda	0,01N		0,0150	0,02N0	Fu	mB9F		8G	71 - 125

Lab Sample ID: 570-120285-H-4 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 413631

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lid-mda	0,01N		0,0150	0,022N	Fu	mB9F		84	71 - 125	N	24

Lab Sample ID: 570-120466-C-5 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 413631

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Lid-mda	0,018		0,0200	0,0N53		mB9F		GG	71 - 125

QC Sample Results

6 Client HCay & Adrchler, Job ID: 570-120471-2
sdbPrn9 lni:j oileB. . gF-j L s sidMdf Heri . DS: 001h002h00GHeA9od11 / Hni dWci AW

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 570-120466-C-5 MSD
Matrix: Water
Analysis Batch: 413631

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lid-mda	0,018		0,0200	0,0N40		mB9F		3G	71 - 125	5	24

Lab Sample ID: MB 580-413056/1-A
Matrix: Water
Analysis Batch: 413392

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lid-mda	uD		0,00050	0,00007G	mB9F			1291G922 17:11	1

EmdbMeW6 HOWlieri

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120471-2
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Metals

Filtration Batch: 413056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	Filtration	
MB 580-413056/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 413392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 580-413056/1-A	Method Blank	Dissolved	Water	1631E	413056

Analysis Batch: 413631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	1631E	413056
570-120471-1	BGBMP0003_20221211	Total/NA	Water	1631E	
MB 580-413631/23	Method Blank	Total/NA	Water	1631E	
MB 580-413631/24	Method Blank	Total/NA	Water	1631E	
MB 580-413631/25	Method Blank	Total/NA	Water	1631E	
LCS 580-413631/31	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-413631/32	Lab Control Sample Dup	Total/NA	Water	1631E	
570-120285-H-4 MS	Matrix Spike	Total/NA	Water	1631E	
570-120285-H-4 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
570-120466-C-5 MS	Matrix Spike	Total/NA	Water	1631E	
570-120466-C-5 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-120471-2
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: BGBMP0003_20221211
Lab Sample ID: 570-120471-1
Date Collected: 12/11/22 08:30
Matrix: Water
Date Received: 12/12/22 13:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	125 mL	413056	12/15/22 14:37	DRM	EET SEA
Dissolved	Analysis	1631E		1			413631	12/21/22 17:15	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			413631	12/21/22 17:10	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120471-2
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	P330-20-00031	12-31-22
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-2
SDG: 001, 002, 009 and/or 11 Watersheds

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-2
SDG: 001, 002, 009 and/or 11 Watersheds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120471-1	BGBMP0003_20221211	Water	12/11/22 08:30	12/12/22 13:10

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Thursday, December 15, 2022 7:07 AM
To: Virendra Patel; Dominick, Mark
Cc: Rapp, Kerry; Staff, Kathleen
Subject: RE: BMP / ISRA Sampling -- ECI Job#570-120471 -- Container Issues.

EXTERNAL EMAIL*

Confirmed, please proceed

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 5:38 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>; Dominick, Mark <MDominick@haleyaldrich.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: BMP / ISRA Sampling -- ECI Job#570-120471 -- Container Issues.

CAUTION: External Email

Katherine and/or Mark –

The lab had the following receipt items for the subject job: 570-120471

570-120471 –

A. The laboratory received 500 ml unpreserved plastic instead of 500 ml plastic W/NaOH container for CN analysis on the following sample:
BGBMP0003_20221211 (570-120471-1).

The laboratory preserved the sample container with NaOH upon receipt at the lab.

B. The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following sample:
BGBMP0003_20221211 (570-120471-1).

The laboratory used the 1 Liter ambers to pour off an aliquot for Dissolved Mercury into 1 x 250ml amber unpreserved container

Please confirm the above actions taken are acceptable and the lab is to proceed with testing.

Best Regards,

Virendra Patel
Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, December 14, 2022 11:48 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

EXTERNAL EMAIL*

Which incorrect containers/preservatives?

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 12:43 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

CAUTION: External Email

Thank you Katherine.

The BMP field teams need to revisit COC procedures as well please for the following:
-- We have receiving insufficient volume and/or incorrect containers/preservatives.
-- We would also request the teams use darker pens and write more diligently, sample IDs are hard to make out when they are hand writing them in.

I understand the field teams have a lot to manage already out in the field – Containers and preservatives may seem minor, but this can have an impact on your analytical program. We will do all we can to help mitigate any project failures.

Best Regards,

Virendra Patel

Project Manager



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2841 Dow Avenue, Suite 100
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Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
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From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, December 14, 2022 11:28 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

EXTERNAL EMAIL*

Virendra,

I'll go over sample receipt proofing with our staff. The NPDES Permit sampling is reviewed to the analyte/RL, but we haven't been as diligent about our training with these BMP samples. As for Uranium, the NPDES permit sampling reports "Uranium" and we want to match that for these samples.

Total Uranium
Dissolved Uranium

Thanks for checking,
Katherine

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 10:18 AM
To: Miller, Katherine <KMiller@haleyaldrich.com>
Cc: Dallalah, Michelle <MDallalah@haleyaldrich.com>; Godard, Vanessa <VGodard@haleyaldrich.com>; Gardiner, Nancy <NGardiner@haleyaldrich.com>
Subject: Uranium?
Importance: High

CAUTION: External Email

Katherine –

Good Morning. For the attached COC – Uranium reporting, what analytes are required?

For both Dissolved/Total – are we to include the full list for each fraction or a subset list for Uranium reporting?
Uranium-232
Uranium-234
Uranium-235/236
Uranium-238
Total Uranium
Dissolved Uranium

We sent out the attached SRC documents post receipt – I just noticed the limits document had the target analyte lists varying between Total/Dissolved Uranium? We didn't receive any comments on this? Someone on the Haley distribution is reviewing the SRC documents post receipt, correct? If not, going forward, may we please ensure a review is made to ensure have the analytical program correct.

Please confirm on the analyte list required, so I can move forward with report finalization/reporting on J116265 later today. In advance, thank you.

Best Regards,

Virendra Patel
Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
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Mobile: 714-887-9901

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1CU4T1

Every

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number 129095-010-001-06				Job / SDG No..
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag Al, As, Ba Be, Cd, Cr Cu Fe, Mn Ni, Pb, Se, Sb, Tl Method 200.7: B, Zn – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Cr Cu, Fe, Mn Ni, Pb, Se, Sb, Tl Method 200.7: B, Zn – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
BGBMP0003_2022\211	12/11/22	0830	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

570-120471 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non- ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.. | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by	Company	Date/Time	Received by	Date/Time
	H A	12/12/22 1310	EC	12/12/22 1310
	EC	12/12/22 1710	EC	12-12-22 1710
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2.0/1.8, 3.3/3.1 SCII

Page 21 of 29

12/28/2022

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note) State Program - California		Job #: 570-120471-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site.	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/FIII_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Trilium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20221211 (570-120471-1)	12/11/22	08 30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	2	Boeing SSFL DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 1433				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

12/28/2022

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-202233 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120471-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/_Mercury_Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20221211 (570-120471-1)	12/11/22	08 30 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/21/22 1232				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

12/28/2022

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201223.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120471-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20221211 (570-120471-1)	12/11/22	08:30 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 12/14/22 10:50	Company EC	Received by:	Date/Time: 12/15/22 9:30	Company EPLS		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: NP | Cooler Temperature(s) °C and Other Remarks: -0.2 1.2 0.7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201267.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120471-2
Address: 5755 8th Street East,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20221211 (570-120471-1)	12/11/22	08:30 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 13:15	EC		12/15/22 9:36	EPLS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: -0.5 Dy 3 -1.0

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201267.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120471-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20221211 (570-120471-1)	12/11/22	08:30 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 12/14/22 13:15	Company EC	Received by:
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Received by:	Date/Time: 12/15/22 9:36	Company EPLS		
Received by:	Date/Time:	Company		
Received by:	Date/Time:	Company		

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: -0.5 Dy 3 -1.1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-202233.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120471-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			Preservation Codes:
City: Tacoma	TAT Requested (days):			A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify); Other:
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	~~1631/245 Mercury, Total~~	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20221211 (570-120471-1)	12/11/22	08:30 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12/21/22 1232			12/22/22 10:35	EFGS
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: 6226 1904 5494	Cooler Temperature(s) °C and Other Remarks: Sm Blue -0.1 D.y4 0.2

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120471-2
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120471
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120471-2
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120471
List Number: 4
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 12/15/22 02:36 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/26/2023 4:51:19 PM

JOB DESCRIPTION

Boeing SSFL - BMP Performance
SDG NUMBER 001, 002, 009 and/or 11 Watersheds

JOB NUMBER

570-120471-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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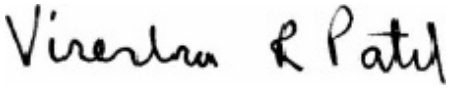
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-3
SDG: 001, 002, 009 and/or 11 Watersheds

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120471-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120471-3

Comments
No additional comments.

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 3.1º C.

Dioxin
Method 1613B: The continuing calibration verification (CCV) associated with batch 320-648563 recovered above the upper control limit for 2,3,7,8-TCDF. The samples associated with this CCV had no detection over the reporting limit (RL) for the affected analyte and samples with any estimated detections below the reporting limit were analyzed on a second column for confirmation; therefore, the data have been reported.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: BGBMP0003_20221211 (570-120471-1), (CCV 320-648980/2) and (MB 320-644230/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: The continuing calibration verification (CCV) associated with batch 320-648980 recovered above the upper control limit for the surrogate 37Cl4-2,3,7,8-TCDD. The surrogate is not used in the quantitation of any target analytes but used to monitor the efficiency of any cleanup steps done during the extraction process. The samples associated with this CCV were within limits for the surrogate; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-3
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: BGBMP0003_20221211

Lab Sample ID: 570-120471-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.00000060	J,DX MB q	0.000050	0.000000098	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000064	J,DX q	0.000050	0.00000011	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000016	J,DX MB q	0.000050	0.000000067	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000046	J,DX MB q	0.000050	0.000000073	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000045	J,DX MB q	0.000050	0.000000063	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000022	J,DX MB	0.000050	0.000000096	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000091	J,DX MB q	0.000050	0.000000098	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000074	J,DX MB q	0.000050	0.00000010	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000015	J,DX MB q	0.000050	0.000000093	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000044	J,DX MB	0.000050	0.00000013	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000080	J,DX MB	0.000050	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000040	J,DX MB q	0.000050	0.00000013	ug/L	1		1613B	Total/NA
OCDD	0.000028	J,DX MB	0.00010	0.00000026	ug/L	1		1613B	Total/NA
OCDF	0.0000042	J,DX MB q	0.00010	0.00000019	ug/L	1		1613B	Total/NA
Total TCDF	0.0000020	J,DX MB	0.000010	0.000000072	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000033	J,DX MB q	0.000050	0.000000098	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000058	J,DX MB q	0.000050	0.000000063	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000077	J,DX MB q	0.000050	0.000000093	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000084	J,DX MB	0.000050	0.00000013	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000097	J,DX MB q	0.000050	0.00000012	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000034	ug/L		01/03/23 13:01	01/21/23 10:23	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000012	ug/L		01/03/23 13:01	01/21/23 10:23	1
1,2,3,7,8-PeCDF	**0.00000060**	**J,DX MB q**	0.000050	0.00000098	ug/L		01/03/23 13:01	01/21/23 10:23	1
2,3,4,7,8-PeCDF	**0.00000064**	**J,DX q**	0.000050	0.00000011	ug/L		01/03/23 13:01	01/21/23 10:23	1
1,2,3,4,7,8-HxCDD	**0.0000016**	**J,DX MB q**	0.000050	0.00000067	ug/L		01/03/23 13:01	01/21/23 10:23	1
1,2,3,6,7,8-HxCDD	**0.00000046**	**J,DX MB q**	0.000050	0.00000073	ug/L		01/03/23 13:01	01/21/23 10:23	1
1,2,3,7,8,9-HxCDD	**0.00000045**	**J,DX MB q**	0.000050	0.00000063	ug/L		01/03/23 13:01	01/21/23 10:23	1
1,2,3,4,7,8-HxCDF	**0.0000022**	**J,DX MB**	0.000050	0.00000096	ug/L		01/03/23 13:01	01/21/23 10:23	1
1,2,3,6,7,8-HxCDF	**0.00000091**	**J,DX MB q**	0.000050	0.00000098	ug/L		01/03/23 13:01	01/21/23 10:23	1
1,2,3,7,8,9-HxCDF	**0.00000074**	**J,DX MB q**	0.000050	0.00000010	ug/L		01/03/23 13:01	01/21/23 10:23	1
2,3,4,6,7,8-HxCDF	**0.0000015**	**J,DX MB q**	0.000050	0.00000093	ug/L		01/03/23 13:01	01/21/23 10:23	1
1,2,3,4,6,7,8-HpCDD	**0.0000044**	**J,DX MB**	0.000050	0.00000013	ug/L		01/03/23 13:01	01/21/23 10:23	1
1,2,3,4,6,7,8-HpCDF	**0.0000080**	**J,DX MB**	0.000050	0.00000012	ug/L		01/03/23 13:01	01/21/23 10:23	1
1,2,3,4,7,8,9-HpCDF	**0.00000040**	**J,DX MB q**	0.000050	0.00000013	ug/L		01/03/23 13:01	01/21/23 10:23	1
OCDD	**0.000028**	**J,DX MB**	0.00010	0.00000026	ug/L		01/03/23 13:01	01/21/23 10:23	1
OCDF	**0.0000042**	**J,DX MB q**	0.00010	0.00000019	ug/L		01/03/23 13:01	01/21/23 10:23	1
Total TCDD	ND		0.000010	0.00000034	ug/L		01/03/23 13:01	01/21/23 10:23	1
Total TCDF	**0.0000020**	**J,DX MB**	0.000010	0.00000072	ug/L		01/03/23 13:01	01/21/23 10:23	1
Total PeCDD	ND		0.000050	0.00000012	ug/L		01/03/23 13:01	01/21/23 10:23	1
Total PeCDF	**0.0000033**	**J,DX MB q**	0.000050	0.00000098	ug/L		01/03/23 13:01	01/21/23 10:23	1
Total HxCDD	**0.0000058**	**J,DX MB q**	0.000050	0.00000063	ug/L		01/03/23 13:01	01/21/23 10:23	1
Total HxCDF	**0.0000077**	**J,DX MB q**	0.000050	0.00000093	ug/L		01/03/23 13:01	01/21/23 10:23	1
Total HpCDD	**0.0000084**	**J,DX MB**	0.000050	0.00000013	ug/L		01/03/23 13:01	01/21/23 10:23	1
Total HpCDF	**0.0000097**	**J,DX MB q**	0.000050	0.00000012	ug/L		01/03/23 13:01	01/21/23 10:23	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 106*	*41/43/23 13:41*	*41/21/23 14:23*	*1*
13C-2,3,7,8-TCDF	*09*		*26 - 109*	*41/43/23 13:41*	*41/21/23 14:23*	*1*
13C-1,2,3,7,8-PeCDD	*87*		*25 - 181*	*41/43/23 13:41*	*41/21/23 14:23*	*1*
13C-1,2,3,7,8-PeCDF	*84*		*26 - 185*	*41/43/23 13:41*	*41/21/23 14:23*	*1*
13C-2,3,6,7,8-PeCDF	*79*		*21 - 178*	*41/43/23 13:41*	*41/21/23 14:23*	*1*
13C-1,2,3,6,7,8-HxCDD	*95*		*32 - 161*	*41/43/23 13:41*	*41/21/23 14:23*	*1*
13C-1,2,3,0,7,8-HxCDD	*78*		*28 - 134*	*41/43/23 13:41*	*41/21/23 14:23*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDF	95		20 - 152	41/43/23 13:41	41/21/23 14:23	1
13C-1,2,3,0,7,8-HxCDF	91		20 - 123	41/43/23 13:41	41/21/23 14:23	1
13C-1,2,3,7,8,9-HxCDF	92		29 - 167	41/43/23 13:41	41/21/23 14:23	1
13C-2,3,6,0,7,8-HxCDF	90		28 - 130	41/43/23 13:41	41/21/23 14:23	1
13C-1,2,3,6,0,7,8-HpCDD	98		23 - 164	41/43/23 13:41	41/21/23 14:23	1
13C-1,2,3,6,0,7,8-HpCDF	94		28 - 163	41/43/23 13:41	41/21/23 14:23	1
13C-1,2,3,6,7,8,9-HpCDF	142		20 - 138	41/43/23 13:41	41/21/23 14:23	1
13C-OCDD	143		17 - 157	41/43/23 13:41	41/21/23 14:23	1
13C-OCDF	112		17 - 157	41/43/23 13:41	41/21/23 14:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	94		35 - 197	41/43/23 13:41	41/21/23 14:23	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-3
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.0000012	ug/L		01/03/23 13:01	01/25/23 12:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*80*		*26 - 109*	*41/43/23 13:41*	*41/25/23 12:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*114*		*35 - 197*	*41/43/23 13:41*	*41/25/23 12:56*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-3
SDG: 001, 002, 009 and/or 11 Watersheds

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-120471-1	BGBMP0003_20221211	90
570-120471-1 - RA	BGBMP0003_20221211	110
MB 320-644230/1-A	Method Blank	91
MB 320-644230/1-A - RA	Method Blank	118

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-644230/2-A	Lab Control Sample	89
LCSD 320-644230/3-A	Lab Control Sample Dup	91

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-3
SDG: 001, 002, 009 and/or 11 Watersheds

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-120471-1	BGBMP0003_20221211	76	69	87	80	79	95	78	95
570-120471-1 - RA	BGBMP0003_20221211		86						
MB 320-644230/1-A	Method Blank	72	68	85	78	79	92	78	89
MB 320-644230/1-A - RA	Method Blank		85						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-120471-1	BGBMP0003_20221211	91	92	96	98	90	102	103	112
570-120471-1 - RA	BGBMP0003_20221211								
MB 320-644230/1-A	Method Blank	86	92	93	103	88	104	111	120
MB 320-644230/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-644230/2-A	Lab Control Sample	69	64	78	73	71	85	76	86
LCSD 320-644230/3-A	Lab Control Sample Dup	74	68	86	79	79	92	80	91

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-644230/2-A	Lab Control Sample	82	88	91	96	86	99	102	111
LCSD 320-644230/3-A	Lab Control Sample Dup	88	90	94	102	88	102	107	118

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120471-3
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-644230/1-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 644230

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000033	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000020	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8-PeCDF	0.000000846	J,DX	0.000050	0.00000012	ug/L		01/03/23 13:01	01/21/23 03:10	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,7,8-HxCDD	0.00000177	J,DX q	0.000050	0.00000019	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,6,7,8-HxCDD	0.000000898	J,DX	0.000050	0.00000021	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8,9-HxCDD	0.00000254	J,DX	0.000050	0.00000018	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,7,8-HxCDF	0.000000787	J,DX	0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,6,7,8-HxCDF	0.000000819	J,DX q	0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,7,8,9-HxCDF	0.00000130	J,DX	0.000050	0.00000014	ug/L		01/03/23 13:01	01/21/23 03:10	1
2,3,4,6,7,8-HxCDF	0.000000412	J,DX q	0.000050	0.00000013	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,6,7,8-HpCDD	0.00000559	J,DX	0.000050	0.00000030	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,6,7,8-HpCDF	0.00000445	J,DX	0.000050	0.00000024	ug/L		01/03/23 13:01	01/21/23 03:10	1
1,2,3,4,7,8,9-HpCDF	0.00000348	J,DX	0.000050	0.00000024	ug/L		01/03/23 13:01	01/21/23 03:10	1
OCDD	0.0000294	J,DX	0.00010	0.00000059	ug/L		01/03/23 13:01	01/21/23 03:10	1
OCDF	0.00000261	J,DX	0.00010	0.00000046	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total TCDD	ND		0.000010	0.00000033	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total TCDF	0.00000235	J,DX	0.000010	0.00000019	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total PeCDD	ND		0.000050	0.00000020	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total PeCDF	0.000000846	J,DX	0.000050	0.00000012	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HxCDD	0.00000689	J,DX q	0.000050	0.00000018	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HxCDF	0.00000670	J,DX q	0.000050	0.00000013	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HpCDD	0.0000111	J,DX	0.000050	0.00000030	ug/L		01/03/23 13:01	01/21/23 03:10	1
Total HpCDF	0.00000861	J,DX	0.000050	0.00000024	ug/L		01/03/23 13:01	01/21/23 03:10	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*72*		*25 - 164*	*01/03/23 13:01*	*01/21/23 03:10*	*1*
13C-2,3,7,8-TCDF	*68*		*24 - 169*	*01/03/23 13:01*	*01/21/23 03:10*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*25 - 181*	*01/03/23 13:01*	*01/21/23 03:10*	*1*
13C-1,2,3,7,8-PeCDF	*78*		*24 - 185*	*01/03/23 13:01*	*01/21/23 03:10*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-644230/1-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 644230

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	79		21 - 178	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,7,8-HxCDD	92		32 - 141	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,6,7,8-HxCDD	78		28 - 130	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,7,8-HxCDF	89		26 - 152	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,6,7,8-HxCDF	86		26 - 123	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,7,8,9-HxCDF	92		29 - 147	01/03/23 13:01	01/21/23 03:10	1
13C-2,3,4,6,7,8-HxCDF	93		28 - 136	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,6,7,8-HpCDD	103		23 - 140	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,6,7,8-HpCDF	88		28 - 143	01/03/23 13:01	01/21/23 03:10	1
13C-1,2,3,4,7,8,9-HpCDF	104		26 - 138	01/03/23 13:01	01/21/23 03:10	1
13C-OCDD	111		17 - 157	01/03/23 13:01	01/21/23 03:10	1
13C-OCDF	120		17 - 157	01/03/23 13:01	01/21/23 03:10	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	01/03/23 13:01	01/21/23 03:10	1

Lab Sample ID: LCS 320-644230/2-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 644230

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000190		ug/L		95	67 - 158
2,3,7,8-TCDF	0.000200	0.000230		ug/L		115	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000891		ug/L		89	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000890		ug/L		89	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000882		ug/L		88	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000883		ug/L		88	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000987		ug/L		99	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000917		ug/L		92	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000938		ug/L		94	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000960		ug/L		96	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000959		ug/L		96	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000942		ug/L		94	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000899		ug/L		90	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000993		ug/L		99	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000890		ug/L		89	78 - 138
OCDD	0.00200	0.00200		ug/L		100	78 - 144
OCDF	0.00200	0.00196		ug/L		98	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	69		20 - 175
13C-2,3,7,8-TCDF	64		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 192
13C-2,3,4,7,8-PeCDF	71		13 - 328
13C-1,2,3,4,7,8-HxCDD	85		21 - 193
13C-1,2,3,6,7,8-HxCDD	76		25 - 163
13C-1,2,3,4,7,8-HxCDF	86		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-644230/2-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 644230

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	82		21 - 159
13C-1,2,3,7,8,9-HxCDF	88		17 - 205
13C-2,3,4,6,7,8-HxCDF	91		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	96		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	86		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	99		20 - 186
13C-OCDD	102		13 - 199
13C-OCDF	111		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	89		31 - 191

Lab Sample ID: LCSD 320-644230/3-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 644230

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000203		ug/L		102	67 - 158	7	50
2,3,7,8-TCDF			0.000200	0.000231		ug/L		115	75 - 158	0	50
1,2,3,7,8-PeCDD			0.00100	0.000886		ug/L		89	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.000923		ug/L		92	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.000911		ug/L		91	68 - 160	3	50
1,2,3,4,7,8-HxCDD			0.00100	0.000910		ug/L		91	70 - 164	3	50
1,2,3,6,7,8-HxCDD			0.00100	0.00104		ug/L		104	76 - 134	5	50
1,2,3,7,8,9-HxCDD			0.00100	0.000959		ug/L		96	64 - 162	4	50
1,2,3,4,7,8-HxCDF			0.00100	0.000971		ug/L		97	72 - 134	3	50
1,2,3,6,7,8-HxCDF			0.00100	0.000997		ug/L		100	84 - 130	4	50
1,2,3,7,8,9-HxCDF			0.00100	0.00102		ug/L		102	78 - 130	6	50
2,3,4,6,7,8-HxCDF			0.00100	0.000987		ug/L		99	70 - 156	5	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000924		ug/L		92	70 - 140	3	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00105		ug/L		105	82 - 122	6	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000942		ug/L		94	78 - 138	6	50
OCDD			0.00200	0.00209		ug/L		104	78 - 144	4	50
OCDF			0.00200	0.00200		ug/L		100	63 - 170	2	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	74		20 - 175
13C-2,3,7,8-TCDF	68		22 - 152
13C-1,2,3,7,8-PeCDD	86		21 - 227
13C-1,2,3,7,8-PeCDF	79		21 - 192
13C-2,3,4,7,8-PeCDF	79		13 - 328
13C-1,2,3,4,7,8-HxCDD	92		21 - 193
13C-1,2,3,6,7,8-HxCDD	80		25 - 163
13C-1,2,3,4,7,8-HxCDF	91		19 - 202
13C-1,2,3,6,7,8-HxCDF	88		21 - 159
13C-1,2,3,7,8,9-HxCDF	90		17 - 205
13C-2,3,4,6,7,8-HxCDF	94		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	102		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-644230/3-A
Matrix: Water
Analysis Batch: 648563

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 644230

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	88		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	102		20 - 186
13C-OCDD	107		13 - 199
13C-OCDF	118		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	91		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-644230/1-A
Matrix: Water
Analysis Batch: 648980

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 644230

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.0000013	ug/L		01/03/23 13:01	01/25/23 13:31	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	85		24 - 169	01/03/23 13:01	01/25/23 13:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	118		35 - 197	01/03/23 13:01	01/25/23 13:31	1

Specialty Organics

Prep Batch: 644230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1 - RA	BGBMP0003_20221211	Total/NA	Water	1613B	
570-120471-1	BGBMP0003_20221211	Total/NA	Water	1613B	
MB 320-644230/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-644230/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-644230/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-644230/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 648563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	1613B	644230
MB 320-644230/1-A	Method Blank	Total/NA	Water	1613B	644230
LCS 320-644230/2-A	Lab Control Sample	Total/NA	Water	1613B	644230
LCSD 320-644230/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	644230

Analysis Batch: 648980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1 - RA	BGBMP0003_20221211	Total/NA	Water	1613B	644230
MB 320-644230/1-A - RA	Method Blank	Total/NA	Water	1613B	644230

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-120471-3
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: BGBMP0003_20221211
Lab Sample ID: 570-120471-1

Date Collected: 12/11/22 08:30
Matrix: Water
Date Received: 12/12/22 13:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1000.1 mL	20.0 uL	644230	01/03/23 13:01	CGB	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	648980	01/25/23 12:54	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1000.1 mL	20.0 uL	644230	01/03/23 13:01	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	648563	01/21/23 10:23	SMA	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120471-3
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-31-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-30-23
Hawaii	State	<cert No.>	01-29-23
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-3
SDG: 001, 002, 009 and/or 11 Watersheds

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-3
SDG: 001, 002, 009 and/or 11 Watersheds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120471-1	BGBMP0003_20221211	Water	12/11/22 08:30	12/12/22 13:10

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Thursday, December 15, 2022 7:07 AM
To: Virendra Patel; Dominick, Mark
Cc: Rapp, Kerry; Staff, Kathleen
Subject: RE: BMP / ISRA Sampling -- ECI Job#570-120471 -- Container Issues.

EXTERNAL EMAIL*

Confirmed, please proceed

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 5:38 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>; Dominick, Mark <MDominick@haleyaldrich.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: BMP / ISRA Sampling -- ECI Job#570-120471 -- Container Issues.

CAUTION: External Email

Katherine and/or Mark –

The lab had the following receipt items for the subject job: 570-120471

570-120471 –

A. The laboratory received 500 ml unpreserved plastic instead of 500 ml plastic W/NaOH container for CN analysis on the following sample:
BGBMP0003_20221211 (570-120471-1).

The laboratory preserved the sample container with NaOH upon receipt at the lab.

B. The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following sample:
BGBMP0003_20221211 (570-120471-1).

The laboratory used the 1 Liter ambers to pour off an aliquot for Dissolved Mercury into 1 x 250ml amber unpreserved container

Please confirm the above actions taken are acceptable and the lab is to proceed with testing.

Best Regards,

Virendra Patel
Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, December 14, 2022 11:48 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

EXTERNAL EMAIL*

Which incorrect containers/preservatives?

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 12:43 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

CAUTION: External Email

Thank you Katherine.

The BMP field teams need to revisit COC procedures as well please for the following:
-- We have receiving insufficient volume and/or incorrect containers/preservatives.
-- We would also request the teams use darker pens and write more diligently, sample IDs are hard to make out when they are hand writing them in.

I understand the field teams have a lot to manage already out in the field – Containers and preservatives may seem minor, but this can have an impact on your analytical program. We will do all we can to help mitigate any project failures.

Best Regards,

Virendra Patel

Project Manager



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2841 Dow Avenue, Suite 100
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Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, December 14, 2022 11:28 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

EXTERNAL EMAIL*

Virendra,

I'll go over sample receipt proofing with our staff. The NPDES Permit sampling is reviewed to the analyte/RL, but we haven't been as diligent about our training with these BMP samples. As for Uranium, the NPDES permit sampling reports "Uranium" and we want to match that for these samples.

Total Uranium
Dissolved Uranium

Thanks for checking,
Katherine

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 10:18 AM
To: Miller, Katherine <KMiller@haleyaldrich.com>
Cc: Dallalah, Michelle <MDallalah@haleyaldrich.com>; Godard, Vanessa <VGodard@haleyaldrich.com>; Gardiner, Nancy <NGardiner@haleyaldrich.com>
Subject: Uranium?
Importance: High

CAUTION: External Email

Katherine –

Good Morning. For the attached COC – Uranium reporting, what analytes are required?

For both Dissolved/Total – are we to include the full list for each fraction or a subset list for Uranium reporting?
Uranium-232
Uranium-234
Uranium-235/236
Uranium-238
Total Uranium
Dissolved Uranium

We sent out the attached SRC documents post receipt – I just noticed the limits document had the target analyte lists varying between Total/Dissolved Uranium? We didn't receive any comments on this? Someone on the Haley distribution is reviewing the SRC documents post receipt, correct? If not, going forward, may we please ensure a review is made to ensure have the analytical program correct.

Please confirm on the analyte list required, so I can move forward with report finalization/reporting on J116265 later today. In advance, thank you.

Best Regards,

Virendra Patel
Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

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Every

1CU4T1

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number 129095-010-001-06				Job / SDG No..
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag Al, As, Ba Be, Cd, Cr Cu Fe, Mn Ni, Pb, Se, Sb, Tl Method 200.7: B, Zn – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Cr Cu, Fe, Mn Ni, Pb, Se, Sb, Tl Method 200.7: B, Zn – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
BGBMP0003_2022\211	12/11/22	0830	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

570-120471 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non- ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.. | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company: J&A	Date/Time: 12/12/22 1310	Received by: EC		Date/Time: 12/12/22 1310
Relinquished by:	Company: EC	Date/Time: 12/12/22 1710	Received by: EC		Date/Time: 12-12-22 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2.0/1.8, 3.3/3.1 SCII

1/26/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note) State Program - California		Job #: 570-120471-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site.	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/FIII_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Trilium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20221211 (570-120471-1)	12/11/22	08 30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	2	Boeing SSFL DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 1433				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/26/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-202233 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120471-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/Filtration_Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20221211 (570-120471-1)	12/11/22	08 30 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/21/22 1232				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/26/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201239.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-120471-3
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/4/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGBMP0003_20221211 (570-120471-1)	12/11/22	08:30 Pacific		Water			X	1	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		12/14/22 11:17				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.6c

Ver: 06/08/2021

1/26/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120471-3
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120471
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120471-3
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120471
List Number: 5
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 12/15/22 03:03 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.6c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/23/2023 9:31:28 AM

JOB DESCRIPTION

Boeing SSFL - BMP Performance
SDG NUMBER 001, 002, 009 and/or 11 Watersheds

JOB NUMBER

570-120471-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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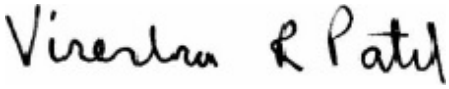
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-4
SDG: 001, 002, 009 and/or 11 Watersheds

Qualifiers

Rad

Qualifier	Qualifier Description
F	Duplicate RPD exceeds the control limit
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120471-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120471-4

Comments
No additional comments.

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 3.1º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following sample was received with insufficient preservation at a pH of >2 SU: BGBMP0003_20221211 (570-120471-1). 570-120471-U-1. The sample was preserved to the appropriate pH in the laboratory.

The laboratory received 500 ml unpreserved plastic instead of 500 ml plastic W/NaOH container for CN analysis on the following sample: BGBMP0003_20221211 (570-120471-1). CN container was preserved at the lab..

The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following sample: BGBMP0003_20221211 (570-120471-1). Aliquott was taken from 1L Amber glass container.

The clients office was contacted with the above sample receipt anomalies. The laboratory was provided written direction on how to proceed, please refer to the COC section of the report for further details.

RAD
Methods 900.0, 9310: Gross alpha/beta prep batch 160-595066:

The duplicate associated with the following samples failed precision for gross beta. The gross alpha precision passed. There is a potential matrix interference present. (680-227905-E-2-A) and (680-227905-E-2-D DU)

Method 901.1: Gamma prep batch 160-594076:

Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211

Job ID: 570-120471-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Th-227 Pb-211
Bi-214 Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20221211 (570-120471-1), (LCS 160-594076/2-A), (MB 160-594076/1-A), (570-120461-K-1-A) and (570-120461-K-1-B DU)

Method 901.1: Gamma prep batch 160-594397:

Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20221211 (570-120471-1), (LCS 160-594397/2-A), (MB 160-594397/1-A), (570-120461-J-1-B) and (570-120461-J-1-C DU)

Methods 903.0, 9315: Radium-226 batch 594426
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20221211 (570-120471-1), (LCS 160-594426/2-A), (MB 160-594426/1-A), (240-178196-C-10-A) and (240-178196-D-10-B DU)

Methods 903.0, 9315: Radium-226 batch 594274
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Job ID: 570-120471-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

BGBMP0003_20221211 (570-120471-1), (LCS 160-594274/2-A), (LCSD 160-594274/5-A) and (MB 160-594274/1-A)

Methods 904.0, 9320: Radium-228 prep batch 160-594087:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20221211 (570-120471-1), (LCS 160-594087/2-A), (MB 160-594087/1-A), (240-178023-D-8-B) and (240-178023-E-8-C DU)

Methods 904.0, 9320: Radium-228 prep batch 160-594370:

The Ra-228 laboratory control sample duplicate (LCSD) associated with the following samples recovered at 140%: (LCSD 160-594370/5-A). The limits in our LIMS system at 75-125% reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCSD are not from this agency and are therefore held to our in-house statistical limits of 62-148% per method requirements. The LCSD is within criteria and no further action is required.

Methods 904.0, 9320: Radium-228 prep batch 160-594370:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20221211 (570-120471-1), (LCSD 160-594370/5-A) and (MB 160-594370/1-A)

Methods 904.0, 9320: Radium-228 batch 594429
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20221211 (570-120471-1), (LCS 160-594429/2-A), (MB 160-594429/1-A), (240-178196-C-10-B) and (240-178196-D-10-C DU)

Method 905: Strontium-90 batch 594194
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20221211 (570-120471-1), (LCS 160-594194/2-A), (LCSD 160-594194/3-A) and (MB 160-594194/1-A)

Method 905: Strontium-90 batch 594381
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20221211 (570-120471-1), (LCS 160-594381/2-A), (LCSD 160-594381/3-A) and (MB 160-594381/1-A)

Method 906.0: Tritium 596753
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20221211 (570-120471-1), (LCS 160-596753/2-A), (MB 160-596753/1-A), (160-48264-B-2-A), (160-48264-B-2-B MS), (160-48265-B-1-A) and (160-48265-B-1-B DU)

Methods A-01-R, U-02-RC: Isotopic Uranium batch 596160
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time

Job ID: 570-120471-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

applied as the Activity Reference Date.
BGBMP0003_20221211 (570-120471-1), (LCS 160-596160/2-A), (MB 160-596160/1-A), (160-48265-E-1-A) and (160-48265-E-1-B DU)

Method A-01-R: Isotopic Uranium batch 596512
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20221211 (570-120471-1), (LCS 160-596512/2-A), (MB 160-596512/1-A), (160-48520-A-1-A) and (160-48520-A-1-B DU)

Method ExtChrom:

Method ExtChrom: Uranium Prep Batch 160-596512:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: BGBMP0003_20221211 (570-120471-1).

Method PrecSep_0:

Method PrecSep_0: Radium-228 Prep Batch 160-594370

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20221211 (570-120471-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0: Radium-228 Prep Batch 160-594370

Insufficient sample volume was available to perform a sample duplicate for the following samples: BGBMP0003_20221211 (570-120471-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep_0:

Method PrecSep-21:

Method PrecSep-21: Radium-226 Prep Batch 160-594274

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20221211 (570-120471-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-594274

Insufficient sample volume was available to perform a sample duplicate for the following samples: BGBMP0003_20221211 (570-120471-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-21:

Method PrecSep-7: Strontium-90 Prep Batch 160-594194

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20221211 (570-120471-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch

Job ID: 570-120471-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

precision.

Method PrecSep-7: Strontium 90 Prep Batch 160-594381

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20221211 (570-120471-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium 90 Prep Batch 160-594381

Insufficient sample volume was available to perform a sample duplicate for the following samples: BGBMP0003_20221211 (570-120471-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120471-4
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: BGBMP0003_20221211
Lab Sample ID: 570-120471-1

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.0136	U	0.955	0.955	3.00	1.78	pCi/L	12/29/22 10:15	01/06/23 20:27	1
Gross Beta	**1.90**		0.621	0.650	4.00	0.802	pCi/L	12/29/22 10:15	01/06/23 20:27	1

Client: Haley & Aldrich, Inc.
Job ID: 570-120471-4
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.907	U	1.01	1.02	3.00	1.65	pCi/L	12/29/22 10:15	01/06/23 20:27	1
Gross Beta	0.685	U	0.499	0.503	4.00	0.748	pCi/L	12/29/22 10:15	01/06/23 20:27	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.98	U	6.07	6.08	20.0	7.48	pCi/L	12/19/22 11:34	01/13/23 12:15	1
Potassium-40	-39.3	U	87.6	87.7		117	pCi/L	12/19/22 11:34	01/13/23 12:15	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-4
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.52	U	14.2	14.2	20.0	18.3	pCi/L	12/20/22 15:02	01/12/23 18:23	1
Potassium-40	-29.6	U	135	135		208	pCi/L	12/20/22 15:02	01/12/23 18:23	1

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0493	U	0.0867	0.0868	1.00	0.153	pCi/L	12/20/22 10:27	01/17/23 21:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*84.1*		*40 - 110*	*12/20/22 10:27*	*01/17/23 21:47*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-4
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0291	U	0.0980	0.0980	1.00	0.183	pCi/L	12/21/22 09:56	01/17/23 18:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.9*		*40 - 110*	*12/21/22 09:56*	*01/17/23 18:12*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.340	U	0.384	0.385	1.00	0.803	pCi/L	12/19/22 12:16	01/10/23 12:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.8*		*40 - 110*	*12/19/22 12:16*	*01/10/23 12:13*	*1*
Y Carrier	*85.6*		*40 - 110*	*12/19/22 12:16*	*01/10/23 12:13*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.450	U	0.434	0.436	1.00	0.694	pCi/L	12/21/22 10:21	01/11/23 12:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.9*		*40 - 110*	*12/21/22 10:21*	*01/11/23 12:09*	*1*
Y Carrier	*85.6*		*40 - 110*	*12/21/22 10:21*	*01/11/23 12:09*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.185	U	0.161	0.162	3.00	0.340	pCi/L	12/19/22 14:04	12/27/22 16:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*85.4*		*40 - 110*	*12/19/22 14:04*	*12/27/22 16:54*	*1*
Y Carrier	*89.7*		*40 - 110*	*12/19/22 14:04*	*12/27/22 16:54*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.490	U	0.368	0.371	3.00	0.578	pCi/L	12/20/22 13:06	12/28/22 15:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.4*		*40 - 110*	*12/20/22 13:06*	*12/28/22 15:54*	*1*
Y Carrier	*94.2*		*40 - 110*	*12/20/22 13:06*	*12/28/22 15:54*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-4
SDG: 001, 002, 009 and/or 11 Watersheds

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	155	U	192	193	500	318	pCi/L	01/12/23 12:52	01/13/23 06:09	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.596	U	0.584	0.585	1.00	0.615	pCi/L	01/09/23 16:00	01/13/23 14:10	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: BGBMP0003_20221211
Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	**0.280**		0.210	0.210	1.00	0.215	pCi/L	01/11/23 12:14	01/13/23 14:14	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-4
SDG: 001, 002, 009 and/or 11 Watersheds

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
240-178196-D-10-B DU	Duplicate	89.7
570-120471-1	BGBMP0003_20221211	84.1
LCS 160-594274/2-A	Lab Control Sample	88.3
LCS 160-594426/2-A	Lab Control Sample	95.5
LCSD 160-594274/5-A	Lab Control Sample Dup	82.1
MB 160-594274/1-A	Method Blank	94.4
MB 160-594426/1-A	Method Blank	90.8

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
570-120471-1	BGBMP0003_20221211	91.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
240-178023-E-8-C DU	Duplicate	104	89.3
240-178196-D-10-C DU	Duplicate	89.7	89.7
570-120471-1	BGBMP0003_20221211	88.8	85.6
LCS 160-594087/2-A	Lab Control Sample	102	88.6
LCS 160-594429/2-A	Lab Control Sample	95.5	88.2
MB 160-594087/1-A	Method Blank	93.9	87.5
MB 160-594429/1-A	Method Blank	90.8	87.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-120471-1	BGBMP0003_20221211	91.9	85.6

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120471-4
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-120471-1	BGBMP0003_20221211	85.4	89.7
LCS 160-594194/2-A	Lab Control Sample	84.5	88.6
LCS 160-594381/2-A	Lab Control Sample	84.8	87.5
LCSD 160-594194/3-A	Lab Control Sample Dup	84.6	88.2
LCSD 160-594381/3-A	Lab Control Sample Dup	86.4	88.2
MB 160-594194/1-A	Method Blank	77.9	77.4
MB 160-594381/1-A	Method Blank	85.6	86.7

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-120471-1	BGBMP0003_20221211	86.4	94.2

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
160-48265-E-1-B DU	Duplicate	82.7
160-48520-A-1-B DU	Duplicate	80.9
LCS 160-596160/2-A	Lab Control Sample	91.2
LCS 160-596512/2-A	Lab Control Sample	87.6
MB 160-596160/1-A	Method Blank	87.4
MB 160-596512/1-A	Method Blank	90.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-595066/1-A
Matrix: Water
Analysis Batch: 595512

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 595066

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.4804	U	0.636	0.638	3.00	1.31	pCi/L	12/29/22 10:15	01/04/23 19:02	1
Gross Beta	0.3169	U	0.488	0.489	4.00	0.822	pCi/L	12/29/22 10:15	01/04/23 19:02	1

Lab Sample ID: LCS 160-595066/2-A
Matrix: Water
Analysis Batch: 595512

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 595066

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Alpha			50.5	62.08		8.88	3.00	2.67	pCi/L	123	75 - 125		

Lab Sample ID: LCSB 160-595066/3-A
Matrix: Water
Analysis Batch: 595512

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 595066

Analyte			Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Beta			73.9	74.22		7.95	4.00	0.892	pCi/L	100	75 - 125		

Lab Sample ID: 680-227905-E-2-B MS
Matrix: Water
Analysis Batch: 595569

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 595066

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Alpha	-0.0672	U	50.5	48.13		6.40	3.00	1.02	pCi/L	95	60 - 140		

Lab Sample ID: 680-227905-E-2-C MSBT
Matrix: Water
Analysis Batch: 595569

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 595066

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Gross Beta	1.15		73.9	75.04		8.01	4.00	0.914	pCi/L	99	60 - 140		

Lab Sample ID: 680-227905-E-2-D DU
Matrix: Water
Analysis Batch: 596333

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 595066

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Gross Alpha	-0.0672	U		0.4132	U	0.561	3.00	0.941	pCi/L			0.45	1
Gross Beta	1.15			7.111	F	1.21	4.00	0.869	pCi/L			3.07	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-594076/1-A
Matrix: Water
Analysis Batch: 596811

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594076

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-4.780	U	8.70	8.72	20.0	10.4	pCi/L	12/19/22 11:34	01/13/23 09:52	1
Potassium-40	14.09	U	56.1	56.2		92.7	pCi/L	12/19/22 11:34	01/13/23 09:52	1

Lab Sample ID: LCS 160-594076/2-A
Matrix: Water
Analysis Batch: 596808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594076

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	153700		18300		301	pCi/L	114	75 - 125
Cesium-137	41000	42720		5090	20.0	85.3	pCi/L	104	75 - 125
Cobalt-60	18300	19040		2270		55.8	pCi/L	104	75 - 125

Lab Sample ID: 570-120461-K-1-B DU
Matrix: Water
Analysis Batch: 596811

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 594076

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	1.22	U	1.451	U	5.45	20.0	6.87	pCi/L	0.02	1
Potassium-40	-19.3	U	-48.93	U	112		143	pCi/L	0.15	1

Lab Sample ID: MB 160-594397/1-A
Matrix: Water
Analysis Batch: 596783

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594397

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-3.155	U	13.4	13.4	20.0	17.3	pCi/L	12/20/22 15:02	01/12/23 10:03	1
Potassium-40	-134.4	U	181	182		286	pCi/L	12/20/22 15:02	01/12/23 10:03	1

Lab Sample ID: LCS 160-594397/2-A
Matrix: Water
Analysis Batch: 596783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594397

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	137000	117900		14000		289	pCi/L	86	75 - 125
Cesium-137	42600	38460		4590	20.0	123	pCi/L	90	75 - 125
Cobalt-60	19000	17550		2100		56.3	pCi/L	92	75 - 125

Lab Sample ID: 570-120461-J-1-C DU
Matrix: Water
Analysis Batch: 596805

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 594397

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	4.02	U	1.262	U	13.2	20.0	17.3	pCi/L	0.13	1
Potassium-40	-52.0	U	30.30	U	144		208	pCi/L	0.27	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-594274/1-A
Matrix: Water
Analysis Batch: 596812

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594274

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.002115	U	0.102	0.102	1.00	0.198	pCi/L	12/20/22 10:27	01/13/23 16:12	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.4*		*40 - 110*	*12/20/22 10:27*	*01/13/23 16:12*	*1*

Lab Sample ID: LCS 160-594274/2-A
Matrix: Water
Analysis Batch: 596812

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594274

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.10		1.14	1.00	0.200	pCi/L	89	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*88.3*		*40 - 110*

Lab Sample ID: LCSD 160-594274/5-A
Matrix: Water
Analysis Batch: 596812

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 594274

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.16		1.26	1.00	0.240	pCi/L	98	75 - 125	0.44	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*82.1*		*40 - 110*

Lab Sample ID: MB 160-594426/1-A
Matrix: Water
Analysis Batch: 597153

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594426

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01235	U	0.0688	0.0688	1.00	0.133	pCi/L	12/21/22 09:56	01/17/23 08:38	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.8*		*40 - 110*	*12/21/22 09:56*	*01/17/23 08:38*	*1*

Lab Sample ID: LCS 160-594426/2-A
Matrix: Water
Analysis Batch: 597153

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594426

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.40		1.10	1.00	0.116	pCi/L	92	75 - 125		

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-594426/2-A
Matrix: Water
Analysis Batch: 597153

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594426

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.5		40 - 110

Lab Sample ID: 240-178196-D-10-B DU
Matrix: Water
Analysis Batch: 597152

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 594426

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.0234	U		0.1628		0.0930	1.00	0.115	pCi/L			0.78	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	89.7		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-594087/1-A
Matrix: Water
Analysis Batch: 596333

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594087

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.07347	U	0.242	0.243	1.00	0.482	pCi/L	12/19/22 12:16	01/10/23 12:12	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	93.9		40 - 110	12/19/22 12:16	01/10/23 12:12	1
Y Carrier	87.5		40 - 110	12/19/22 12:16	01/10/23 12:12	1

Lab Sample ID: LCS 160-594087/2-A
Matrix: Water
Analysis Batch: 596333

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594087

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.29	8.274		1.13	1.00	0.452	pCi/L	100	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	102		40 - 110
Y Carrier	88.6		40 - 110

Lab Sample ID: 240-178023-E-8-C DU
Matrix: Water
Analysis Batch: 596333

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 594087

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.529			1.250		0.395	1.00	0.421	pCi/L			0.98	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: 240-178023-E-8-C DU
Matrix: Water
Analysis Batch: 596333

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 594087

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	89.3		40 - 110

Lab Sample ID: MB 160-594429/1-A
Matrix: Water
Analysis Batch: 596522

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594429

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2607	U	0.299	0.300	1.00	0.491	pCi/L	12/21/22 10:21	01/11/23 12:06	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.8		40 - 110	12/21/22 10:21	01/11/23 12:06	1
Y Carrier	87.5		40 - 110	12/21/22 10:21	01/11/23 12:06	1

Lab Sample ID: LCS 160-594429/2-A
Matrix: Water
Analysis Batch: 596522

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594429

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.29	9.081		1.23	1.00	0.534	pCi/L	110	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.5		40 - 110
Y Carrier	88.2		40 - 110

Lab Sample ID: 240-178196-D-10-C DU
Matrix: Water
Analysis Batch: 596525

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 594429

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.295	U		-0.02498	U	0.273	1.00	0.518	pCi/L			0.51	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	89.7		40 - 110
Y Carrier	89.7		40 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-594194/1-A
Matrix: Water
Analysis Batch: 594849

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594194

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1666	U	0.210	0.210	3.00	0.348	pCi/L	12/19/22 14:04	12/27/22 16:53	1

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	77.9		40 - 110	12/19/22 14:04	12/27/22 16:53	1
Y Carrier	77.4		40 - 110	12/19/22 14:04	12/27/22 16:53	1

Lab Sample ID: LCS 160-594194/2-A
Matrix: Water
Analysis Batch: 594849

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594194

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.39	7.163		0.794	3.00	0.304	pCi/L	97	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	84.5		40 - 110
Y Carrier	88.6		40 - 110

Lab Sample ID: LCSD 160-594194/3-A
Matrix: Water
Analysis Batch: 594849

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 594194

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.39	7.559		0.833	3.00	0.358	pCi/L	102	75 - 125	0.24	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	84.6		40 - 110
Y Carrier	88.2		40 - 110

Lab Sample ID: MB 160-594381/1-A
Matrix: Water
Analysis Batch: 594942

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 594381

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.01066	U	0.182	0.182	3.00	0.325	pCi/L	12/20/22 13:06	12/28/22 15:49	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	85.6		40 - 110	12/20/22 13:06	12/28/22 15:49	1
Y Carrier	86.7		40 - 110	12/20/22 13:06	12/28/22 15:49	1

Lab Sample ID: LCS 160-594381/2-A
Matrix: Water
Analysis Batch: 594942

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 594381

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.39	7.927		0.861	3.00	0.309	pCi/L	107	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	84.8		40 - 110
Y Carrier	87.5		40 - 110

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCSD 160-594381/3-A
Matrix: Water
Analysis Batch: 594942

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 594381

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.39	8.477		0.909	3.00	0.366	pCi/L	115	75 - 125	0.31	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*86.4*		*40 - 110*
Y Carrier	*88.2*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-596753/1-A
Matrix: Water
Analysis Batch: 597113

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596753

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	22.97	U	170	170	500	307	pCi/L	01/12/23 12:52	01/13/23 02:43	1

Lab Sample ID: LCS 160-596753/2-A
Matrix: Water
Analysis Batch: 597113

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596753

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2120	2288		421	500	304	pCi/L	108	75 - 125		

Lab Sample ID: 160-48264-B-2-B MS
Matrix: Water
Analysis Batch: 597113

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 596753

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	171	U	2120	1887		394	500	326	pCi/L	81	60 - 140		

Lab Sample ID: 160-48265-B-1-B DU
Matrix: Water
Analysis Batch: 597113

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596753

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	118	U		124.8	U	185	500	309	pCi/L			0.02	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-596160/1-A
Matrix: Water
Analysis Batch: 596925

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596160

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.1284	U	0.1273	0.1276	1.00	0.148	pCi/L	01/09/23 16:00	01/13/23 14:10	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: LCS 160-596160/2-A
Matrix: Water
Analysis Batch: 596926

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596160

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	10.87		1.33	1.00	0.131	pCi/L	85	75 - 125		
Uranium-238			13.0	12.19		1.45	1.00	0.111	pCi/L	94	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*91.2*		*30 - 110*

Lab Sample ID: 160-48265-E-1-B DU
Matrix: Water
Analysis Batch: 596936

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596160

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	1.03			1.114		0.343	1.00	0.180	pCi/L			0.13	1

Lab Sample ID: MB 160-596512/1-A
Matrix: Water
Analysis Batch: 596962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596512

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1953		0.152	0.152	1.00	0.171	pCi/L	01/11/23 12:14	01/13/23 14:11	1

Lab Sample ID: LCS 160-596512/2-A
Matrix: Water
Analysis Batch: 596969

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596512

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.40		1.47	1.00	0.154	pCi/L	97	75 - 125		
Uranium-238			13.0	13.08		1.53	1.00	0.132	pCi/L	100	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*87.6*		*30 - 110*

Lab Sample ID: 160-48520-A-1-B DU
Matrix: Water
Analysis Batch: 597029

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596512

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.159			0.07438	U	0.1125	1.00	0.163	pCi/L			0.35	1

Rad

Filtration Batch: 594030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	Filtration	
570-120461-J-1-C DU	Duplicate	Dissolved	Water	Filtration	

Prep Batch: 594076

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	Fill_Geo-0	
MB 160-594076/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-594076/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-120461-K-1-B DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 594087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	PrecSep_0	
MB 160-594087/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-594087/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
240-178023-E-8-C DU	Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 594194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	PrecSep-7	
MB 160-594194/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-594194/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-594194/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 594274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	PrecSep-21	
MB 160-594274/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-594274/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-594274/5-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 594381

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	PrecSep-7	594030
MB 160-594381/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-594381/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-594381/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 594397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	Fill_Geo-0	594030
MB 160-594397/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-594397/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-120461-J-1-C DU	Duplicate	Dissolved	Water	Fill_Geo-0	594030

Prep Batch: 594426

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	PrecSep-21	594030
MB 160-594426/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-594426/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
240-178196-D-10-B DU	Duplicate	Total/NA	Water	PrecSep-21	

Rad

Prep Batch: 594429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	PrecSep_0	594030
MB 160-594429/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-594429/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
240-178196-D-10-C DU	Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 595066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	Evaporation	594030
570-120471-1	BGBMP0003_20221211	Total/NA	Water	Evaporation	
MB 160-595066/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-595066/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-595066/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
680-227905-E-2-B MS	Matrix Spike	Total/NA	Water	Evaporation	
680-227905-E-2-C MSBT	Matrix Spike	Total/NA	Water	Evaporation	
680-227905-E-2-D DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 596160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	ExtChrom	
MB 160-596160/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-596160/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
160-48265-E-1-B DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 596512

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Dissolved	Water	ExtChrom	594030
MB 160-596512/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-596512/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
160-48520-A-1-B DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 596753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120471-1	BGBMP0003_20221211	Total/NA	Water	LSC_Dist_Susp	
MB 160-596753/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-596753/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
160-48264-B-2-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
160-48265-B-1-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-4
SDG: 001, 002, 009 and/or 11 Watersheds

Client Sample ID: BGBMP0003_20221211

Date Collected: 12/11/22 08:30
Date Received: 12/12/22 13:10

Lab Sample ID: 570-120471-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	594030	12/19/22 10:56	JML	EET SL
Dissolved	Prep	Evaporation			200.01 mL	1.0 g	595066	12/29/22 10:15	MST	EET SL
Dissolved	Analysis	900.0		1			595887	01/06/23 20:27	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	595066	12/29/22 10:15	MST	EET SL
Total/NA	Analysis	900.0		1			595887	01/06/23 20:27	FLC	EET SL
	Instrument ID: GFPCORANGE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	594030	12/19/22 10:56	JML	EET SL
Dissolved	Prep	Fill_Geo-0			500 mL	1.0 g	594397	12/20/22 15:02	SRE	EET SL
Dissolved	Analysis	901.1		1			596783	01/12/23 18:23	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	594076	12/19/22 11:34	SRE	EET SL
Total/NA	Analysis	901.1		1			596810	01/13/23 12:15	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	594030	12/19/22 10:56	JML	EET SL
Dissolved	Prep	PrecSep-21			743.18 mL	1.0 g	594426	12/21/22 09:56	DJP	EET SL
Dissolved	Analysis	903.0		1			597153	01/17/23 18:12	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-21			748.08 mL	1.0 g	594274	12/20/22 10:27	DJP	EET SL
Total/NA	Analysis	903.0		1			597152	01/17/23 21:47	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	594030	12/19/22 10:56	JML	EET SL
Dissolved	Prep	PrecSep_0			743.18 mL	1.0 g	594429	12/21/22 10:21	DJP	EET SL
Dissolved	Analysis	904.0		1			596522	01/11/23 12:09	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			753.53 mL	1.0 g	594087	12/19/22 12:16	DJP	EET SL
Total/NA	Analysis	904.0		1			596333	01/10/23 12:13	EMH	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	594030	12/19/22 10:56	JML	EET SL
Dissolved	Prep	PrecSep-7			498.88 mL	1.0 g	594381	12/20/22 13:06	DJP	EET SL
Dissolved	Analysis	905		1			594940	12/28/22 15:54	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			756.91 mL	1.0 g	594194	12/19/22 14:04	DJP	EET SL
Total/NA	Analysis	905		1			594849	12/27/22 16:54	CLP	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			95.85 mL	1.0 g	596753	01/12/23 12:52	SEH	EET SL
Total/NA	Analysis	906.0		1			597113	01/13/23 06:09	REV	EET SL
	Instrument ID: LSCBROWN									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	594030	12/19/22 10:56	JML	EET SL
Dissolved	Prep	ExtChrom			352.63 mL	1.0 mL	596512	01/11/23 12:14	MAL	EET SL
Dissolved	Analysis	A-01-R		1			596974	01/13/23 14:14	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			255.60 mL	1.0 mL	596160	01/09/23 16:00	CMM	EET SL
Total/NA	Analysis	A-01-R		1			596941	01/13/23 14:10	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-4
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-120471-4
Project/Site: Boeing SSFL - BMP Performance
SDG: 001, 002, 009 and/or 11 Watersheds

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-22 *
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-4
SDG: 001, 002, 009 and/or 11 Watersheds

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy
EPA = US Environmental Protection Agency
None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL - BMP Performance

Job ID: 570-120471-4
SDG: 001, 002, 009 and/or 11 Watersheds

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120471-1	BGBMP0003_20221211	Water	12/11/22 08:30	12/12/22 13:10

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Thursday, December 15, 2022 7:07 AM
To: Virendra Patel; Dominick, Mark
Cc: Rapp, Kerry; Staff, Kathleen
Subject: RE: BMP / ISRA Sampling -- ECI Job#570-120471 -- Container Issues.

EXTERNAL EMAIL*

Confirmed, please proceed

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 5:38 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>; Dominick, Mark <MDominick@haleyaldrich.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: BMP / ISRA Sampling -- ECI Job#570-120471 -- Container Issues.

CAUTION: External Email

Katherine and/or Mark –

The lab had the following receipt items for the subject job: 570-120471

570-120471 –

A. The laboratory received 500 ml unpreserved plastic instead of 500 ml plastic W/NaOH container for CN analysis on the following sample:
BGBMP0003_20221211 (570-120471-1).

The laboratory preserved the sample container with NaOH upon receipt at the lab.

B. The laboratory received 1 L unpreserved Amber instead of 250 ml unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following sample:
BGBMP0003_20221211 (570-120471-1).

The laboratory used the 1 Liter ambers to pour off an aliquot for Dissolved Mercury into 1 x 250ml amber unpreserved container

Please confirm the above actions taken are acceptable and the lab is to proceed with testing.

Best Regards,

Virendra Patel
Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, December 14, 2022 11:48 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

EXTERNAL EMAIL*

Which incorrect containers/preservatives?

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 12:43 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

CAUTION: External Email

Thank you Katherine.

The BMP field teams need to revisit COC procedures as well please for the following:
-- We have receiving insufficient volume and/or incorrect containers/preservatives.
-- We would also request the teams use darker pens and write more diligently, sample IDs are hard to make out when they are hand writing them in.

I understand the field teams have a lot to manage already out in the field – Containers and preservatives may seem minor, but this can have an impact on your analytical program. We will do all we can to help mitigate any project failures.

Best Regards,

Virendra Patel

Project Manager



Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, December 14, 2022 11:28 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: Rapp, Kerry <KRapp@haleyaldrich.com>; Staff, Kathleen <KStaff@haleyaldrich.com>
Subject: RE: Uranium?

EXTERNAL EMAIL*

Virendra,

I'll go over sample receipt proofing with our staff. The NPDES Permit sampling is reviewed to the analyte/RL, but we haven't been as diligent about our training with these BMP samples. As for Uranium, the NPDES permit sampling reports "Uranium" and we want to match that for these samples.

Total Uranium
Dissolved Uranium

Thanks for checking,
Katherine

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, December 14, 2022 10:18 AM
To: Miller, Katherine <KMiller@haleyaldrich.com>
Cc: Dallalah, Michelle <MDallalah@haleyaldrich.com>; Godard, Vanessa <VGodard@haleyaldrich.com>; Gardiner, Nancy <NGardiner@haleyaldrich.com>
Subject: Uranium?
Importance: High

CAUTION: External Email

Katherine –

Good Morning. For the attached COC – Uranium reporting, what analytes are required?

For both Dissolved/Total – are we to include the full list for each fraction or a subset list for Uranium reporting?
Uranium-232
Uranium-234
Uranium-235/236
Uranium-238
Total Uranium
Dissolved Uranium

We sent out the attached SRC documents post receipt – I just noticed the limits document had the target analyte lists varying between Total/Dissolved Uranium? We didn't receive any comments on this? Someone on the Haley distribution is reviewing the SRC documents post receipt, correct? If not, going forward, may we please ensure a review is made to ensure have the analytical program correct.

Please confirm on the analyte list required, so I can move forward with report finalization/reporting on J116265 later today. In advance, thank you.

Best Regards,

Virendra Patel
Project Manager



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Everg

1CU4T1

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number 129095-010-001-06				Job / SDG No..
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag Al, As, Ba Be, Cd, Cr Cu Fe, Mn Ni, Pb, Se, Sb, Tl Method 200.7: B, Zn – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Cr Cu, Fe, Mn Ni, Pb, Se, Sb, Tl Method 200.7: B, Zn – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
BGBMP0003_2022\211	12/11/22	0830	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N																x		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	



570-120471 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non- ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.. | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company: J&A	Date/Time: 12/12/22 1310	Received by: EC		Date/Time: 12/12/22 1310
Relinquished by:	Company: EC	Date/Time: 12/12/22 1710	Received by: EC		Date/Time: 12-12-22 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2.0|1.8, 3.3|3.1 SCII

1/23/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-201296 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note) State Program - California		Job #: 570-120471-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site.	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/FIII_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Trilium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20221211 (570-120471-1)	12/11/22	08 30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	2	Boeing SSFL DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 1433				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/23/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-202233 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-120471-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/4/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/Filtration_Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20221211 (570-120471-1)	12/11/22	08 30 Pacific		Water			X	X	1	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/21/22 1232				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/23/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201237.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120471-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20221211 (570-120471-1)	12/11/22	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	1	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12/14/22 11:11	EC	FED EX		
2	FED EX				DEC 15 2022 0845	ETAT
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201296.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120471-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:				
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Filt_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20221211 (570-120471-1)	12/11/22	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	FED EX	12/14/22 1433		FED EX	DEC 15 2022	
2	Relinquished by: FED EX	Date/Time:	Company	Received by:	Date/Time: 0845	Company ESAT-L
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201237.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120471-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fil_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20221211 (570-120471-1)	12/11/22	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	1	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/14/22 11:11	EC	FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by:	Date/Time: DEC 15 2022 0845	Company ETA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-201296.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-120471-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/19/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL - BMP Performance	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/FIII_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20221211 (570-120471-1)	12/11/22	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FED EX	12/14/22 1433		FED EX	DEC 15 2022	
2	FED EX	Date/Time:	Company	Received by: [signature]	Date/Time: 0845	Company ETA TL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120471-4
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120471
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	False	Refer to Job Narrative for details.
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-120471-4
SDG Number: 001, 002, 009 and/or 11 Watersheds

Login Number: 120471
List Number: 3
Creator: Bohlmann, Jessica M

List Source: Eurofins St. Louis
List Creation: 12/15/22 11:20 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	570-120471-U-1 was received with a pH >2 SU.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/10/2023 12:29:56 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122524-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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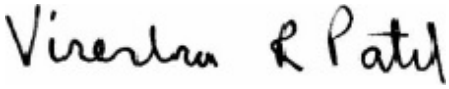
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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1/10/2023 12:29:56 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-1

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-1

Job ID: 570-122524-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122524-1

Comments
No additional comments.

Receipt
The samples were received on 1/4/2023 5:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9º C, 2.1º C, 2.3º C and 2.8º C.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: ILBMP0004_20230103 (570-122524-1), ILBMP0005_20230103 (570-122524-2), ILBMP0008_20230103 (570-122524-3), LPBMP0002_20230103 (570-122524-4), LPBMP0003_20230103 (570-122524-5), LBBMP0004_20230103 (570-122524-6), (570-122524-A-2 MS) and (570-122524-A-2 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-1

Client Sample ID: ILBMP0004_20230103 — Lab Sample ID: 570-122524-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.15	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	5.9		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	1.8		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	3.3	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.18	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	16		2.0	1.7	mg/L	1		SM 2540D	Total/NA

Client Sample ID: ILBMP0005_20230103 — Lab Sample ID: 570-122524-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.14	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	14		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.62	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Cadmium	0.16	J,DX BU	1.0	0.13	ug/L	1		200.8	Dissolved
Copper	13	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.21	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	5.6		1.3	1.0	mg/L	1		SM 2540D	Total/NA

Client Sample ID: ILBMP0008_20230103 — Lab Sample ID: 570-122524-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.17	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	3.1		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.93	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Cadmium	0.14	J,DX BU	1.0	0.13	ug/L	1		200.8	Dissolved
Copper	2.6	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.15	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	6.1		1.3	1.0	mg/L	1		SM 2540D	Total/NA

Client Sample ID: LPBMP0002_20230103 — Lab Sample ID: 570-122524-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	9.3		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.54	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	8.6	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.15	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	5.1		1.3	1.0	mg/L	1		SM 2540D	Total/NA

Client Sample ID: LPBMP0003_20230103 — Lab Sample ID: 570-122524-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	11		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.54	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable

This Detection Summary does not include radiochemical test results.

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Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-1

Client Sample ID: LPBMP0003_20230103 (Continued)

Lab Sample ID: 570-122524-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	9.6	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.15	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	5.5		1.3	1.0	mg/L	1		SM 2540D	Total/NA

Client Sample ID: LBBMP0004_20230103

Lab Sample ID: 570-122524-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	8.4		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.28	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	7.5	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.37	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.15**	**J,DX**	1.0	0.13	ug/L		01/05/23 08:13	01/06/23 12:47	1
Copper	**5.9**		2.0	0.32	ug/L		01/05/23 08:13	01/06/23 12:47	1
Lead	**1.8**		1.0	0.12	ug/L		01/05/23 08:13	01/06/23 12:47	1

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.14**	**J,DX**	1.0	0.13	ug/L		01/05/23 08:13	01/06/23 15:21	1
Copper	**14**		2.0	0.32	ug/L		01/05/23 08:13	01/06/23 15:21	1
Lead	**0.62**	**J,DX**	1.0	0.12	ug/L		01/05/23 08:13	01/06/23 15:21	1

Client Sample ID: ILBMP0008_20230103
Date Collected: 01/03/23 07:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.17**	**J,DX**	1.0	0.13	ug/L		01/05/23 08:13	01/06/23 15:23	1
Copper	**3.1**		2.0	0.32	ug/L		01/05/23 08:13	01/06/23 15:23	1
Lead	**0.93**	**J,DX**	1.0	0.12	ug/L		01/05/23 08:13	01/06/23 15:23	1

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/05/23 08:13	01/06/23 15:25	1
Copper	**9.3**		2.0	0.32	ug/L		01/05/23 08:13	01/06/23 15:25	1
Lead	**0.54**	**J,DX**	1.0	0.12	ug/L		01/05/23 08:13	01/06/23 15:25	1

Client Sample ID: LPBMP0003_20230103
Date Collected: 01/03/23 10:00
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/05/23 08:13	01/06/23 15:27	1
Copper	**11**		2.0	0.32	ug/L		01/05/23 08:13	01/06/23 15:27	1
Lead	**0.54**	**J,DX**	1.0	0.12	ug/L		01/05/23 08:13	01/06/23 15:27	1

Client Sample ID: LBBMP0004_20230103
Date Collected: 01/03/23 10:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/05/23 08:13	01/06/23 15:29	1
Copper	**8.4**		2.0	0.32	ug/L		01/05/23 08:13	01/06/23 15:29	1
Lead	**0.28**	**J,DX**	1.0	0.12	ug/L		01/05/23 08:13	01/06/23 15:29	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/06/23 17:50	1
Copper	**3.3**	**BU**	2.0	0.32	ug/L			01/06/23 17:50	1
Lead	**0.18**	**J,DX BU**	1.0	0.12	ug/L			01/06/23 17:50	1

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.16**	**J,DX BU**	1.0	0.13	ug/L			01/06/23 12:27	1
Copper	**13**	**BU**	2.0	0.32	ug/L			01/06/23 12:27	1
Lead	**0.21**	**J,DX BU**	1.0	0.12	ug/L			01/06/23 12:27	1

Client Sample ID: ILBMP0008_20230103
Date Collected: 01/03/23 07:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.14**	**J,DX BU**	1.0	0.13	ug/L			01/06/23 17:52	1
Copper	**2.6**	**BU**	2.0	0.32	ug/L			01/06/23 17:52	1
Lead	**0.15**	**J,DX BU**	1.0	0.12	ug/L			01/06/23 17:52	1

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/06/23 17:54	1
Copper	**8.6**	**BU**	2.0	0.32	ug/L			01/06/23 17:54	1
Lead	**0.15**	**J,DX BU**	1.0	0.12	ug/L			01/06/23 17:54	1

Client Sample ID: LPBMP0003_20230103
Date Collected: 01/03/23 10:00
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/06/23 17:57	1
Copper	**9.6**	**BU**	2.0	0.32	ug/L			01/06/23 17:57	1
Lead	**0.15**	**J,DX BU**	1.0	0.12	ug/L			01/06/23 17:57	1

Client Sample ID: LBBMP0004_20230103
Date Collected: 01/03/23 10:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/06/23 17:59	1
Copper	**7.5**	**BU**	2.0	0.32	ug/L			01/06/23 17:59	1
Lead	**0.37**	**J,DX BU**	1.0	0.12	ug/L			01/06/23 17:59	1

General Chemistry

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	16		2.0	1.7	mg/L			01/07/23 16:10	1

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	5.6		1.3	1.0	mg/L			01/07/23 16:10	1

Client Sample ID: ILBMP0008_20230103
Date Collected: 01/03/23 07:15
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	6.1		1.3	1.0	mg/L			01/07/23 16:10	1

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	5.1		1.3	1.0	mg/L			01/07/23 16:10	1

Client Sample ID: LPBMP0003_20230103
Date Collected: 01/03/23 10:00
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	5.5		1.3	1.0	mg/L			01/07/23 16:10	1

Client Sample ID: LBBMP0004_20230103
Date Collected: 01/03/23 10:15
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	ND		1.0	0.83	mg/L			01/07/23 16:10	1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-293803/1-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 293803

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/05/23 08:13	01/06/23 12:40	1
Copper	ND		2.0	0.32	ug/L		01/05/23 08:13	01/06/23 12:40	1
Lead	ND		1.0	0.12	ug/L		01/05/23 08:13	01/06/23 12:40	1

Lab Sample ID: LCS 570-293803/2-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 293803

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	82.6		ug/L		103	85 - 115
Copper	80.0	81.7		ug/L		102	85 - 115
Lead	80.0	82.5		ug/L		103	85 - 115

Lab Sample ID: LCSD 570-293803/3-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 293803

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	82.1		ug/L		103	85 - 115	1	20
Copper	80.0	80.7		ug/L		101	85 - 115	1	20
Lead	80.0	82.5		ug/L		103	85 - 115	0	20

Lab Sample ID: 570-122524-1 MS
Matrix: Water
Analysis Batch: 294197

Client Sample ID: ILBMP0004_20230103
Prep Type: Total Recoverable
Prep Batch: 293803

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	0.15	J,DX	80.0	83.1		ug/L		104	80 - 120
Copper	5.9		80.0	89.1		ug/L		104	80 - 120
Lead	1.8		80.0	85.2		ug/L		104	80 - 120

Lab Sample ID: 570-122524-1 MSD
Matrix: Water
Analysis Batch: 294197

Client Sample ID: ILBMP0004_20230103
Prep Type: Total Recoverable
Prep Batch: 293803

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	0.15	J,DX	80.0	84.7		ug/L		106	80 - 120	2	20
Copper	5.9		80.0	91.0		ug/L		106	80 - 120	2	20
Lead	1.8		80.0	87.6		ug/L		107	80 - 120	3	20

Lab Sample ID: MB 570-294131/1-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			01/06/23 12:21	1
Copper	ND		2.0	0.32	ug/L			01/06/23 12:21	1
Lead	ND		1.0	0.12	ug/L			01/06/23 12:21	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-294131/2-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium			80.0	74.2		ug/L		93	85 - 115		
Copper			80.0	73.8		ug/L		92	85 - 115		
Lead			80.0	75.1		ug/L		94	85 - 115		

Lab Sample ID: LCSD 570-294131/3-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	72.4		ug/L		91	85 - 115	2	20
Copper			80.0	74.0		ug/L		93	85 - 115	0	20
Lead			80.0	73.0		ug/L		91	85 - 115	3	20

Lab Sample ID: 570-122524-2 MS
Matrix: Water
Analysis Batch: 294197

Client Sample ID: ILBMP0005_20230103
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium	0.16	J,DX BU	80.0	70.9		ug/L		88	80 - 120		
Copper	13	BU	80.0	86.2		ug/L		92	80 - 120		
Lead	0.21	J,DX BU	80.0	72.2		ug/L		90	80 - 120		

Lab Sample ID: 570-122524-2 MSD
Matrix: Water
Analysis Batch: 294197

Client Sample ID: ILBMP0005_20230103
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	0.16	J,DX BU	80.0	74.4		ug/L		93	80 - 120	5	20
Copper	13	BU	80.0	88.0		ug/L		94	80 - 120	2	20
Lead	0.21	J,DX BU	80.0	72.7		ug/L		91	80 - 120	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-294343/1
Matrix: Water
Analysis Batch: 294343

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/07/23 16:10	1

Lab Sample ID: LCS 570-294343/2
Matrix: Water
Analysis Batch: 294343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	91.0		mg/L		91	77 - 116		

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 570-294343/3
Matrix: Water
Analysis Batch: 294343

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.0		mg/L		96	77 - 116	5	10

Lab Sample ID: 570-122590-C-1 DU
Matrix: Water
Analysis Batch: 294343

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	170			166		mg/L				2	10

Metals

Prep Batch: 293803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-1	ILBMP0004_20230103	Total Recoverable	Water	200.8	
570-122524-2	ILBMP0005_20230103	Total Recoverable	Water	200.8	
570-122524-3	ILBMP0008_20230103	Total Recoverable	Water	200.8	
570-122524-4	LPBMP0002_20230103	Total Recoverable	Water	200.8	
570-122524-5	LPBMP0003_20230103	Total Recoverable	Water	200.8	
570-122524-6	LBBMP0004_20230103	Total Recoverable	Water	200.8	
MB 570-293803/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-293803/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-293803/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-122524-1 MS	ILBMP0004_20230103	Total Recoverable	Water	200.8	
570-122524-1 MSD	ILBMP0004_20230103	Total Recoverable	Water	200.8	

Filtration Batch: 294131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-1	ILBMP0004_20230103	Dissolved	Water	Filtration	
570-122524-2	ILBMP0005_20230103	Dissolved	Water	Filtration	
570-122524-3	ILBMP0008_20230103	Dissolved	Water	Filtration	
570-122524-4	LPBMP0002_20230103	Dissolved	Water	Filtration	
570-122524-5	LPBMP0003_20230103	Dissolved	Water	Filtration	
570-122524-6	LBBMP0004_20230103	Dissolved	Water	Filtration	
MB 570-294131/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-294131/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294131/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-122524-2 MS	ILBMP0005_20230103	Dissolved	Water	Filtration	
570-122524-2 MSD	ILBMP0005_20230103	Dissolved	Water	Filtration	

Analysis Batch: 294197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-1	ILBMP0004_20230103	Total Recoverable	Water	200.8	293803
570-122524-2	ILBMP0005_20230103	Dissolved	Water	200.8	294131
MB 570-293803/1-A	Method Blank	Total Recoverable	Water	200.8	293803
MB 570-294131/1-A	Method Blank	Dissolved	Water	200.8	294131
LCS 570-293803/2-A	Lab Control Sample	Total Recoverable	Water	200.8	293803
LCS 570-294131/2-A	Lab Control Sample	Dissolved	Water	200.8	294131
LCSD 570-293803/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	293803
LCSD 570-294131/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	294131
570-122524-1 MS	ILBMP0004_20230103	Total Recoverable	Water	200.8	293803
570-122524-1 MSD	ILBMP0004_20230103	Total Recoverable	Water	200.8	293803
570-122524-2 MS	ILBMP0005_20230103	Dissolved	Water	200.8	294131
570-122524-2 MSD	ILBMP0005_20230103	Dissolved	Water	200.8	294131

Analysis Batch: 294380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-1	ILBMP0004_20230103	Dissolved	Water	200.8	294131
570-122524-2	ILBMP0005_20230103	Total Recoverable	Water	200.8	293803
570-122524-3	ILBMP0008_20230103	Dissolved	Water	200.8	294131
570-122524-3	ILBMP0008_20230103	Total Recoverable	Water	200.8	293803
570-122524-4	LPBMP0002_20230103	Dissolved	Water	200.8	294131
570-122524-4	LPBMP0002_20230103	Total Recoverable	Water	200.8	293803
570-122524-5	LPBMP0003_20230103	Dissolved	Water	200.8	294131
570-122524-5	LPBMP0003_20230103	Total Recoverable	Water	200.8	293803

Metals (Continued)

Analysis Batch: 294380 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-6	LBBMP0004_20230103	Dissolved	Water	200.8	294131
570-122524-6	LBBMP0004_20230103	Total Recoverable	Water	200.8	293803

General Chemistry

Analysis Batch: 294343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-1	ILBMP0004_20230103	Total/NA	Water	SM 2540D	
570-122524-2	ILBMP0005_20230103	Total/NA	Water	SM 2540D	
570-122524-3	ILBMP0008_20230103	Total/NA	Water	SM 2540D	
570-122524-4	LPBMP0002_20230103	Total/NA	Water	SM 2540D	
570-122524-5	LPBMP0003_20230103	Total/NA	Water	SM 2540D	
570-122524-6	LBBMP0004_20230103	Total/NA	Water	SM 2540D	
MB 570-294343/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-294343/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-294343/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-122590-C-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-1

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 17:50	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	293803	01/05/23 08:13	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294197	01/06/23 12:47	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	294343	01/07/23 16:10	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294197	01/06/23 12:27	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	293803	01/05/23 08:13	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294380	01/06/23 15:21	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	SM 2540D		1	800 mL	1000 mL	294343	01/07/23 16:10	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: ILBMP0008_20230103
Date Collected: 01/03/23 07:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 17:52	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	293803	01/05/23 08:13	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294380	01/06/23 15:23	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	SM 2540D		1	800 mL	1000 mL	294343	01/07/23 16:10	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 17:54	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-1

Client Sample ID: LPBMP0002_20230103

Lab Sample ID: 570-122524-4

Date Collected: 01/03/23 10:30
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			50 mL	50 mL	293803	01/05/23 08:13	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294380	01/06/23 15:25	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	SM 2540D		1	800 mL	1000 mL	294343	01/07/23 16:10	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: LPBMP0003_20230103

Lab Sample ID: 570-122524-5

Date Collected: 01/03/23 10:00
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 17:57	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	293803	01/05/23 08:13	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294380	01/06/23 15:27	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	SM 2540D		1	800 mL	1000 mL	294343	01/07/23 16:10	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: LBBMP0004_20230103

Lab Sample ID: 570-122524-6

Date Collected: 01/03/23 10:15
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 17:59	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	293803	01/05/23 08:13	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294380	01/06/23 15:29	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	294343	01/07/23 16:10	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-1

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122524-1	ILBMP0004_20230103	Water	01/03/23 07:30	01/04/23 17:25
570-122524-2	ILBMP0005_20230103	Water	01/03/23 07:45	01/04/23 17:25
570-122524-3	ILBMP0008_20230103	Water	01/03/23 07:15	01/04/23 17:25
570-122524-4	LPBMP0002_20230103	Water	01/03/23 10:30	01/04/23 17:25
570-122524-5	LPBMP0003_20230103	Water	01/03/23 10:00	01/04/23 17:25
570-122524-6	LBBMP0004_20230103	Water	01/03/23 10:15	01/04/23 17:25

122524

Chain of Custody Record for Chain of Custody Record

eurofins

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Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

testAmerica services under CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement #20 22 between Haley & Aldrich, Inc., subsidiaries and affiliates and TestAmerica Laboratories, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8 Cd Cu Pb (Total Recoverable)	Method 200.8 Cd, Cu Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_			C	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_			C	WM	8	Y	N	X	X	X	X	X	X	X
BBMP0002_			G	WM	8	Y	Y	X	X	X	X	X	X	X
BBMP0004_ 20230103	01/03/23	0730	G	WM	8	Y	N	X	X	X	X	X	X	X
BBMP0005_ 20230103		0745	G	WM	8	Y	N	X	X	X	X	X	X	X
BBMP0008_ 20230103		0715	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_ 20230103		1030	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_ 20230103		1000	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_ 20230103		1015	G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01_ ~~20230103~~	~~01/03/23~~	~~1030~~	~~G~~	~~WM~~	~~8~~	~~Y~~	~~N~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1

570-122524 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C) Obs'd. ____ Corr'd: ____ Therm ID No.: ____

Relinquished by	Company	Date/Time	Received by	Date/Time
[signature]	H&A	1-4-23 / 1055	[signature] EC	1/4/23 1055
[signature]	EC	1/4/23 1725	[signature]	1/4/23 1725
Relinquished by	Company	Date/Time	Received in Laboratory by:	Date/Time:

2.8/2.8 2.1/2.1 2.3/2.3 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1/10/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203288.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program California		Job #: 570-122524-1
Address: 5755 8th Street East,	Due Date Requested: 1/16/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL
B NaOH
C Zn Acetate
D Nitric Acid
E NaHSO4
F MeOH
G Amchlor
H Ascorbic Acid
I Ice
J DI Water
K EDTA
L EDA
M Hexane
N None
O AsNaO2
P Na2O4S
Q Na2SO3
R Na2S2O3
S H2SO4
T TSP Dodecahydrate
U Acetone
V MCAA
W pH 4-5
Y Trizma
Z other (specify)
Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
ILBMP0004_20230103 (570-122524-1)	1/3/23	07:30 Pacific		Water			X	X	2	
ILBMP0005_20230103 (570-122524-2)	1/3/23	07:45 Pacific		Water			X	X	2	
ILBMP0008_20230103 (570-122524-3)	1/3/23	07:15 Pacific		Water			X	X	2	
LPBMP0002_20230103 (570-122524-4)	1/3/23	10:30 Pacific		Water			X	X	2	
LPBMP0003_20230103 (570-122524-5)	1/3/23	10:00 Pacific		Water			X	X	2	
LBBMP0004_20230103 (570-122524-6)	1/3/23	10:15 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin isted above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Esther Rodriguez	01/05/23 1318	EC			

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No
570-203288

Containers

Count	Container Type	Preservative
12	Mercury-LL Method 1631 Sample Kit	None

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203288.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-122524-1
Address: 5755 8th Street East, ,	Due Date Requested: 1/16/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
ILBMP0004_20230103 (570-122524-1)	1/3/23	07:30 Pacific		Water			X	X	2	
ILBMP0005_20230103 (570-122524-2)	1/3/23	07:45 Pacific		Water			X	X	2	
ILBMP0008_20230103 (570-122524-3)	1/3/23	07:15 Pacific		Water			X	X	2	
LPBMP0002_20230103 (570-122524-4)	1/3/23	10:30 Pacific		Water			X	X	2	
LPBMP0003_20230103 (570-122524-5)	1/3/23	10:00 Pacific		Water			X	X	2	
LBBMP0004_20230103 (570-122524-6)	1/3/23	10:15 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements: 6226 1904 9886

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Ester Rodinf	Date/Time: 01/05/23 13:18	Company: EC	Received by: [signature]	Date/Time: 1/6/22 9:25	Company: EPES
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: (Δ) Yes Δ No	Custody Seal No.: NA	Lg Red Ice	Cooler Temperature(s) °C and Other Remarks: 0.1 Dig 3 0.2		

1/10/2023

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122524-1

Login Number: 122524
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122524-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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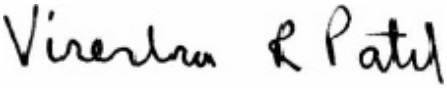
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Qualifiers

Dioxin

Qualifier	Qualifier Description
EY	Result exceeds normal dynamic range; reported as a min. est.
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122524-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122524-2

Comments
No additional comments.

Receipt
The samples were received on 1/4/2023 5:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9º C, 2.1º C, 2.3º C and 2.8º C.

Dioxin
Method 1613B: The continuing calibration verification (CCV) associated with batch 320-650252 recovered above the upper control limit for isotope dilution analyte (IDA) 13C-1,2,3,4,7,8-HxCDD. The samples associated with this CCV are in control for this IDA. The associated laboratory control spike and laboratory control spike duplicate are in control for the native analyte 1,2,3,4,7,8-HxCDD; therefore, the data have been reported. The associated samples are impacted: ILBMP0004_20230103 (570-122524-1), ILBMP0005_20230103 (570-122524-2), ILBMP0008_20230103 (570-122524-3), LPBMP0002_20230103 (570-122524-4), LPBMP0003_20230103 (570-122524-5), LBBMP0004_20230103 (570-122524-6), (CCV 320-650252/1), (LCS 320-646600/2-A) and (LCSD 320-646600/3-A).

Method 1613B: The continuing calibration verification (CCV) associated with batch 320-650893 recovered above the upper control limit for isotope dilution analyte (IDA) 13C-1,2,3,4,7,8,9-HpCDF. The samples associated with this CCV are in control for this IDA and are non-detect above the reporting limit (RL) for the native analyte 1,2,3,4,7,8,9-HpCDF; therefore, the data have been reported. The associated samples are impacted: ILBMP0005_20230103 (570-122524-2) and (CCV 320-650893/18).

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: ILBMP0004_20230103 (570-122524-1), ILBMP0005_20230103 (570-122524-2) and (CCV 320-652285/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
Method 1613B: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: ILBMP0008_20230103 (570-122524-3). Nominal volume is 1L.

preparation batch 320-646600
Method: 1613B_Sox_Sep_P
Matrix: Water

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-2

Client Sample ID: ILBMP0004_20230103 — Lab Sample ID: 570-122524-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.000012	J,DX q	0.000052	0.0000019	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000031	J,DX q	0.000052	0.00000039	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000023	J,DX q	0.000052	0.00000046	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.000029	J,DX MB	0.000052	0.00000080	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00010		0.000052	0.00000086	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00019		0.000052	0.00000075	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.000017	J,DX	0.000052	0.00000071	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000074	J,DX	0.000052	0.00000069	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000027	J,DX q MB	0.000052	0.00000073	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000077	J,DX	0.000052	0.00000065	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0026	MB	0.000052	0.0000078	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00027	MB	0.000052	0.0000016	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.000016	J,DX MB	0.000052	0.0000017	ug/L	1		1613B	Total/NA
OCDD	0.12	EY MB	0.00010	0.000063	ug/L	1		1613B	Total/NA
OCDF	0.00085	MB	0.00010	0.0000010	ug/L	1		1613B	Total/NA
Total TCDD	0.000043	q	0.000017	0.000017	ug/L	1		1613B	Total/NA
Total TCDF	0.0000028	J,DX	0.000010	0.00000017	ug/L	1		1613B	Total/NA
Total PeCDD	0.00011	J,DX q	0.000052	0.0000019	ug/L	1		1613B	Total/NA
Total PeCDF	0.000022	J,DX q	0.000052	0.00000043	ug/L	1		1613B	Total/NA
Total HxCDD	0.00086	J,DX q MB	0.000052	0.00000081	ug/L	1		1613B	Total/NA
Total HxCDF	0.00024	J,DX q MB	0.000052	0.00000070	ug/L	1		1613B	Total/NA
Total HpCDD	0.0088	q MB	0.000052	0.0000078	ug/L	1		1613B	Total/NA
Total HpCDF	0.00069	J,DX MB	0.000052	0.0000016	ug/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	0.0000017	J,DX	0.000010	0.00000048	ug/L	1		1613B	Total/NA

Client Sample ID: ILBMP0005_20230103 — Lab Sample ID: 570-122524-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000013	J,DX	0.000052	0.00000013	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000015	J,DX q MB	0.000052	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000011	J,DX	0.000052	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000012	J,DX q	0.000052	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000015	J,DX	0.000052	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000012	J,DX q	0.000052	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000029	J,DX MB	0.000052	0.00000023	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-2

Client Sample ID: ILBMP0005_20230103 (Continued)

Lab Sample ID: 570-122524-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,4,6,7,8-HxCDF	0.00000070	J,DX q	0.000052	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000023	J,DX MB	0.000052	0.00000041	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000020	J,DX MB	0.000052	0.00000047	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000013	J,DX MB	0.000052	0.00000042	ug/L	1		1613B	Total/NA
OCDD	0.00028	MB	0.00010	0.00000092	ug/L	1		1613B	Total/NA
OCDF	0.000025	J,DX MB	0.00010	0.00000052	ug/L	1		1613B	Total/NA
Total TCDF	0.0000021	J,DX	0.000010	0.00000014	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000016	J,DX q	0.000052	0.00000014	ug/L	1		1613B	Total/NA
Total HxCDD	0.000013	J,DX q MB	0.000052	0.00000026	ug/L	1		1613B	Total/NA
Total HxCDF	0.000013	J,DX q MB	0.000052	0.00000024	ug/L	1		1613B	Total/NA
Total HpCDD	0.000063	J,DX MB	0.000052	0.00000041	ug/L	1		1613B	Total/NA
Total HpCDF	0.000032	J,DX MB	0.000052	0.00000045	ug/L	1		1613B	Total/NA

Client Sample ID: ILBMP0008_20230103

Lab Sample ID: 570-122524-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000020	J,DX	0.000053	0.00000027	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000022	J,DX q MB	0.000053	0.00000035	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000039	J,DX	0.000053	0.00000038	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000037	J,DX	0.000053	0.00000033	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000041	J,DX q	0.000053	0.00000042	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000057	J,DX q	0.000053	0.00000041	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000020	J,DX q MB	0.000053	0.00000045	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000031	J,DX q	0.000053	0.00000040	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00012	MB	0.000053	0.00000066	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00015	MB	0.000053	0.00000068	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000038	J,DX q MB	0.000053	0.00000073	ug/L	1		1613B	Total/NA
OCDD	0.0012	MB	0.00011	0.0000016	ug/L	1		1613B	Total/NA
OCDF	0.00012	MB	0.00011	0.00000060	ug/L	1		1613B	Total/NA
Total PeCDF	0.000012	J,DX q	0.000053	0.00000028	ug/L	1		1613B	Total/NA
Total HxCDD	0.000064	J,DX q MB	0.000053	0.00000035	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: ILBMP0008_20230103 (Continued)

Lab Sample ID: 570-122524-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total HxCDF	0.000083	J,DX q MB	0.000053	0.00000042	ug/L	1		1613B	Total/NA
Total HpCDD	0.00039	MB	0.000053	0.00000066	ug/L	1		1613B	Total/NA
Total HpCDF	0.00022	J,DX q MB	0.000053	0.00000070	ug/L	1		1613B	Total/NA

Client Sample ID: LPBMP0002_20230103

Lab Sample ID: 570-122524-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000012	J,DX q	0.000048	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000025	J,DX MB	0.000048	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000019	J,DX	0.000048	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000025	J,DX	0.000048	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000095	J,DX q	0.000048	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000088	J,DX q	0.000048	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000028	J,DX MB	0.000048	0.00000018	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000066	J,DX q	0.000048	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000040	J,DX MB	0.000048	0.00000034	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000018	J,DX MB	0.000048	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000011	J,DX MB q	0.000048	0.00000022	ug/L	1		1613B	Total/NA
OCDD	0.00034	MB	0.000097	0.00000080	ug/L	1		1613B	Total/NA
OCDF	0.000019	J,DX MB	0.000097	0.00000039	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000012	J,DX q	0.000048	0.00000013	ug/L	1		1613B	Total/NA
Total HxCDD	0.000018	J,DX MB q	0.000048	0.00000025	ug/L	1		1613B	Total/NA
Total HxCDF	0.000012	J,DX MB q	0.000048	0.00000018	ug/L	1		1613B	Total/NA
Total HpCDD	0.000093	J,DX MB	0.000048	0.00000034	ug/L	1		1613B	Total/NA
Total HpCDF	0.000028	J,DX MB q	0.000048	0.00000022	ug/L	1		1613B	Total/NA

Client Sample ID: LPBMP0003_20230103

Lab Sample ID: 570-122524-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000012	J,DX	0.000052	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000027	J,DX q MB	0.000052	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000018	J,DX	0.000052	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000022	J,DX q	0.000052	0.00000022	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: LPBMP0003_20230103 (Continued)

Lab Sample ID: 570-122524-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDF	0.00000093	J,DX	0.000052	0.00000017	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000011	J,DX	0.000052	0.00000017	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000030	J,DX MB	0.000052	0.00000017	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000037	J,DX q	0.000052	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000035	J,DX MB	0.000052	0.00000034	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000018	J,DX MB	0.000052	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000091	J,DX q MB	0.000052	0.00000027	ug/L	1		1613B	Total/NA
OCDD	0.00038	MB	0.00010	0.00000069	ug/L	1		1613B	Total/NA
OCDF	0.000020	J,DX MB	0.00010	0.00000031	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000022	J,DX q	0.000052	0.00000015	ug/L	1		1613B	Total/NA
Total HxCDD	0.000015	J,DX q MB	0.000052	0.00000023	ug/L	1		1613B	Total/NA
Total HxCDF	0.000013	J,DX q MB	0.000052	0.00000017	ug/L	1		1613B	Total/NA
Total HpCDD	0.000085	J,DX MB	0.000052	0.00000034	ug/L	1		1613B	Total/NA
Total HpCDF	0.000030	J,DX q MB	0.000052	0.00000026	ug/L	1		1613B	Total/NA

Client Sample ID: LBBMP0004_20230103

Lab Sample ID: 570-122524-6

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000016	J,DX	0.000051	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000015	J,DX MB q	0.000051	0.00000011	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000081	J,DX q	0.000051	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000010	J,DX	0.000051	0.00000010	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000072	J,DX	0.000051	0.0000000095	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000089	J,DX	0.000051	0.0000000091	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000031	J,DX MB	0.000051	0.00000010	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000012	J,DX q	0.000051	0.0000000090	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000022	J,DX MB	0.000051	0.00000032	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000043	J,DX MB q	0.000051	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000068	J,DX MB q	0.000051	0.00000016	ug/L	1		1613B	Total/NA
OCDD	0.00025	MB	0.00010	0.00000077	ug/L	1		1613B	Total/NA
OCDF	0.000015	J,DX MB	0.00010	0.00000059	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: LBBMP0004_20230103 (Continued)
Lab Sample ID: 570-122524-6

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total PeCDF	0.0000016	J,DX	0.000051	0.00000017	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000069	J,DX MB q	0.000051	0.00000011	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000049	J,DX MB q	0.000051	0.000000095	ug/L	1		1613B	Total/NA
Total HpCDD	0.000039	J,DX MB q	0.000051	0.00000032	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000091	J,DX MB q	0.000051	0.00000015	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000017	0.000017	ug/L		01/12/23 15:35	01/29/23 04:54	1
1,2,3,7,8-PeCDD	0.000012	J,DX q	0.000052	0.0000019	ug/L		01/12/23 15:35	01/29/23 04:54	1
1,2,3,7,8-PeCDF	0.0000031	J,DX q	0.000052	0.00000039	ug/L		01/12/23 15:35	01/29/23 04:54	1
2,3,4,7,8-PeCDF	0.0000023	J,DX q	0.000052	0.00000046	ug/L		01/12/23 15:35	01/29/23 04:54	1
1,2,3,4,7,8-HxCDD	0.000029	J,DX MB	0.000052	0.00000080	ug/L		01/12/23 15:35	01/29/23 04:54	1
1,2,3,6,7,8-HxCDD	0.00010		0.000052	0.00000086	ug/L		01/12/23 15:35	01/29/23 04:54	1
1,2,3,7,8,9-HxCDD	0.00019		0.000052	0.00000075	ug/L		01/12/23 15:35	01/29/23 04:54	1
1,2,3,4,7,8-HxCDF	0.000017	J,DX	0.000052	0.00000071	ug/L		01/12/23 15:35	01/29/23 04:54	1
1,2,3,6,7,8-HxCDF	0.0000074	J,DX	0.000052	0.00000069	ug/L		01/12/23 15:35	01/29/23 04:54	1
1,2,3,7,8,9-HxCDF	0.0000027	J,DX q MB	0.000052	0.00000073	ug/L		01/12/23 15:35	01/29/23 04:54	1
2,3,4,6,7,8-HxCDF	0.0000077	J,DX	0.000052	0.00000065	ug/L		01/12/23 15:35	01/29/23 04:54	1
1,2,3,4,6,7,8-HpCDD	0.0026	MB	0.000052	0.0000078	ug/L		01/12/23 15:35	01/29/23 04:54	1
1,2,3,4,6,7,8-HpCDF	0.00027	MB	0.000052	0.0000016	ug/L		01/12/23 15:35	01/29/23 04:54	1
1,2,3,4,7,8,9-HpCDF	0.000016	J,DX MB	0.000052	0.0000017	ug/L		01/12/23 15:35	01/29/23 04:54	1
OCDD	0.12	EY MB	0.00010	0.000063	ug/L		01/12/23 15:35	01/29/23 04:54	1
OCDF	0.00085	MB	0.00010	0.0000010	ug/L		01/12/23 15:35	01/29/23 04:54	1
Total TCDD	0.000043	q	0.000017	0.000017	ug/L		01/12/23 15:35	01/29/23 04:54	1
Total TCDF	0.0000028	J,DX	0.000010	0.00000017	ug/L		01/12/23 15:35	01/29/23 04:54	1
Total PeCDD	0.00011	J,DX q	0.000052	0.0000019	ug/L		01/12/23 15:35	01/29/23 04:54	1
Total PeCDF	0.000022	J,DX q	0.000052	0.00000043	ug/L		01/12/23 15:35	01/29/23 04:54	1
Total HxCDD	0.00086	J,DX q MB	0.000052	0.00000081	ug/L		01/12/23 15:35	01/29/23 04:54	1
Total HxCDF	0.00024	J,DX q MB	0.000052	0.00000070	ug/L		01/12/23 15:35	01/29/23 04:54	1
Total HpCDD	0.0088	q MB	0.000052	0.0000078	ug/L		01/12/23 15:35	01/29/23 04:54	1
Total HpCDF	0.00069	J,DX MB	0.000052	0.0000016	ug/L		01/12/23 15:35	01/29/23 04:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*72*		*25 - 164*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-2,3,7,8-TCDF	*66*		*24 - 169*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-1,2,3,7,8-PeCDD	*79*		*25 - 181*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-1,2,3,7,8-PeCDF	*76*		*24 - 185*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-2,3,4,7,8-PeCDF	*72*		*21 - 178*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-1,2,3,4,7,8-HxCDD	*86*		*32 - 141*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-1,2,3,6,7,8-HxCDD	*78*		*28 - 130*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-1,2,3,4,7,8-HxCDF	*85*		*26 - 152*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-1,2,3,6,7,8-HxCDF	*87*		*26 - 123*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-1,2,3,7,8,9-HxCDF	*82*		*29 - 147*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-2,3,4,6,7,8-HxCDF	*92*		*28 - 136*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*93*		*23 - 140*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*86*		*28 - 143*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*89*		*26 - 138*	*01/12/23 15:35*	*01/29/23 04:54*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-1
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-OCDD	*95*		*17 - 157*	*01/12/23 15:35*	*01/29/23 04:54*	*1*
13C-OCDF	*98*		*17 - 157*	*01/12/23 15:35*	*01/29/23 04:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*79*		*35 - 197*	*01/12/23 15:35*	*01/29/23 04:54*	*1*

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000044	ug/L		01/12/23 15:35	02/01/23 04:49	1
1,2,3,7,8-PeCDD	ND		0.000052	0.00000027	ug/L		01/12/23 15:35	02/01/23 04:49	1
1,2,3,7,8-PeCDF	**0.0000013**	**J,DX**	0.000052	0.00000013	ug/L		01/12/23 15:35	02/01/23 04:49	1
2,3,4,7,8-PeCDF	ND		0.000052	0.00000015	ug/L		01/12/23 15:35	02/01/23 04:49	1
1,2,3,4,7,8-HxCDD	**0.0000015**	**J,DX q MB**	0.000052	0.00000025	ug/L		01/12/23 15:35	02/01/23 04:49	1
1,2,3,6,7,8-HxCDD	**0.0000011**	**J,DX**	0.000052	0.00000028	ug/L		01/12/23 15:35	02/01/23 04:49	1
1,2,3,7,8,9-HxCDD	**0.0000012**	**J,DX q**	0.000052	0.00000024	ug/L		01/12/23 15:35	02/01/23 04:49	1
1,2,3,4,7,8-HxCDF	**0.0000015**	**J,DX**	0.000052	0.00000026	ug/L		01/12/23 15:35	02/01/23 04:49	1
1,2,3,6,7,8-HxCDF	**0.0000012**	**J,DX q**	0.000052	0.00000026	ug/L		01/12/23 15:35	02/01/23 04:49	1
1,2,3,7,8,9-HxCDF	**0.0000029**	**J,DX MB**	0.000052	0.00000023	ug/L		01/12/23 15:35	02/01/23 04:49	1
2,3,4,6,7,8-HxCDF	**0.00000070**	**J,DX q**	0.000052	0.00000022	ug/L		01/12/23 15:35	02/01/23 04:49	1
1,2,3,4,6,7,8-HpCDD	**0.000023**	**J,DX MB**	0.000052	0.00000041	ug/L		01/12/23 15:35	02/01/23 04:49	1
1,2,3,4,6,7,8-HpCDF	**0.000020**	**J,DX MB**	0.000052	0.00000047	ug/L		01/12/23 15:35	02/01/23 04:49	1
1,2,3,4,7,8,9-HpCDF	**0.0000013**	**J,DX MB**	0.000052	0.00000042	ug/L		01/12/23 15:35	02/01/23 04:49	1
OCDD	**0.00028**	**MB**	0.00010	0.00000092	ug/L		01/12/23 15:35	02/01/23 04:49	1
OCDF	**0.000025**	**J,DX MB**	0.00010	0.00000052	ug/L		01/12/23 15:35	02/01/23 04:49	1
Total TCDD	ND		0.000010	0.00000084	ug/L		01/12/23 15:35	02/01/23 04:49	1
Total TCDF	**0.0000021**	**J,DX**	0.000010	0.00000014	ug/L		01/12/23 15:35	02/01/23 04:49	1
Total PeCDD	ND		0.000052	0.00000028	ug/L		01/12/23 15:35	02/01/23 04:49	1
Total PeCDF	**0.0000016**	**J,DX q**	0.000052	0.00000014	ug/L		01/12/23 15:35	02/01/23 04:49	1
Total HxCDD	**0.000013**	**J,DX q MB**	0.000052	0.00000026	ug/L		01/12/23 15:35	02/01/23 04:49	1
Total HxCDF	**0.000013**	**J,DX q MB**	0.000052	0.00000024	ug/L		01/12/23 15:35	02/01/23 04:49	1
Total HpCDD	**0.000063**	**J,DX MB**	0.000052	0.00000041	ug/L		01/12/23 15:35	02/01/23 04:49	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDF	**0.000032**	**J,DX MB**	0.000052	0.00000045	ug/L		01/12/23 15:35	02/01/23 04:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*68*		*25 - 164*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-2,3,7,8-TCDF	*63*		*24 - 169*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-1,2,3,7,8-PeCDD	*79*		*25 - 181*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-1,2,3,7,8-PeCDF	*76*		*24 - 185*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-2,3,4,7,8-PeCDF	*73*		*21 - 178*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*32 - 141*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-1,2,3,6,7,8-HxCDD	*68*		*28 - 130*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-1,2,3,4,7,8-HxCDF	*78*		*26 - 152*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-1,2,3,6,7,8-HxCDF	*77*		*26 - 123*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-1,2,3,7,8,9-HxCDF	*93*		*29 - 147*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-2,3,4,6,7,8-HxCDF	*91*		*28 - 136*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*94*		*23 - 140*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*82*		*28 - 143*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*105*		*26 - 138*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-OCDD	*95*		*17 - 157*	*01/12/23 15:35*	*02/01/23 04:49*	*1*
13C-OCDF	*115*		*17 - 157*	*01/12/23 15:35*	*02/01/23 04:49*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*82*		*35 - 197*	*01/12/23 15:35*	*02/01/23 04:49*	*1*

Client Sample ID: ILBMP0008_20230103
Date Collected: 01/03/23 07:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000060	ug/L		01/12/23 15:35	01/29/23 06:30	1
2,3,7,8-TCDF	ND		0.000011	0.00000092	ug/L		01/12/23 15:35	01/29/23 06:30	1
1,2,3,7,8-PeCDD	ND		0.000053	0.00000040	ug/L		01/12/23 15:35	01/29/23 06:30	1
1,2,3,7,8-PeCDF	**0.0000020**	**J,DX**	0.000053	0.00000027	ug/L		01/12/23 15:35	01/29/23 06:30	1
2,3,4,7,8-PeCDF	ND		0.000053	0.00000029	ug/L		01/12/23 15:35	01/29/23 06:30	1
1,2,3,4,7,8-HxCDD	**0.0000022**	**J,DX q MB**	0.000053	0.00000035	ug/L		01/12/23 15:35	01/29/23 06:30	1
1,2,3,6,7,8-HxCDD	**0.0000039**	**J,DX**	0.000053	0.00000038	ug/L		01/12/23 15:35	01/29/23 06:30	1
1,2,3,7,8,9-HxCDD	**0.0000037**	**J,DX**	0.000053	0.00000033	ug/L		01/12/23 15:35	01/29/23 06:30	1
1,2,3,4,7,8-HxCDF	**0.0000041**	**J,DX q**	0.000053	0.00000042	ug/L		01/12/23 15:35	01/29/23 06:30	1
1,2,3,6,7,8-HxCDF	**0.0000057**	**J,DX q**	0.000053	0.00000041	ug/L		01/12/23 15:35	01/29/23 06:30	1
1,2,3,7,8,9-HxCDF	**0.0000020**	**J,DX q MB**	0.000053	0.00000045	ug/L		01/12/23 15:35	01/29/23 06:30	1
2,3,4,6,7,8-HxCDF	**0.0000031**	**J,DX q**	0.000053	0.00000040	ug/L		01/12/23 15:35	01/29/23 06:30	1
1,2,3,4,6,7,8-HpCDD	**0.00012**	**MB**	0.000053	0.00000066	ug/L		01/12/23 15:35	01/29/23 06:30	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: ILBMP0008_20230103
Date Collected: 01/03/23 07:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,6,7,8-HpCDF	**0.00015**	**MB**	0.000053	0.00000068	ug/L		01/12/23 15:35	01/29/23 06:30	1
1,2,3,4,7,8,9-HpCDF	**0.0000038**	**J,DX q MB**	0.000053	0.00000073	ug/L		01/12/23 15:35	01/29/23 06:30	1
OCDD	**0.0012**	**MB**	0.00011	0.0000016	ug/L		01/12/23 15:35	01/29/23 06:30	1
OCDF	**0.00012**	**MB**	0.00011	0.00000060	ug/L		01/12/23 15:35	01/29/23 06:30	1
Total TCDD	ND		0.000011	0.0000013	ug/L		01/12/23 15:35	01/29/23 06:30	1
Total TCDF	ND		0.000011	0.00000075	ug/L		01/12/23 15:35	01/29/23 06:30	1
Total PeCDD	ND		0.000053	0.00000044	ug/L		01/12/23 15:35	01/29/23 06:30	1
Total PeCDF	**0.000012**	**J,DX q**	0.000053	0.00000028	ug/L		01/12/23 15:35	01/29/23 06:30	1
Total HxCDD	**0.000064**	**J,DX q MB**	0.000053	0.00000035	ug/L		01/12/23 15:35	01/29/23 06:30	1
Total HxCDF	**0.000083**	**J,DX q MB**	0.000053	0.00000042	ug/L		01/12/23 15:35	01/29/23 06:30	1
Total HpCDD	**0.00039**	**MB**	0.000053	0.00000066	ug/L		01/12/23 15:35	01/29/23 06:30	1
Total HpCDF	**0.00022**	**J,DX q MB**	0.000053	0.00000070	ug/L		01/12/23 15:35	01/29/23 06:30	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*64*		*25 - 164*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-1,2,3,7,8-PeCDD	*73*		*25 - 181*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-1,2,3,7,8-PeCDF	*67*		*24 - 185*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-2,3,4,7,8-PeCDF	*67*		*21 - 178*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*32 - 141*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-1,2,3,6,7,8-HxCDD	*78*		*28 - 130*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-1,2,3,4,7,8-HxCDF	*87*		*26 - 152*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-1,2,3,6,7,8-HxCDF	*86*		*26 - 123*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-1,2,3,7,8,9-HxCDF	*80*		*29 - 147*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-2,3,4,6,7,8-HxCDF	*88*		*28 - 136*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*88*		*23 - 140*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*28 - 143*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*87*		*26 - 138*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-OCDD	*84*		*17 - 157*	*01/12/23 15:35*	*01/29/23 06:30*	*1*
13C-OCDF	*90*		*17 - 157*	*01/12/23 15:35*	*01/29/23 06:30*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*79*		*35 - 197*	*01/12/23 15:35*	*01/29/23 06:30*	*1*

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-4
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000097	0.00000039	ug/L		01/12/23 15:35	01/29/23 07:18	1
2,3,7,8-TCDF	ND		0.0000097	0.00000038	ug/L		01/12/23 15:35	01/29/23 07:18	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000029	ug/L		01/12/23 15:35	01/29/23 07:18	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-4
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDF	**0.0000012**	**J,DX q**	0.000048	0.00000012	ug/L		01/12/23 15:35	01/29/23 07:18	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000015	ug/L		01/12/23 15:35	01/29/23 07:18	1
1,2,3,4,7,8-HxCDD	**0.0000025**	**J,DX MB**	0.000048	0.00000025	ug/L		01/12/23 15:35	01/29/23 07:18	1
1,2,3,6,7,8-HxCDD	**0.0000019**	**J,DX**	0.000048	0.00000028	ug/L		01/12/23 15:35	01/29/23 07:18	1
1,2,3,7,8,9-HxCDD	**0.0000025**	**J,DX**	0.000048	0.00000024	ug/L		01/12/23 15:35	01/29/23 07:18	1
1,2,3,4,7,8-HxCDF	**0.00000095**	**J,DX q**	0.000048	0.00000019	ug/L		01/12/23 15:35	01/29/23 07:18	1
1,2,3,6,7,8-HxCDF	**0.00000088**	**J,DX q**	0.000048	0.00000019	ug/L		01/12/23 15:35	01/29/23 07:18	1
1,2,3,7,8,9-HxCDF	**0.0000028**	**J,DX MB**	0.000048	0.00000018	ug/L		01/12/23 15:35	01/29/23 07:18	1
2,3,4,6,7,8-HxCDF	**0.00000066**	**J,DX q**	0.000048	0.00000016	ug/L		01/12/23 15:35	01/29/23 07:18	1
1,2,3,4,6,7,8-HpCDD	**0.000040**	**J,DX MB**	0.000048	0.00000034	ug/L		01/12/23 15:35	01/29/23 07:18	1
1,2,3,4,6,7,8-HpCDF	**0.000018**	**J,DX MB**	0.000048	0.00000021	ug/L		01/12/23 15:35	01/29/23 07:18	1
1,2,3,4,7,8,9-HpCDF	**0.0000011**	**J,DX MB q**	0.000048	0.00000022	ug/L		01/12/23 15:35	01/29/23 07:18	1
OCDD	**0.00034**	**MB**	0.000097	0.00000080	ug/L		01/12/23 15:35	01/29/23 07:18	1
OCDF	**0.000019**	**J,DX MB**	0.000097	0.00000039	ug/L		01/12/23 15:35	01/29/23 07:18	1
Total TCDD	ND		0.0000097	0.0000011	ug/L		01/12/23 15:35	01/29/23 07:18	1
Total TCDF	ND		0.0000097	0.00000017	ug/L		01/12/23 15:35	01/29/23 07:18	1
Total PeCDD	ND		0.000048	0.00000029	ug/L		01/12/23 15:35	01/29/23 07:18	1
Total PeCDF	**0.0000012**	**J,DX q**	0.000048	0.00000013	ug/L		01/12/23 15:35	01/29/23 07:18	1
Total HxCDD	**0.000018**	**J,DX MB q**	0.000048	0.00000025	ug/L		01/12/23 15:35	01/29/23 07:18	1
Total HxCDF	**0.000012**	**J,DX MB q**	0.000048	0.00000018	ug/L		01/12/23 15:35	01/29/23 07:18	1
Total HpCDD	**0.000093**	**J,DX MB**	0.000048	0.00000034	ug/L		01/12/23 15:35	01/29/23 07:18	1
Total HpCDF	**0.000028**	**J,DX MB q**	0.000048	0.00000022	ug/L		01/12/23 15:35	01/29/23 07:18	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*68*		*25 - 164*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-1,2,3,7,8-PeCDD	*70*		*25 - 181*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-1,2,3,7,8-PeCDF	*69*		*24 - 185*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-2,3,4,7,8-PeCDF	*65*		*21 - 178*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-1,2,3,4,7,8-HxCDD	*75*		*32 - 141*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-1,2,3,6,7,8-HxCDD	*70*		*28 - 130*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-1,2,3,4,7,8-HxCDF	*76*		*26 - 152*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-1,2,3,6,7,8-HxCDF	*78*		*26 - 123*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-1,2,3,7,8,9-HxCDF	*80*		*29 - 147*	*01/12/23 15:35*	*01/29/23 07:18*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-4
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,4,6,7,8-HxCDF	*87*		*28 - 136*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*85*		*23 - 140*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*78*		*28 - 143*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*87*		*26 - 138*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-OCDD	*85*		*17 - 157*	*01/12/23 15:35*	*01/29/23 07:18*	*1*
13C-OCDF	*91*		*17 - 157*	*01/12/23 15:35*	*01/29/23 07:18*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*83*		*35 - 197*	*01/12/23 15:35*	*01/29/23 07:18*	*1*

Client Sample ID: LPBMP0003_20230103
Date Collected: 01/03/23 10:00
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-5
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000033	ug/L		01/12/23 15:35	01/29/23 08:06	1
2,3,7,8-TCDF	ND		0.000010	0.00000040	ug/L		01/12/23 15:35	01/29/23 08:06	1
1,2,3,7,8-PeCDD	ND		0.000052	0.00000019	ug/L		01/12/23 15:35	01/29/23 08:06	1
1,2,3,7,8-PeCDF	**0.0000012**	**J,DX**	0.000052	0.00000014	ug/L		01/12/23 15:35	01/29/23 08:06	1
2,3,4,7,8-PeCDF	ND		0.000052	0.00000016	ug/L		01/12/23 15:35	01/29/23 08:06	1
1,2,3,4,7,8-HxCDD	**0.0000027**	**J,DX q MB**	0.000052	0.00000022	ug/L		01/12/23 15:35	01/29/23 08:06	1
1,2,3,6,7,8-HxCDD	**0.0000018**	**J,DX**	0.000052	0.00000026	ug/L		01/12/23 15:35	01/29/23 08:06	1
1,2,3,7,8,9-HxCDD	**0.0000022**	**J,DX q**	0.000052	0.00000022	ug/L		01/12/23 15:35	01/29/23 08:06	1
1,2,3,4,7,8-HxCDF	**0.00000093**	**J,DX**	0.000052	0.00000017	ug/L		01/12/23 15:35	01/29/23 08:06	1
1,2,3,6,7,8-HxCDF	**0.0000011**	**J,DX**	0.000052	0.00000017	ug/L		01/12/23 15:35	01/29/23 08:06	1
1,2,3,7,8,9-HxCDF	**0.0000030**	**J,DX MB**	0.000052	0.00000017	ug/L		01/12/23 15:35	01/29/23 08:06	1
2,3,4,6,7,8-HxCDF	**0.00000037**	**J,DX q**	0.000052	0.00000016	ug/L		01/12/23 15:35	01/29/23 08:06	1
1,2,3,4,6,7,8-HpCDD	**0.000035**	**J,DX MB**	0.000052	0.00000034	ug/L		01/12/23 15:35	01/29/23 08:06	1
1,2,3,4,6,7,8-HpCDF	**0.000018**	**J,DX MB**	0.000052	0.00000025	ug/L		01/12/23 15:35	01/29/23 08:06	1
1,2,3,4,7,8,9-HpCDF	**0.00000091**	**J,DX q MB**	0.000052	0.00000027	ug/L		01/12/23 15:35	01/29/23 08:06	1
OCDD	**0.00038**	**MB**	0.00010	0.00000069	ug/L		01/12/23 15:35	01/29/23 08:06	1
OCDF	**0.000020**	**J,DX MB**	0.00010	0.00000031	ug/L		01/12/23 15:35	01/29/23 08:06	1
Total TCDD	ND		0.000010	0.00000033	ug/L		01/12/23 15:35	01/29/23 08:06	1
Total TCDF	ND		0.000010	0.00000023	ug/L		01/12/23 15:35	01/29/23 08:06	1
Total PeCDD	ND		0.000052	0.00000019	ug/L		01/12/23 15:35	01/29/23 08:06	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LPBMP0003_20230103
Date Collected: 01/03/23 10:00
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-5
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total PeCDF	**0.0000022**	**J,DX q**	0.000052	0.00000015	ug/L		01/12/23 15:35	01/29/23 08:06	1
Total HxCDD	**0.000015**	**J,DX q MB**	0.000052	0.00000023	ug/L		01/12/23 15:35	01/29/23 08:06	1
Total HxCDF	**0.000013**	**J,DX q MB**	0.000052	0.00000017	ug/L		01/12/23 15:35	01/29/23 08:06	1
Total HpCDD	**0.000085**	**J,DX MB**	0.000052	0.00000034	ug/L		01/12/23 15:35	01/29/23 08:06	1
Total HpCDF	**0.000030**	**J,DX q MB**	0.000052	0.00000026	ug/L		01/12/23 15:35	01/29/23 08:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*66*		*25 - 164*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-2,3,7,8-TCDF	*63*		*24 - 169*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-1,2,3,7,8-PeCDD	*74*		*25 - 181*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-2,3,4,7,8-PeCDF	*73*		*21 - 178*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-1,2,3,4,7,8-HxCDD	*84*		*32 - 141*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-1,2,3,6,7,8-HxCDD	*73*		*28 - 130*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-1,2,3,4,7,8-HxCDF	*85*		*26 - 152*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-1,2,3,6,7,8-HxCDF	*82*		*26 - 123*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-1,2,3,7,8,9-HxCDF	*82*		*29 - 147*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-2,3,4,6,7,8-HxCDF	*87*		*28 - 136*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*91*		*23 - 140*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*28 - 143*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*91*		*26 - 138*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-OCDD	*93*		*17 - 157*	*01/12/23 15:35*	*01/29/23 08:06*	*1*
13C-OCDF	*101*		*17 - 157*	*01/12/23 15:35*	*01/29/23 08:06*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*77*		*35 - 197*	*01/12/23 15:35*	*01/29/23 08:06*	*1*

Client Sample ID: LBBMP0004_20230103
Date Collected: 01/03/23 10:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-6
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000058	ug/L		01/12/23 15:35	01/29/23 08:55	1
2,3,7,8-TCDF	ND		0.000010	0.00000008 0	ug/L		01/12/23 15:35	01/29/23 08:55	1
1,2,3,7,8-PeCDD	ND		0.000051	0.00000036	ug/L		01/12/23 15:35	01/29/23 08:55	1
1,2,3,7,8-PeCDF	**0.0000016**	**J,DX**	0.000051	0.00000016	ug/L		01/12/23 15:35	01/29/23 08:55	1
2,3,4,7,8-PeCDF	ND		0.000051	0.00000018	ug/L		01/12/23 15:35	01/29/23 08:55	1
1,2,3,4,7,8-HxCDD	**0.0000015**	**J,DX MB q**	0.000051	0.00000011	ug/L		01/12/23 15:35	01/29/23 08:55	1
1,2,3,6,7,8-HxCDD	**0.00000081**	**J,DX q**	0.000051	0.00000012	ug/L		01/12/23 15:35	01/29/23 08:55	1
1,2,3,7,8,9-HxCDD	**0.0000010**	**J,DX**	0.000051	0.00000010	ug/L		01/12/23 15:35	01/29/23 08:55	1
1,2,3,4,7,8-HxCDF	**0.00000072**	**J,DX**	0.000051	0.00000009 5	ug/L		01/12/23 15:35	01/29/23 08:55	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LBBMP0004_20230103
Date Collected: 01/03/23 10:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-6
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,6,7,8-HxCDF	0.00000089	J,DX	0.000051	0.000000091	ug/L		01/12/23 15:35	01/29/23 08:55	1
1,2,3,7,8,9-HxCDF	0.0000031	J,DX MB	0.000051	0.00000010	ug/L		01/12/23 15:35	01/29/23 08:55	1
2,3,4,6,7,8-HxCDF	0.00000012	J,DX q	0.000051	0.000000090	ug/L		01/12/23 15:35	01/29/23 08:55	1
1,2,3,4,6,7,8-HpCDD	0.000022	J,DX MB	0.000051	0.0000002	ug/L		01/12/23 15:35	01/29/23 08:55	1
1,2,3,4,6,7,8-HpCDF	0.0000043	J,DX MB q	0.000051	0.00000015	ug/L		01/12/23 15:35	01/29/23 08:55	1
1,2,3,4,7,8,9-HpCDF	0.00000068	J,DX MB q	0.000051	0.00000016	ug/L		01/12/23 15:35	01/29/23 08:55	1
OCDD	0.00025	MB	0.00010	0.0000007	ug/L		01/12/23 15:35	01/29/23 08:55	1
OCDF	0.000015	J,DX MB	0.00010	0.0000005	ug/L		01/12/23 15:35	01/29/23 08:55	1
Total TCDD	ND		0.000010	0.0000005	ug/L		01/12/23 15:35	01/29/23 08:55	1
Total TCDF	ND		0.000010	0.0000002	ug/L		01/12/23 15:35	01/29/23 08:55	1
Total PeCDD	ND		0.000051	0.0000003	ug/L		01/12/23 15:35	01/29/23 08:55	1
Total PeCDF	0.0000016	J,DX	0.000051	0.00000017	ug/L		01/12/23 15:35	01/29/23 08:55	1
Total HxCDD	0.0000069	J,DX MB q	0.000051	0.00000011	ug/L		01/12/23 15:35	01/29/23 08:55	1
Total HxCDF	0.0000049	J,DX MB q	0.000051	0.00000095	ug/L		01/12/23 15:35	01/29/23 08:55	1
Total HpCDD	0.000039	J,DX MB q	0.000051	0.0000003	ug/L		01/12/23 15:35	01/29/23 08:55	1
Total HpCDF	0.0000091	J,DX MB q	0.000051	0.00000015	ug/L		01/12/23 15:35	01/29/23 08:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*62*		*25 - 164*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-2,3,7,8-TCDF	*60*		*24 - 169*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-1,2,3,7,8-PeCDD	*67*		*25 - 181*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-1,2,3,7,8-PeCDF	*66*		*24 - 185*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-2,3,4,7,8-PeCDF	*64*		*21 - 178*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-1,2,3,4,7,8-HxCDD	*83*		*32 - 141*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-1,2,3,6,7,8-HxCDD	*72*		*28 - 130*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-1,2,3,4,7,8-HxCDF	*83*		*26 - 152*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-1,2,3,6,7,8-HxCDF	*81*		*26 - 123*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-1,2,3,7,8,9-HxCDF	*77*		*29 - 147*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-2,3,4,6,7,8-HxCDF	*84*		*28 - 136*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*85*		*23 - 140*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*79*		*28 - 143*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*83*		*26 - 138*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-OCDD	*80*		*17 - 157*	*01/12/23 15:35*	*01/29/23 08:55*	*1*
13C-OCDF	*87*		*17 - 157*	*01/12/23 15:35*	*01/29/23 08:55*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*77*		*35 - 197*	*01/12/23 15:35*	*01/29/23 08:55*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**0.0000017**	**J,DX**	0.000010	0.00000048	ug/L		01/12/23 15:35	02/07/23 11:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*77*		*24 - 169*	*01/12/23 15:35*	*02/07/23 11:41*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*102*		*35 - 197*	*01/12/23 15:35*	*02/07/23 11:41*	*1*

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.00000055	ug/L		01/12/23 15:35	02/07/23 12:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*68*		*24 - 169*	*01/12/23 15:35*	*02/07/23 12:16*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*98*		*35 - 197*	*01/12/23 15:35*	*02/07/23 12:16*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-122524-1	ILBMP0004_20230103	79
570-122524-1 - RA	ILBMP0004_20230103	102
570-122524-2	ILBMP0005_20230103	82
570-122524-2 - RA	ILBMP0005_20230103	98
570-122524-3	ILBMP0008_20230103	79
570-122524-4	LPBMP0002_20230103	83
570-122524-5	LPBMP0003_20230103	77
570-122524-6	LBBMP0004_20230103	77
MB 320-646600/1-A	Method Blank	79

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-646600/2-A	Lab Control Sample	82
LCSD 320-646600/3-A	Lab Control Sample Dup	74

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-122524-1	ILBMP0004_20230103	72	66	79	76	72	86	78	85
570-122524-1 - RA	ILBMP0004_20230103		77						
570-122524-2	ILBMP0005_20230103	68	63	79	76	73	77	68	78
570-122524-2 - RA	ILBMP0005_20230103		68						
570-122524-3	ILBMP0008_20230103	64	61	73	67	67	81	78	87
570-122524-4	LPBMP0002_20230103	68	61	70	69	65	75	70	76
570-122524-5	LPBMP0003_20230103	66	63	74	72	73	84	73	85
570-122524-6	LBBMP0004_20230103	62	60	67	66	64	83	72	83
MB 320-646600/1-A	Method Blank	56	45	54	51	51	63	56	62

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-122524-1	ILBMP0004_20230103	87	82	92	93	86	89	95	98
570-122524-1 - RA	ILBMP0004_20230103								
570-122524-2	ILBMP0005_20230103	77	93	91	94	82	105	95	115
570-122524-2 - RA	ILBMP0005_20230103								
570-122524-3	ILBMP0008_20230103	86	80	88	88	83	87	84	90
570-122524-4	LPBMP0002_20230103	78	80	87	85	78	87	85	91
570-122524-5	LPBMP0003_20230103	82	82	87	91	83	91	93	101
570-122524-6	LBBMP0004_20230103	81	77	84	85	79	83	80	87
MB 320-646600/1-A	Method Blank	62	63	67	68	59	66	65	69

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-646600/2-A	Lab Control Sample	64	59	71	68	61	63	56	61
LCSD 320-646600/3-A	Lab Control Sample Dup	60	54	66	64	62	72	65	71

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Job ID: 570-122524-2
Project/Site: Boeing SSFL ISRA and BMP

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-646600/2-A	Lab Control Sample	61	80	74	85	66	91	99	107
LCSD 320-646600/3-A	Lab Control Sample Dup	72	74	79	83	72	82	87	92

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-646600/1-A
Matrix: Water
Analysis Batch: 650252

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 646600

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000081	ug/L		01/12/23 15:35	01/29/23 00:53	1
2,3,7,8-TCDF	ND		0.000010	0.00000022	ug/L		01/12/23 15:35	01/29/23 00:53	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000055	ug/L		01/12/23 15:35	01/29/23 00:53	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000018	ug/L		01/12/23 15:35	01/29/23 00:53	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000021	ug/L		01/12/23 15:35	01/29/23 00:53	1
1,2,3,4,7,8-HxCDD	0.00000139	J,DX q	0.000050	0.00000053	ug/L		01/12/23 15:35	01/29/23 00:53	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000058	ug/L		01/12/23 15:35	01/29/23 00:53	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000050	ug/L		01/12/23 15:35	01/29/23 00:53	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000042	ug/L		01/12/23 15:35	01/29/23 00:53	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000041	ug/L		01/12/23 15:35	01/29/23 00:53	1
1,2,3,7,8,9-HxCDF	0.00000341	J,DX q	0.000050	0.00000040	ug/L		01/12/23 15:35	01/29/23 00:53	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000036	ug/L		01/12/23 15:35	01/29/23 00:53	1
1,2,3,4,6,7,8-HpCDD	0.00000828	J,DX q	0.000050	0.00000065	ug/L		01/12/23 15:35	01/29/23 00:53	1
1,2,3,4,6,7,8-HpCDF	0.00000801	J,DX	0.000050	0.00000062	ug/L		01/12/23 15:35	01/29/23 00:53	1
1,2,3,4,7,8,9-HpCDF	0.00000735	J,DX	0.000050	0.00000063	ug/L		01/12/23 15:35	01/29/23 00:53	1
OCDD	0.0000347	J,DX	0.00010	0.0000021	ug/L		01/12/23 15:35	01/29/23 00:53	1
OCDF	0.00000433	J,DX	0.00010	0.0000012	ug/L		01/12/23 15:35	01/29/23 00:53	1
Total TCDD	ND		0.000010	0.0000014	ug/L		01/12/23 15:35	01/29/23 00:53	1
Total TCDF	ND		0.000010	0.00000058	ug/L		01/12/23 15:35	01/29/23 00:53	1
Total PeCDD	ND		0.000050	0.00000055	ug/L		01/12/23 15:35	01/29/23 00:53	1
Total PeCDF	ND		0.000050	0.00000073	ug/L		01/12/23 15:35	01/29/23 00:53	1
Total HxCDD	0.00000890	J,DX q	0.000050	0.00000054	ug/L		01/12/23 15:35	01/29/23 00:53	1
Total HxCDF	0.00000341	J,DX q	0.000050	0.00000040	ug/L		01/12/23 15:35	01/29/23 00:53	1
Total HpCDD	0.0000175	J,DX q	0.000050	0.00000065	ug/L		01/12/23 15:35	01/29/23 00:53	1
Total HpCDF	0.0000154	J,DX	0.000050	0.00000062	ug/L		01/12/23 15:35	01/29/23 00:53	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*56*		*25 - 164*	*01/12/23 15:35*	*01/29/23 00:53*	*1*
13C-2,3,7,8-TCDF	*45*		*24 - 169*	*01/12/23 15:35*	*01/29/23 00:53*	*1*
13C-1,2,3,7,8-PeCDD	*54*		*25 - 181*	*01/12/23 15:35*	*01/29/23 00:53*	*1*
13C-1,2,3,7,8-PeCDF	*51*		*24 - 185*	*01/12/23 15:35*	*01/29/23 00:53*	*1*
13C-2,3,4,7,8-PeCDF	*51*		*21 - 178*	*01/12/23 15:35*	*01/29/23 00:53*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-646600/1-A
Matrix: Water
Analysis Batch: 650252

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 646600

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,7,8-HxCDD	63		32 - 141	01/12/23 15:35	01/29/23 00:53	1
13C-1,2,3,6,7,8-HxCDD	56		28 - 130	01/12/23 15:35	01/29/23 00:53	1
13C-1,2,3,4,7,8-HxCDF	62		26 - 152	01/12/23 15:35	01/29/23 00:53	1
13C-1,2,3,6,7,8-HxCDF	62		26 - 123	01/12/23 15:35	01/29/23 00:53	1
13C-1,2,3,7,8,9-HxCDF	63		29 - 147	01/12/23 15:35	01/29/23 00:53	1
13C-2,3,4,6,7,8-HxCDF	67		28 - 136	01/12/23 15:35	01/29/23 00:53	1
13C-1,2,3,4,6,7,8-HpCDD	68		23 - 140	01/12/23 15:35	01/29/23 00:53	1
13C-1,2,3,4,6,7,8-HpCDF	59		28 - 143	01/12/23 15:35	01/29/23 00:53	1
13C-1,2,3,4,7,8,9-HpCDF	66		26 - 138	01/12/23 15:35	01/29/23 00:53	1
13C-OCDD	65		17 - 157	01/12/23 15:35	01/29/23 00:53	1
13C-OCDF	69		17 - 157	01/12/23 15:35	01/29/23 00:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	79		35 - 197	01/12/23 15:35	01/29/23 00:53	1

Lab Sample ID: LCS 320-646600/2-A
Matrix: Water
Analysis Batch: 650252

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 646600

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000214		ug/L		107	67 - 158
2,3,7,8-TCDF	0.000200	0.000246		ug/L		123	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000949		ug/L		95	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000966		ug/L		97	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000962		ug/L		96	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000915	MB	ug/L		91	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00109		ug/L		109	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.00118		ug/L		118	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000979		ug/L		98	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000989		ug/L		99	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.00101	MB	ug/L		101	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.00100		ug/L		100	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000936	MB	ug/L		94	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.00105	MB	ug/L		105	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000952	MB	ug/L		95	78 - 138
OCDD	0.00200	0.00210	MB	ug/L		105	78 - 144
OCDF	0.00200	0.00202	MB	ug/L		101	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	64		20 - 175
13C-2,3,7,8-TCDF	59		22 - 152
13C-1,2,3,7,8-PeCDD	71		21 - 227
13C-1,2,3,7,8-PeCDF	68		21 - 192
13C-2,3,4,7,8-PeCDF	61		13 - 328
13C-1,2,3,4,7,8-HxCDD	63		21 - 193
13C-1,2,3,6,7,8-HxCDD	56		25 - 163
13C-1,2,3,4,7,8-HxCDF	61		19 - 202
13C-1,2,3,6,7,8-HxCDF	61		21 - 159

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-646600/2-A
Matrix: Water
Analysis Batch: 650252

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 646600

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,7,8,9-HxCDF	80		17 - 205
13C-2,3,4,6,7,8-HxCDF	74		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	85		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	66		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	91		20 - 186
13C-OCDD	99		13 - 199
13C-OCDF	107		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	82		31 - 191

Lab Sample ID: LCSD 320-646600/3-A
Matrix: Water
Analysis Batch: 650252

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 646600

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000194		ug/L		97	67 - 158	10	50
2,3,7,8-TCDF			0.000200	0.000233		ug/L		116	75 - 158	5	50
1,2,3,7,8-PeCDD			0.00100	0.000881		ug/L		88	70 - 142	7	50
1,2,3,7,8-PeCDF			0.00100	0.000878		ug/L		88	80 - 134	9	50
2,3,4,7,8-PeCDF			0.00100	0.000877		ug/L		88	68 - 160	9	50
1,2,3,4,7,8-HxCDD			0.00100	0.000831	MB	ug/L		83	70 - 164	10	50
1,2,3,6,7,8-HxCDD			0.00100	0.000962		ug/L		96	76 - 134	13	50
1,2,3,7,8,9-HxCDD			0.00100	0.000910		ug/L		91	64 - 162	26	50
1,2,3,4,7,8-HxCDF			0.00100	0.000886		ug/L		89	72 - 134	10	50
1,2,3,6,7,8-HxCDF			0.00100	0.000892		ug/L		89	84 - 130	10	50
1,2,3,7,8,9-HxCDF			0.00100	0.000909	MB	ug/L		91	78 - 130	10	50
2,3,4,6,7,8-HxCDF			0.00100	0.000892		ug/L		89	70 - 156	12	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000848	MB	ug/L		85	70 - 140	10	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000942	MB	ug/L		94	82 - 122	10	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000839	MB	ug/L		84	78 - 138	13	50
OCDD			0.00200	0.00188	MB	ug/L		94	78 - 144	11	50
OCDF			0.00200	0.00181	MB	ug/L		90	63 - 170	11	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	60		20 - 175
13C-2,3,7,8-TCDF	54		22 - 152
13C-1,2,3,7,8-PeCDD	66		21 - 227
13C-1,2,3,7,8-PeCDF	64		21 - 192
13C-2,3,4,7,8-PeCDF	62		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 193
13C-1,2,3,6,7,8-HxCDD	65		25 - 163
13C-1,2,3,4,7,8-HxCDF	71		19 - 202
13C-1,2,3,6,7,8-HxCDF	72		21 - 159
13C-1,2,3,7,8,9-HxCDF	74		17 - 205
13C-2,3,4,6,7,8-HxCDF	79		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	83		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	72		21 - 158

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-646600/3-A
Matrix: Water
Analysis Batch: 650252

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 646600

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,7,8,9-HpCDF	82		20 - 186
13C-OCDD	87		13 - 199
13C-OCDF	92		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	74		31 - 191

Specialty Organics

Prep Batch: 646600

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-1 - RA	ILBMP0004_20230103	Total/NA	Water	1613B	
570-122524-1	ILBMP0004_20230103	Total/NA	Water	1613B	
570-122524-2 - RA	ILBMP0005_20230103	Total/NA	Water	1613B	
570-122524-2	ILBMP0005_20230103	Total/NA	Water	1613B	
570-122524-3	ILBMP0008_20230103	Total/NA	Water	1613B	
570-122524-4	LPBMP0002_20230103	Total/NA	Water	1613B	
570-122524-5	LPBMP0003_20230103	Total/NA	Water	1613B	
570-122524-6	LBBMP0004_20230103	Total/NA	Water	1613B	
MB 320-646600/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-646600/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-646600/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 650252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-1	ILBMP0004_20230103	Total/NA	Water	1613B	646600
570-122524-3	ILBMP0008_20230103	Total/NA	Water	1613B	646600
570-122524-4	LPBMP0002_20230103	Total/NA	Water	1613B	646600
570-122524-5	LPBMP0003_20230103	Total/NA	Water	1613B	646600
570-122524-6	LBBMP0004_20230103	Total/NA	Water	1613B	646600
MB 320-646600/1-A	Method Blank	Total/NA	Water	1613B	646600
LCS 320-646600/2-A	Lab Control Sample	Total/NA	Water	1613B	646600
LCSD 320-646600/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	646600

Analysis Batch: 650893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-2	ILBMP0005_20230103	Total/NA	Water	1613B	646600

Analysis Batch: 652285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-1 - RA	ILBMP0004_20230103	Total/NA	Water	1613B	646600
570-122524-2 - RA	ILBMP0005_20230103	Total/NA	Water	1613B	646600

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-2

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		957.1 mL	20.0 uL	646600	01/12/23 15:35	CGB	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	652285	02/07/23 11:41	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			957.1 mL	20.0 uL	646600	01/12/23 15:35	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650252	01/29/23 04:54	KSS	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		957.7 mL	20.0 uL	646600	01/12/23 15:35	CGB	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	652285	02/07/23 12:16	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			957.7 mL	20.0 uL	646600	01/12/23 15:35	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650893	02/01/23 04:49	KSS	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: ILBMP0008_20230103
Date Collected: 01/03/23 07:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			939.1 mL	20.0 uL	646600	01/12/23 15:35	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650252	01/29/23 06:30	KSS	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1031.4 mL	20.0 uL	646600	01/12/23 15:35	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650252	01/29/23 07:18	KSS	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: LPBMP0003_20230103
Date Collected: 01/03/23 10:00
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			955.2 mL	20.0 uL	646600	01/12/23 15:35	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650252	01/29/23 08:06	KSS	EET SAC
	Instrument ID: DFS 1									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-122524-2
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: LBBMP0004_20230103
Lab Sample ID: 570-122524-6
Date Collected: 01/03/23 10:15
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			971.4 mL	20.0 uL	646600	01/12/23 15:35	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650252	01/29/23 08:55	KSS	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-2

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122524-1	ILBMP0004_20230103	Water	01/03/23 07:30	01/04/23 17:25
570-122524-2	ILBMP0005_20230103	Water	01/03/23 07:45	01/04/23 17:25
570-122524-3	ILBMP0008_20230103	Water	01/03/23 07:15	01/04/23 17:25
570-122524-4	LPBMP0002_20230103	Water	01/03/23 10:30	01/04/23 17:25
570-122524-5	LPBMP0003_20230103	Water	01/03/23 10:00	01/04/23 17:25
570-122524-6	LBBMP0004_20230103	Water	01/03/23 10:15	01/04/23 17:25

122524

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue, Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

ectAmerica services under CoC hall be performed in accordance h t l e T&Cs w th Blanket Service Agreement # 20 22 stAmer ca by and between Haley & Aldrich c., sub idiaries and affiliates and TestAmerica Laboratories c.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8 Cd Cu Pb (Total Recoverable)	Method 200.8 Cd, Cu Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_			C	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_			C	WM	8	Y	N	X	X	X	X	X	X	X
BBMP0002_			G	WM	8	Y	Y	X	X	X	X	X	X	X
BBMP0004_ 202301 03	01/03/23	0730	G	WM	8	Y	N	X	X	X	X	X	X	X
BBMP0005_ 202301 03		0745	G	WM	8	Y	N	X	X	X	X	X	X	X
BBMP0008_ 202301 03		0715	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_ 202301 03		1030	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_ 202301 03		1000	G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_ 202301 03		1015	G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01_ ~~202301 03~~	~~01/03/23~~	1030	~~G~~	~~WM~~	~~8~~	~~Y~~	~~N~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1

570-122524 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments. **ECI #44009815**
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of rece pt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C) Obs'd.____ Corr'd:____ Therm ID No.:____

Relinquished by	Company	Date/Time	Received by	Date/Time
	H&A	1-4-23 / 1055	EC	1/4/23 1055
	EC	1/4/23 1725		1/4/23 1725
			Received in Laboratory by:	Date/Time:

2.8/2.8 2.1/2.1 2.3/2.3 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2/8/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203288.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program California		Job #: 570-122524-1
Address: 5755 8th Street East,	Due Date Requested: 1/16/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL
B NaOH
C Zn Acetate
D Nitric Acid
E NaHSO4
F MeOH
G Amchlor
H Ascorbic Acid
I Ice
J DI Water
K EDTA
L EDA
M Hexane
N None
O AsNaO2
P Na2O4S
Q Na2SO3
R Na2S2O3
S H2SO4
T TSP Dodecahydrate
U Acetone
V MCAA
W pH 4-5
Y Trizma
Z other (specify)

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
ILBMP0004_20230103 (570-122524-1)	1/3/23	07:30 Pacific		Water			X	X	2	
ILBMP0005_20230103 (570-122524-2)	1/3/23	07:45 Pacific		Water			X	X	2	
ILBMP0008_20230103 (570-122524-3)	1/3/23	07:15 Pacific		Water			X	X	2	
LPBMP0002_20230103 (570-122524-4)	1/3/23	10:30 Pacific		Water			X	X	2	
LPBMP0003_20230103 (570-122524-5)	1/3/23	10:00 Pacific		Water			X	X	2	
LBBMP0004_20230103 (570-122524-6)	1/3/23	10:15 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin isted above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Esther Rodriguez	01/05/23 1318	EC			

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No
570-203288

Containers

Count	Container Type	Preservative
12	Mercury-LL Method 1631 Sample Kit	None

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203287.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122524-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/20/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
ILBMP0004_20230103 (570-122524-1)	1/3/23	07:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
ILBMP0005_20230103 (570-122524-2)	1/3/23	07:45 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
ILBMP0008_20230103 (570-122524-3)	1/3/23	07:15 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
LPBMP0002_20230103 (570-122524-4)	1/3/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
LPBMP0003_20230103 (570-122524-5)	1/3/23	10:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
LBBMP0004_20230103 (570-122524-6)	1/3/23	10:15 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: Cath. Harling	Date/Time: 01/05/23 13:15	Company: Calscience	Received by:	Date/Time: 1/6/23 9:45	Company: EEC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.6c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122524-2

Login Number: 122524
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122524-2

Login Number: 122524
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/06/23 03:57 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.6c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122524-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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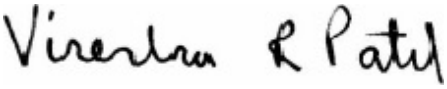
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122524-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122524-3

Comments
No additional comments.

Receipt
The samples were received on 1/4/2023 5:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9º C, 2.1º C, 2.3º C and 2.8º C.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-3

Client Sample ID: ILBMP0004_20230103 — Lab Sample ID: 570-122524-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	6.26		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	14.80		0.01	0.01	%	1		D4464	Total/NA
Medium Sand (0.25 to 0.5 mm)	0.27		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	51.49		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	57.75		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	27.18		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: ILBMP0005_20230103 — Lab Sample ID: 570-122524-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	3.54		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	3.93		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	63.47		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	67.00		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	29.06		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: ILBMP0008_20230103 — Lab Sample ID: 570-122524-3

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	3.47		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	24.08		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	28.64		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	32.11		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	43.81		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: LPBMP0002_20230103 — Lab Sample ID: 570-122524-4

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	1.50		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	34.17		0.01	0.01	%	1		D4464	Total/NA
Medium Sand (0.25 to 0.5 mm)	6.30		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	18.13		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	19.63		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	39.90		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: LPBMP0003_20230103 — Lab Sample ID: 570-122524-5

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	2.80		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	20.43		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	30.57		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	33.36		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	46.21		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: LBBMP0004_20230103 — Lab Sample ID: 570-122524-6

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	3.42		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	25.81		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	29.23		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	70.77		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**6.26**		0.01	0.01	%			01/23/23 11:18	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/23/23 11:18	1
Fine Sand (0.125 to 0.25mm)	**14.80**		0.01	0.01	%			01/23/23 11:18	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/23/23 11:18	1
Medium Sand (0.25 to 0.5 mm)	**0.27**		0.01	0.01	%			01/23/23 11:18	1
Silt (0.00391 to 0.0625mm)	**51.49**		0.01	0.01	%			01/23/23 11:18	1
Total Silt and Clay (0 to 0.0626mm)	**57.75**		0.01	0.01	%			01/23/23 11:18	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/23/23 11:18	1
Very Fine Sand (0.0625 to 0.125 mm)	**27.18**		0.01	0.01	%			01/23/23 11:18	1

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-2
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**3.54**		0.01	0.01	%			01/23/23 11:29	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/23/23 11:29	1
Fine Sand (0.125 to 0.25mm)	**3.93**		0.01	0.01	%			01/23/23 11:29	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/23/23 11:29	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/23/23 11:29	1
Silt (0.00391 to 0.0625mm)	**63.47**		0.01	0.01	%			01/23/23 11:29	1
Total Silt and Clay (0 to 0.0626mm)	**67.00**		0.01	0.01	%			01/23/23 11:29	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/23/23 11:29	1
Very Fine Sand (0.0625 to 0.125 mm)	**29.06**		0.01	0.01	%			01/23/23 11:29	1

Client Sample ID: ILBMP0008_20230103
Date Collected: 01/03/23 07:15
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-3
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**3.47**		0.01	0.01	%			01/23/23 11:36	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/23/23 11:36	1
Fine Sand (0.125 to 0.25mm)	**24.08**		0.01	0.01	%			01/23/23 11:36	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/23/23 11:36	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/23/23 11:36	1
Silt (0.00391 to 0.0625mm)	**28.64**		0.01	0.01	%			01/23/23 11:36	1
Total Silt and Clay (0 to 0.0626mm)	**32.11**		0.01	0.01	%			01/23/23 11:36	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/23/23 11:36	1
Very Fine Sand (0.0625 to 0.125 mm)	**43.81**		0.01	0.01	%			01/23/23 11:36	1

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-4
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**1.50**		0.01	0.01	%			01/23/23 11:45	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/23/23 11:45	1
Fine Sand (0.125 to 0.25mm)	**34.17**		0.01	0.01	%			01/23/23 11:45	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/23/23 11:45	1
Medium Sand (0.25 to 0.5 mm)	**6.30**		0.01	0.01	%			01/23/23 11:45	1
Silt (0.00391 to 0.0625mm)	**18.13**		0.01	0.01	%			01/23/23 11:45	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-4
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Silt and Clay (0 to 0.0626mm)	**19.63**		0.01	0.01	%			01/23/23 11:45	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/23/23 11:45	1
Very Fine Sand (0.0625 to 0.125 mm)	**39.90**		0.01	0.01	%			01/23/23 11:45	1

Client Sample ID: LPBMP0003_20230103
Date Collected: 01/03/23 10:00
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-5
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**2.80**		0.01	0.01	%			01/23/23 11:52	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/23/23 11:52	1
Fine Sand (0.125 to 0.25mm)	**20.43**		0.01	0.01	%			01/23/23 11:52	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/23/23 11:52	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/23/23 11:52	1
Silt (0.00391 to 0.0625mm)	**30.57**		0.01	0.01	%			01/23/23 11:52	1
Total Silt and Clay (0 to 0.0626mm)	**33.36**		0.01	0.01	%			01/23/23 11:52	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/23/23 11:52	1
Very Fine Sand (0.0625 to 0.125 mm)	**46.21**		0.01	0.01	%			01/23/23 11:52	1

Client Sample ID: LBBMP0004_20230103
Date Collected: 01/03/23 10:15
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-6
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**3.42**		0.01	0.01	%			01/23/23 12:02	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/23/23 12:02	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			01/23/23 12:02	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/23/23 12:02	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/23/23 12:02	1
Silt (0.00391 to 0.0625mm)	**25.81**		0.01	0.01	%			01/23/23 12:02	1
Total Silt and Clay (0 to 0.0626mm)	**29.23**		0.01	0.01	%			01/23/23 12:02	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/23/23 12:02	1
Very Fine Sand (0.0625 to 0.125 mm)	**70.77**		0.01	0.01	%			01/23/23 12:02	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

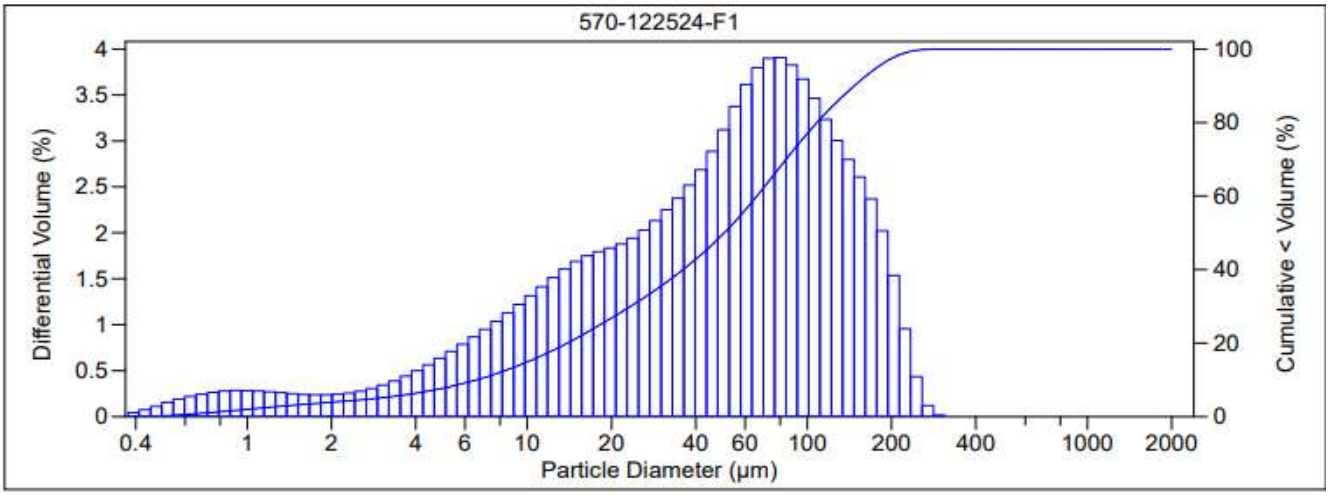
Haley & Aldrich, Inc.

Date Sampled:	01/03/23
Date Received:	01/04/23
Work Order No:	570-122524
Date Analyzed:	01/23/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
ILBMP0004_20230103		Very Fine Sand	0.064

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.27	14.80	27.18	51.49	6.26	57.75



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

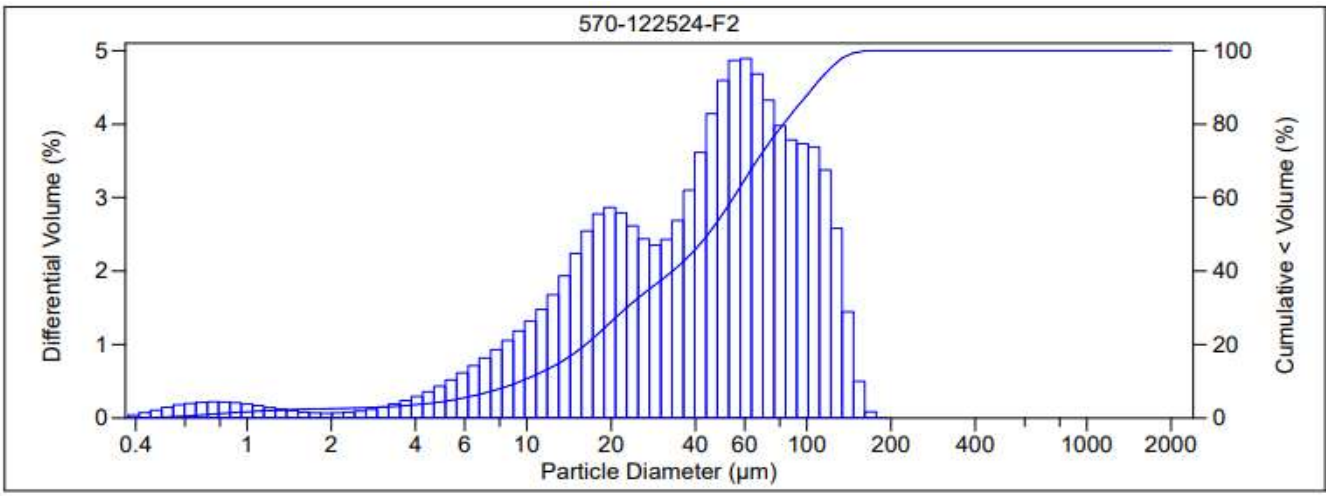
Haley & Aldrich, Inc.

Date Sampled:	01/03/23
Date Received:	01/04/23
Work Order No:	570-122524
Date Analyzed:	01/23/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
ILBMP0005_20230103		Silt	0.050

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	3.93	29.06	63.47	3.54	67.00



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

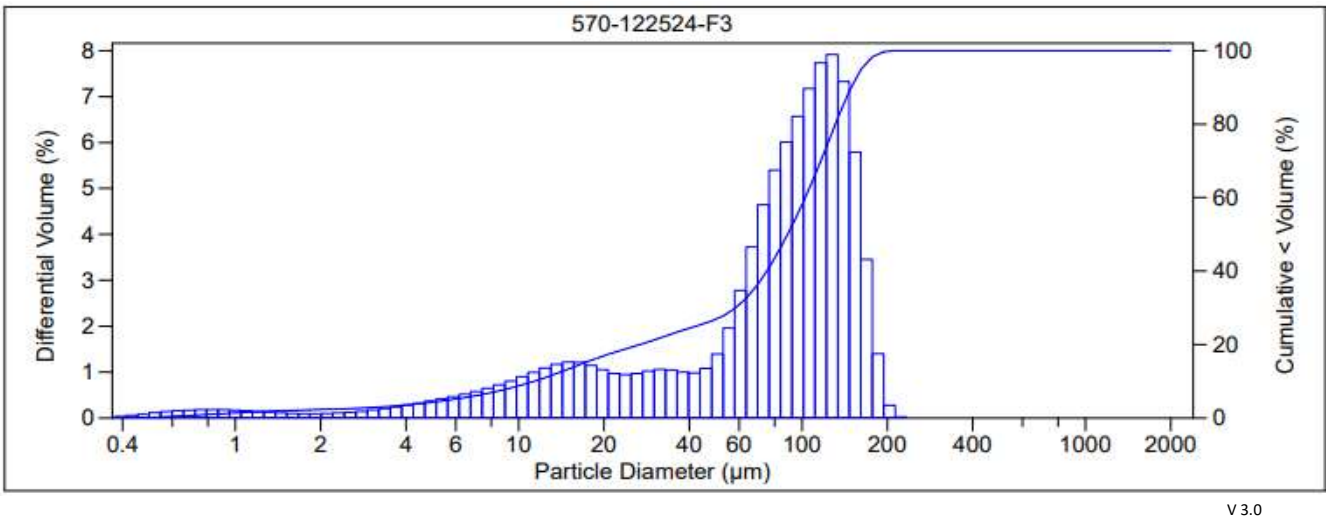
Haley & Aldrich, Inc.

Date Sampled:	01/03/23
Date Received:	01/04/23
Work Order No:	570-122524
Date Analyzed:	01/23/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
ILBMP0008_20230103		Very Fine Sand	0.085

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	24.08	43.81	28.64	3.47	32.11



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

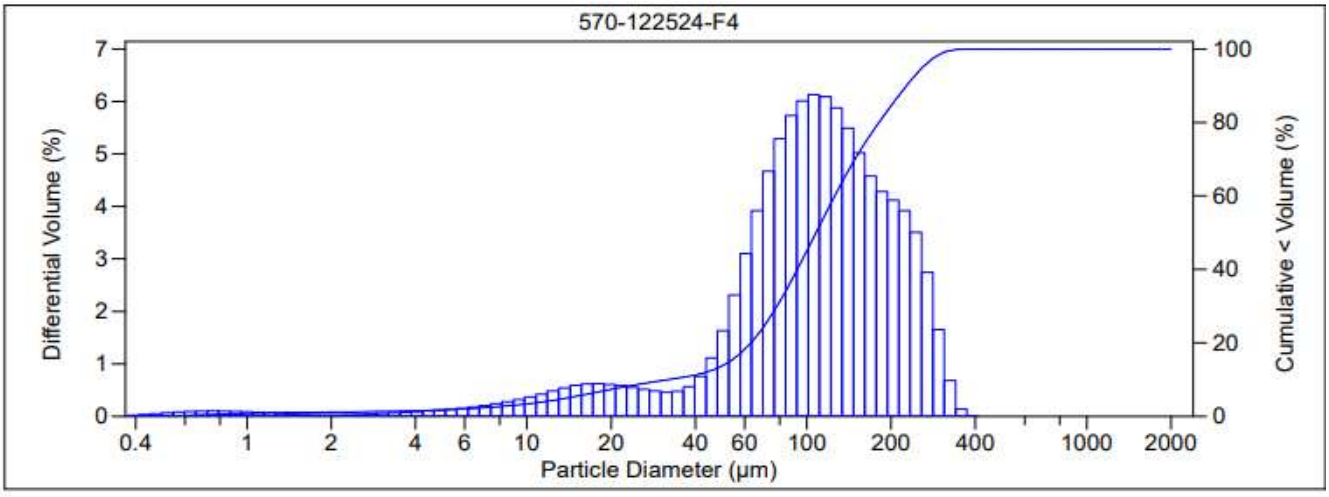
Haley & Aldrich, Inc.

Date Sampled:	01/03/23
Date Received:	01/04/23
Work Order No:	570-122524
Date Analyzed:	01/23/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
LPBMP0002_20230103		Very Fine Sand	0.121

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	6.30	34.17	39.90	18.13	1.50	19.63



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

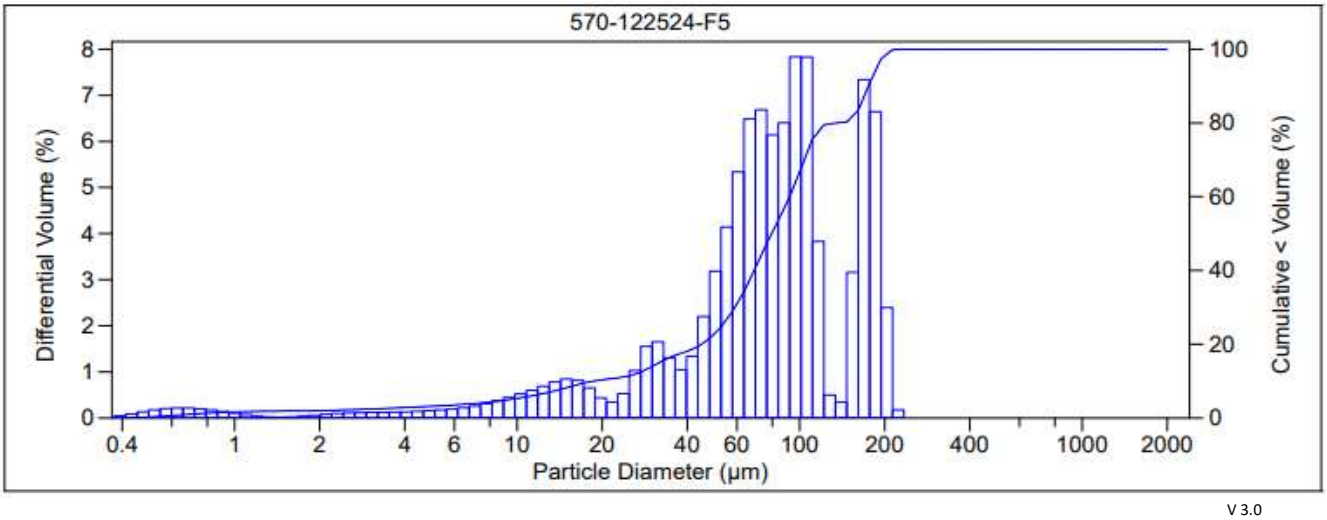
Haley & Aldrich, Inc.

Date Sampled:	01/03/23
Date Received:	01/04/23
Work Order No:	570-122524
Date Analyzed:	01/23/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
LPBMP0003_20230103		Very Fine Sand	0.088

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	20.43	46.21	30.57	2.80	33.36



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

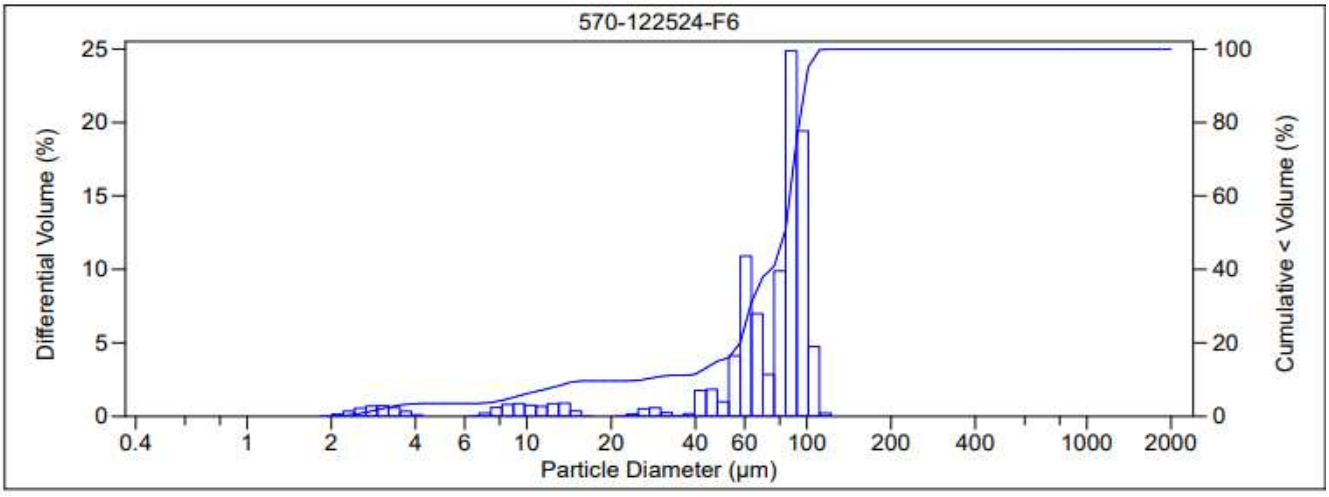
Haley & Aldrich, Inc.

Date Sampled:	01/03/23
Date Received:	01/04/23
Work Order No:	570-122524
Date Analyzed:	01/23/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
LBBMP0004_20230103		Very Fine Sand	0.073

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	70.77	25.81	3.42	29.23



QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-3

Geotechnical

Analysis Batch: 297942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-1	ILBMP0004_20230103	Total/NA	Water	D4464	
570-122524-2	ILBMP0005_20230103	Total/NA	Water	D4464	
570-122524-3	ILBMP0008_20230103	Total/NA	Water	D4464	
570-122524-4	LPBMP0002_20230103	Total/NA	Water	D4464	
570-122524-5	LPBMP0003_20230103	Total/NA	Water	D4464	
570-122524-6	LBBMP0004_20230103	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-3

Client Sample ID: ILBMP0004_20230103
Lab Sample ID: 570-122524-1
Date Collected: 01/03/23 07:30
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			297942	01/23/23 11:18	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: ILBMP0005_20230103
Lab Sample ID: 570-122524-2
Date Collected: 01/03/23 07:45
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			297942	01/23/23 11:29	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: ILBMP0008_20230103
Lab Sample ID: 570-122524-3
Date Collected: 01/03/23 07:15
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			297942	01/23/23 11:36	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: LPBMP0002_20230103
Lab Sample ID: 570-122524-4
Date Collected: 01/03/23 10:30
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			297942	01/23/23 11:45	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: LPBMP0003_20230103
Lab Sample ID: 570-122524-5
Date Collected: 01/03/23 10:00
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			297942	01/23/23 11:52	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: LBBMP0004_20230103
Lab Sample ID: 570-122524-6
Date Collected: 01/03/23 10:15
Matrix: Water
Date Received: 01/04/23 17:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			297942	01/23/23 12:02	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122524-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-3

Method	Method Description	Protocol	Laboratory
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4

Protocol References:

ASTM = ASTM International

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122524-1	ILBMP0004_20230103	Water	01/03/23 07:30	01/04/23 17:25
570-122524-2	ILBMP0005_20230103	Water	01/03/23 07:45	01/04/23 17:25
570-122524-3	ILBMP0008_20230103	Water	01/03/23 07:15	01/04/23 17:25
570-122524-4	LPBMP0002_20230103	Water	01/03/23 10:30	01/04/23 17:25
570-122524-5	LPBMP0003_20230103	Water	01/03/23 10:00	01/04/23 17:25
570-122524-6	LBBMP0004_20230103	Water	01/03/23 10:15	01/04/23 17:25

122524

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue, Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8 Cd Cu Pb (Total Recoverable)	Method 200.8 Cd, Cu Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)						
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly						
A1BMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X						
A1BMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0010_			C	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0011_			C	WM	8	Y	N	X	X	X	X	X	X	X						
EBMP0002_			G	WM	8	Y	Y	X	X	X	X	X	X	X						
EBMP0004_ 20230103	01/03/23	0730	G	WM	8	Y	N	X	X	X	X	X	X	X						
EBMP0005_ 20230103		0745	G	WM	8	Y	N	X	X	X	X	X	X	X						
EBMP0008_ 20230103		0715	G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0002_ 20230103		1030	G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0003_ 20230103		1000	G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0004_ 20230103		1015	G	WM	8	Y	Y	X	X	X	X	X	X	X						
LXBMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X						
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X								
EPNDSW04_			G	WM	8	Y	N	X	X	X	X	X	X	X						
DUP01_ ~~20230103~~	~~01/03/23~~	~~1030~~	~~G~~	~~WM~~	~~8~~	~~Y~~	~~N~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~						
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X						
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1						

570-122524 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of rece pt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C) Obs'd. ____ Corr'd: ____ Therm ID No.: ____

Relinquished by	Company	Date/Time	Received by	Date/Time
	H&A	1-4-23 / 1055	EC	1/4/23 1055
	EC	1/4/23 1725		1/4/23 1725
			Received in Laboratory by:	Date/Time:

2.8/2.8 2.1/2.1 2.3/2.3 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1/24/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203288.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program California		Job #: 570-122524-1
Address: 5755 8th Street East,	Due Date Requested: 1/16/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
ILBMP0004_20230103 (570-122524-1)	1/3/23	07:30 Pacific		Water			X	X	2	
ILBMP0005_20230103 (570-122524-2)	1/3/23	07:45 Pacific		Water			X	X	2	
ILBMP0008_20230103 (570-122524-3)	1/3/23	07:15 Pacific		Water			X	X	2	
LPBMP0002_20230103 (570-122524-4)	1/3/23	10:30 Pacific		Water			X	X	2	
LPBMP0003_20230103 (570-122524-5)	1/3/23	10:00 Pacific		Water			X	X	2	
LBBMP0004_20230103 (570-122524-6)	1/3/23	10:15 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Esther Rodriguez	01/05/23 1318	EC			

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No
570-203288

Containers

Count	Container Type	Preservative
12	Mercury-LL Method 1631 Sample Kit	None

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122524-3

Login Number: 122524
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122524-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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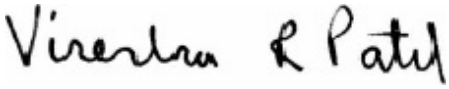
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-4

Qualifiers

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122524-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122524-4

Comments
No additional comments.

Receipt
The samples were received on 1/4/2023 5:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9º C, 2.1º C, 2.3º C and 2.8º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-4

Client Sample ID: ILBMP0004_20230103 — Lab Sample ID: 570-122524-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.012		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0037	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: ILBMP0005_20230103 — Lab Sample ID: 570-122524-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.018		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.014	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: ILBMP0008_20230103 — Lab Sample ID: 570-122524-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0047		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0034	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: LPBMP0002_20230103 — Lab Sample ID: 570-122524-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.012		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0098	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: LPBMP0003_20230103 — Lab Sample ID: 570-122524-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.014		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0099	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: LBBMP0004_20230103 — Lab Sample ID: 570-122524-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.012		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.010	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.012		0.00050	0.000079	ug/L			01/09/23 14:55	1

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.018		0.00050	0.000079	ug/L			01/09/23 15:04	1

Client Sample ID: ILBMP0008_20230103
Date Collected: 01/03/23 07:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0047		0.00050	0.000079	ug/L			01/09/23 15:41	1

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.012		0.00050	0.000079	ug/L			01/09/23 13:07	1

Client Sample ID: LPBMP0003_20230103
Date Collected: 01/03/23 10:00
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.014		0.00050	0.000079	ug/L			01/09/23 15:53	1

Client Sample ID: LBBMP0004_20230103
Date Collected: 01/03/23 10:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.012		0.00050	0.000079	ug/L			01/09/23 16:02	1

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0037	MB	0.00050	0.000079	ug/L			01/09/23 14:59	1

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.014	MB	0.00050	0.000079	ug/L			01/09/23 15:20	1

Client Sample ID: ILBMP0008_20230103
Date Collected: 01/03/23 07:15
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0034	MB	0.00050	0.000079	ug/L			01/09/23 15:45	1

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0098	MB	0.00050	0.000079	ug/L			01/09/23 15:49	1

Client Sample ID: LPBMP0003_20230103
Date Collected: 01/03/23 10:00
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0099	MB	0.00050	0.000079	ug/L			01/09/23 15:57	1

Client Sample ID: LBBMP0004_20230103
Date Collected: 01/03/23 10:15
Date Received: 01/04/23 17:25
Lab Sample ID: 570-122524-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.010	MB	0.00050	0.000079	ug/L			01/09/23 16:06	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-414910/14
Matrix: Water
Analysis Batch: 414910

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/09/23 13:16	1

Lab Sample ID: MB 580-414910/15
Matrix: Water
Analysis Batch: 414910

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/09/23 13:20	1

Lab Sample ID: MB 580-414910/16
Matrix: Water
Analysis Batch: 414910

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/09/23 13:24	1

Lab Sample ID: LCS 580-414910/17
Matrix: Water
Analysis Batch: 414910

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00494		ug/L		99	77 - 123		

Lab Sample ID: LCSD 580-414910/18
Matrix: Water
Analysis Batch: 414910

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00499		ug/L		100	77 - 123	1	24

Lab Sample ID: 570-122524-4 MS
Matrix: Water
Analysis Batch: 414910

Client Sample ID: LPBMP0002_20230103
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.012		0.0150	0.0301		ug/L		120	71 - 125		

Lab Sample ID: 570-122524-4 MSD
Matrix: Water
Analysis Batch: 414910

Client Sample ID: LPBMP0002_20230103
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.012		0.0150	0.0272		ug/L		101	71 - 125	10	24

Lab Sample ID: 580-121508-B-1 MS
Matrix: Water
Analysis Batch: 414910

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00032	J,DX	0.00500	0.00565		ug/L		106	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-121508-B-1 MSD
Matrix: Water
Analysis Batch: 414910

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00032	J,DX	0.00500	0.00576		ug/L		109	71 - 125	2	24

Lab Sample ID: MB 580-414717/1-A
Matrix: Water
Analysis Batch: 414910

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000112	J,DX	0.00050	0.000079	ug/L			01/09/23 14:43	1

Metals

Filtration Batch: 414717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-1	ILBMP0004_20230103	Dissolved	Water	Filtration	
570-122524-2	ILBMP0005_20230103	Dissolved	Water	Filtration	
570-122524-3	ILBMP0008_20230103	Dissolved	Water	Filtration	
570-122524-4	LPBMP0002_20230103	Dissolved	Water	Filtration	
570-122524-5	LPBMP0003_20230103	Dissolved	Water	Filtration	
570-122524-6	LBBMP0004_20230103	Dissolved	Water	Filtration	
MB 580-414717/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 414910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122524-1	ILBMP0004_20230103	Dissolved	Water	1631E	414717
570-122524-1	ILBMP0004_20230103	Total/NA	Water	1631E	
570-122524-2	ILBMP0005_20230103	Dissolved	Water	1631E	414717
570-122524-2	ILBMP0005_20230103	Total/NA	Water	1631E	
570-122524-3	ILBMP0008_20230103	Dissolved	Water	1631E	414717
570-122524-3	ILBMP0008_20230103	Total/NA	Water	1631E	
570-122524-4	LPBMP0002_20230103	Dissolved	Water	1631E	414717
570-122524-4	LPBMP0002_20230103	Total/NA	Water	1631E	
570-122524-5	LPBMP0003_20230103	Dissolved	Water	1631E	414717
570-122524-5	LPBMP0003_20230103	Total/NA	Water	1631E	
570-122524-6	LBBMP0004_20230103	Dissolved	Water	1631E	414717
570-122524-6	LBBMP0004_20230103	Total/NA	Water	1631E	
MB 580-414717/1-A	Method Blank	Dissolved	Water	1631E	414717
MB 580-414910/14	Method Blank	Total/NA	Water	1631E	
MB 580-414910/15	Method Blank	Total/NA	Water	1631E	
MB 580-414910/16	Method Blank	Total/NA	Water	1631E	
LCS 580-414910/17	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-414910/18	Lab Control Sample Dup	Total/NA	Water	1631E	
570-122524-4 MS	LPBMP0002_20230103	Total/NA	Water	1631E	
570-122524-4 MSD	LPBMP0002_20230103	Total/NA	Water	1631E	
580-121508-B-1 MS	Matrix Spike	Total/NA	Water	1631E	
580-121508-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-4

Client Sample ID: ILBMP0004_20230103
Date Collected: 01/03/23 07:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414717	01/06/23 11:49	DRM	EET SEA
Dissolved	Analysis	1631E		1			414910	01/09/23 14:59	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			414910	01/09/23 14:55	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: ILBMP0005_20230103
Date Collected: 01/03/23 07:45
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414717	01/06/23 11:49	DRM	EET SEA
Dissolved	Analysis	1631E		1			414910	01/09/23 15:20	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			414910	01/09/23 15:04	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: ILBMP0008_20230103
Date Collected: 01/03/23 07:15
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414717	01/06/23 11:49	DRM	EET SEA
Dissolved	Analysis	1631E		1			414910	01/09/23 15:45	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			414910	01/09/23 15:41	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: LPBMP0002_20230103
Date Collected: 01/03/23 10:30
Date Received: 01/04/23 17:25

Lab Sample ID: 570-122524-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414717	01/06/23 11:49	DRM	EET SEA
Dissolved	Analysis	1631E		1			414910	01/09/23 15:49	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			414910	01/09/23 13:07	COW	EET SEA
	Instrument ID: 2600-4									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-4

Client Sample ID: LPBMP0003_20230103

Lab Sample ID: 570-122524-5

Date Collected: 01/03/23 10:00
Date Received: 01/04/23 17:25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414717	01/06/23 11:49	DRM	EET SEA
Dissolved	Analysis	1631E		1			414910	01/09/23 15:57	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			414910	01/09/23 15:53	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: LBBMP0004_20230103

Lab Sample ID: 570-122524-6

Date Collected: 01/03/23 10:15
Date Received: 01/04/23 17:25

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414717	01/06/23 11:49	DRM	EET SEA
Dissolved	Analysis	1631E		1			414910	01/09/23 16:06	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			414910	01/09/23 16:02	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122524-4
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-4

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122524-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122524-1	ILBMP0004_20230103	Water	01/03/23 07:30	01/04/23 17:25
570-122524-2	ILBMP0005_20230103	Water	01/03/23 07:45	01/04/23 17:25
570-122524-3	ILBMP0008_20230103	Water	01/03/23 07:15	01/04/23 17:25
570-122524-4	LPBMP0002_20230103	Water	01/03/23 10:30	01/04/23 17:25
570-122524-5	LPBMP0003_20230103	Water	01/03/23 10:00	01/04/23 17:25
570-122524-6	LBBMP0004_20230103	Water	01/03/23 10:15	01/04/23 17:25

122524

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue, Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

ectAmerica services under CoC hall be performed in accordance h t l e T&Cs w th Blanket Service Agreement # 20 22 stAmer ca by and between Haley & Aldrich c., sub idiaries and affiliates and TestAmerica Laboratories c.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8 Cd Cu Pb (Total Recoverable)	Method 200.8 Cd, Cu Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)						
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly						
A1BMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X						
A1BMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0010_			C	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0011_			C	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0002_			G	WM	8	Y	Y	X	X	X	X	X	X	X						
LBMP0004_ 20230103	01/03/23	0730	G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0005_ 20230103		0745	G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0008_ 20230103		0715	G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0002_ 20230103		1030	G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0003_ 20230103		1000	G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0004_ 20230103		1015	G	WM	8	Y	Y	X	X	X	X	X	X	X						
LXBMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X						
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X						
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X								
EPNDSW04_			G	WM	8	Y	N	X	X	X	X	X	X	X							
DUP01_ ~~20230103~~	~~01/03/23~~	~~1030~~	~~G~~	~~WM~~	~~8~~	~~Y~~	~~N~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~						
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X						

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other

								4	1	2	1	1	1	1						

570-122524 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of rece pt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C) Obs'd.____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company: H&A	Date/Time: 1-4-23 / 1055	Received by: EC	Date/Time: 1/4/23 1055
Relinquished by:	Company: EC	Date/Time: 1/4/23 1725	Received by:	Date/Time: 1/4/23 1725
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.8/2.8 2.1/2.1 2.3/2.3 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1/21/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203288.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program California		Job #: 570-122524-1
Address: 5755 8th Street East,	Due Date Requested: 1/16/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
ILBMP0004_20230103 (570-122524-1)	1/3/23	07:30 Pacific		Water			X	X	2	
ILBMP0005_20230103 (570-122524-2)	1/3/23	07:45 Pacific		Water			X	X	2	
ILBMP0008_20230103 (570-122524-3)	1/3/23	07:15 Pacific		Water			X	X	2	
LPBMP0002_20230103 (570-122524-4)	1/3/23	10:30 Pacific		Water			X	X	2	
LPBMP0003_20230103 (570-122524-5)	1/3/23	10:00 Pacific		Water			X	X	2	
LBBMP0004_20230103 (570-122524-6)	1/3/23	10:15 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	01/05/23 1318	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No
570-203288

Containers

Count	Container Type	Preservative
12	Mercury-LL Method 1631 Sample Kit	None

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122524-4

Login Number: 122524
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122524-4

Login Number: 122524
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/06/23 12:42 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/8/2023 8:36:21 AM Revision 1

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122687-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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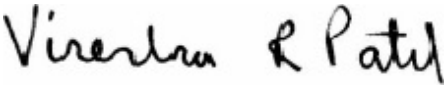
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
EY	Result exceeds normal dynamic range; reported as a min. est.
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

Metals

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
BU	Sample was prepped beyond the specified holding time
IB	CCV recovery above limit; analyte not detected
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122687-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122687-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 1/18/2023. The report (revision 1) is being revised due to: The metals reporting was adjusted to report all elements by EPA 200.8..

Receipt
The samples were received on 1/5/2023 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.8º C, 1.9º C, 2.8º C and 2.9º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following sample was received with insufficient preservation at a pH of >2 SU: EPBBC_20230105 (570-122687-1). 570-122687-U-1. The sample was preserved to the appropriate pH in the laboratory.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-294434. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-294045 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Sulfate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Fluoride and Sulfate for analytical batch 570-294045 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-294064 and analytical batch 570-294216 were outside control limits for Barium and Antimony. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 200.8: The method blank for preparation batch 570-294131 and analytical batch 570-294380 contained Iron and Selenium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-294064 and analytical batch 570-294216 were outside control limits for Zinc. Sample matrix interference is suspected because the associated laboratory control

Job ID: 570-122687-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample (LCS) recovery was within acceptance limits.

Method 200.8: The continuing calibration verification (CCV) associated with batch 570-294197 recovered above the upper control limit for Aluminum. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: (CCV 570-294197/13) and (MB 570-294131/1-A).

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBBC_20230105 (570-122687-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPBBC_20230105 (570-122687-1), (570-122687-G-1 MS) and (570-122687-G-1 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-295105. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Client Sample ID: EPBBC_20230105 — Lab Sample ID: 570-122687-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.18	J,DX	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.17	J,DX	0.20	0.019	ug/L	1		218.6	Dissolved
Fluoride	0.24		0.10	0.046	mg/L	1		300.0	Total/NA
Nitrite as N	0.21		0.10	0.043	mg/L	1		300.0	Total/NA
Nitrate as N	3.3		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	29		1.0	0.24	mg/L	1		300.0	Total/NA
Boron	120	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	110	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Silver	0.29	J,DX	1.0	0.23	ug/L	1		200.8	Total Recoverable
Arsenic	4.9		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	210		1.0	0.17	ug/L	1		200.8	Total Recoverable
Beryllium	1.2		0.50	0.26	ug/L	1		200.8	Total Recoverable
Cadmium	0.86	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	28		2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	25		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	21000		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	570		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	26		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	27		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	0.63	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Selenium	2.3		2.0	0.52	ug/L	1		200.8	Total Recoverable
Thallium	0.38	J,DX	1.0	0.11	ug/L	1		200.8	Total Recoverable
Zinc	120		20	2.8	ug/L	1		200.8	Total Recoverable
Aluminum	19000		150	86	ug/L	10		200.8	Total Recoverable
Arsenic	1.5	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	22	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.52	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	3.3	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	180	BU MB	20	3.7	ug/L	1		200.8	Dissolved
Manganese	4.2	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.9	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Lead	0.25	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Antimony	0.48	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	0.94	J,DX BU MB	2.0	0.52	ug/L	1		200.8	Dissolved
Aluminum	200	BU	15	8.6	ug/L	1		200.8	Dissolved
Cr (III)	0.028	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Total Suspended Solids	570		10	8.3	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/09/23 19:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*60 - 140*		*01/09/23 19:35*	*1*
4-Bromofluorobenzene (Surr)	*87*		*60 - 140*		*01/09/23 19:35*	*1*
Dibromofluoromethane	*112*		*60 - 140*		*01/09/23 19:35*	*1*
Toluene-d8 (Surr)	*96*		*60 - 140*		*01/09/23 19:35*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		4.8	3.5	ug/L		01/12/23 05:32	01/12/23 20:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*67*		*28 - 127*	*01/12/23 05:32*	*01/12/23 20:16*	*1*
2-Fluorobiphenyl (Surr)	*45*		*31 - 120*	*01/12/23 05:32*	*01/12/23 20:16*	*1*
2-Fluorophenol (Surr)	*31*		*17 - 120*	*01/12/23 05:32*	*01/12/23 20:16*	*1*
Nitrobenzene-d5 (Surr)	*55*		*27 - 120*	*01/12/23 05:32*	*01/12/23 20:16*	*1*
Phenol-d6 (Surr)	*20*		*10 - 120*	*01/12/23 05:32*	*01/12/23 20:16*	*1*
p-Terphenyl-d14 (Surr)	*52*		*45 - 120*	*01/12/23 05:32*	*01/12/23 20:16*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.18	J,DX	0.20	0.019	ug/L			01/06/23 06:49	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.17	J,DX	0.20	0.019	ug/L			01/06/23 07:49	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.24		0.10	0.046	mg/L			01/06/23 07:40	1
Nitrite as N	0.21		0.10	0.043	mg/L			01/06/23 07:40	1
Nitrate as N	3.3		0.10	0.020	mg/L			01/06/23 07:40	1
Sulfate	29		1.0	0.24	mg/L			01/06/23 07:40	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/06/23 20:04	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	120	J,DX	500	3.5	ug/L		01/06/23 05:59	01/06/23 14:46	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	110	J,DX BU	500	3.5	ug/L			01/06/23 16:10	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.29	J,DX	1.0	0.23	ug/L		01/06/23 07:16	01/06/23 13:56	1
Arsenic	4.9		1.0	0.16	ug/L		01/06/23 07:16	01/06/23 13:56	1
Barium	210		1.0	0.17	ug/L		01/06/23 07:16	01/06/23 13:56	1
Beryllium	1.2		0.50	0.26	ug/L		01/06/23 07:16	01/06/23 13:56	1
Cadmium	0.86	J,DX	1.0	0.13	ug/L		01/06/23 07:16	01/06/23 13:56	1
Chromium	28		2.0	0.14	ug/L		01/06/23 07:16	01/06/23 13:56	1
Copper	25		2.0	0.32	ug/L		01/06/23 07:16	01/06/23 13:56	1
Iron	21000		20	3.7	ug/L		01/06/23 07:16	01/06/23 13:56	1
Manganese	570		1.0	0.41	ug/L		01/06/23 07:16	01/06/23 13:56	1
Nickel	26		2.0	0.17	ug/L		01/06/23 07:16	01/06/23 13:56	1
Lead	27		1.0	0.12	ug/L		01/06/23 07:16	01/06/23 13:56	1
Antimony	0.63	J,DX	2.0	0.36	ug/L		01/06/23 07:16	01/06/23 13:56	1
Selenium	2.3		2.0	0.52	ug/L		01/06/23 07:16	01/06/23 13:56	1
Thallium	0.38	J,DX	1.0	0.11	ug/L		01/06/23 07:16	01/06/23 13:56	1
Zinc	120		20	2.8	ug/L		01/06/23 07:16	01/06/23 13:56	1
Aluminum	19000		150	86	ug/L		02/07/23 06:36	02/07/23 10:51	10

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/06/23 18:01	1
Arsenic	**1.5**	**BU**	1.0	0.16	ug/L			01/06/23 18:01	1
Barium	**22**	**BU**	1.0	0.17	ug/L			01/06/23 18:01	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/06/23 18:01	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/06/23 18:01	1
Chromium	**0.52**	**J,DX BU**	2.0	0.14	ug/L			01/06/23 18:01	1
Copper	**3.3**	**BU**	2.0	0.32	ug/L			01/06/23 18:01	1
Iron	**180**	**BU MB**	20	3.7	ug/L			01/06/23 18:01	1
Manganese	**4.2**	**BU**	1.0	0.41	ug/L			01/06/23 18:01	1
Nickel	**1.9**	**J,DX BU**	2.0	0.17	ug/L			01/06/23 18:01	1
Lead	**0.25**	**J,DX BU**	1.0	0.12	ug/L			01/06/23 18:01	1
Antimony	**0.48**	**J,DX BU**	2.0	0.36	ug/L			01/06/23 18:01	1
Selenium	**0.94**	**J,DX BU MB**	2.0	0.52	ug/L			01/06/23 18:01	1
Thallium	ND	BU	1.0	0.11	ug/L			01/06/23 18:01	1
Zinc	ND	BU	20	2.8	ug/L			01/06/23 18:01	1
Aluminum	**200**	**BU**	15	8.6	ug/L			01/06/23 18:01	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

General Chemistry

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	**0.028**	**J,DX**	0.050	0.0030	mg/L			01/16/23 11:45	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/11/23 14:55	1
Total Suspended Solids (SM 2540D)	**570**		10	8.3	mg/L			01/11/23 10:25	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-122687-1	EPBBC_20230105	105	87	112	96
LCS 570-294434/5	Lab Control Sample	93	99	97	97
LCSD 570-294434/6	Lab Control Sample Dup	101	101	97	97
MB 570-294434/10	Method Blank	99	88	106	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-122687-1	EPBBC_20230105	67	45	31	55	20	52
LCS 570-295105/2-A	Lab Control Sample	93	83	53	79	37	95
LCSD 570-295105/3-A	Lab Control Sample Dup	90	81	57	79	38	92
MB 570-295105/1-A	Method Blank	73	58	36	71	24	81

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-294434/10
Matrix: Water
Analysis Batch: 294434

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/09/23 12:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*60 - 140*		*01/09/23 12:55*	*1*
4-Bromofluorobenzene (Surr)	*88*		*60 - 140*		*01/09/23 12:55*	*1*
Dibromofluoromethane	*106*		*60 - 140*		*01/09/23 12:55*	*1*
Toluene-d8 (Surr)	*97*		*60 - 140*		*01/09/23 12:55*	*1*

Lab Sample ID: LCS 570-294434/5
Matrix: Water
Analysis Batch: 294434

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	20.4		ug/L		102	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*93*		*60 - 140*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*
Dibromofluoromethane	*97*		*60 - 140*
Toluene-d8 (Surr)	*97*		*60 - 140*

Lab Sample ID: LCSD 570-294434/6
Matrix: Water
Analysis Batch: 294434

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene			20.0	20.9		ug/L		104	65 - 135	2	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*60 - 140*
4-Bromofluorobenzene (Surr)	*101*		*60 - 140*
Dibromofluoromethane	*97*		*60 - 140*
Toluene-d8 (Surr)	*97*		*60 - 140*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-295105/1-A
Matrix: Water
Analysis Batch: 295345

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295105

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/11/23 12:19	01/12/23 15:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*73*		*28 - 127*	*01/11/23 12:19*	*01/12/23 15:17*	*1*
2-Fluorobiphenyl (Surr)	*58*		*31 - 120*	*01/11/23 12:19*	*01/12/23 15:17*	*1*
2-Fluorophenol (Surr)	*36*		*17 - 120*	*01/11/23 12:19*	*01/12/23 15:17*	*1*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-295105/1-A
Matrix: Water
Analysis Batch: 295345

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295105

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	71		27 - 120	01/11/23 12:19	01/12/23 15:17	1
Phenol-d6 (Surr)	24		10 - 120	01/11/23 12:19	01/12/23 15:17	1
p-Terphenyl-d14 (Surr)	81		45 - 120	01/11/23 12:19	01/12/23 15:17	1

Lab Sample ID: LCS 570-295105/2-A
Matrix: Water
Analysis Batch: 295345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295105

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bis(2-ethylhexyl) phthalate			20.0	18.5		ug/L		92	29 - 137		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	93		28 - 127
2-Fluorobiphenyl (Surr)	83		31 - 120
2-Fluorophenol (Surr)	53		17 - 120
Nitrobenzene-d5 (Surr)	79		27 - 120
Phenol-d6 (Surr)	37		10 - 120
p-Terphenyl-d14 (Surr)	95		45 - 120

Lab Sample ID: LCSD 570-295105/3-A
Matrix: Water
Analysis Batch: 295345

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295105

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate			20.0	18.0		ug/L		90	29 - 137	3	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	90		28 - 127
2-Fluorobiphenyl (Surr)	81		31 - 120
2-Fluorophenol (Surr)	57		17 - 120
Nitrobenzene-d5 (Surr)	79		27 - 120
Phenol-d6 (Surr)	38		10 - 120
p-Terphenyl-d14 (Surr)	92		45 - 120

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-294039/11
Matrix: Water
Analysis Batch: 294039

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/06/23 06:20	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: LCS 570-294039/12
Matrix: Water
Analysis Batch: 294039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.2		ug/L		100	95 - 107		

Lab Sample ID: LCSD 570-294039/13
Matrix: Water
Analysis Batch: 294039

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.3		ug/L		100	95 - 107	0	20

Lab Sample ID: 570-122687-1 MS
Matrix: Water
Analysis Batch: 294039

Client Sample ID: EPBBC_20230105
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	0.18	J,DX	50.1	52.3		ug/L		104	85 - 121		

Lab Sample ID: 570-122687-1 MSD
Matrix: Water
Analysis Batch: 294039

Client Sample ID: EPBBC_20230105
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.18	J,DX	50.1	51.2		ug/L		102	85 - 121	2	25

Lab Sample ID: MB 570-294038/1-A
Matrix: Water
Analysis Batch: 294039

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/06/23 07:19	1

Lab Sample ID: LCS 570-294038/2-A
Matrix: Water
Analysis Batch: 294039

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.4		ug/L		101	95 - 107		

Lab Sample ID: LCSD 570-294038/3-A
Matrix: Water
Analysis Batch: 294039

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.3		ug/L		100	95 - 107	0	20

Lab Sample ID: 570-122687-1 MS
Matrix: Water
Analysis Batch: 294039

Client Sample ID: EPBBC_20230105
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	0.17	J,DX	50.1	52.8		ug/L		105	85 - 121		

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: 570-122687-1 MSD
Matrix: Water
Analysis Batch: 294039

Client Sample ID: EPBBC_20230105
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.17	J,DX	50.1	52.9		ug/L		105	85 - 121	0	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-294044/5
Matrix: Water
Analysis Batch: 294044

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/06/23 06:50	1
Nitrate as N	ND		0.10	0.020	mg/L			01/06/23 06:50	1

Lab Sample ID: LCS 570-294044/6
Matrix: Water
Analysis Batch: 294044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.61		mg/L		105	90 - 110
Nitrate as N	5.00	4.89		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-294044/7
Matrix: Water
Analysis Batch: 294044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.61		mg/L		104	90 - 110	0	15
Nitrate as N	5.00	4.90		mg/L		98	90 - 110	0	15

Lab Sample ID: 570-122829-A-3 MS
Matrix: Water
Analysis Batch: 294044

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	1.1		2.50	3.53		mg/L		99	80 - 120
Nitrate as N	2.4		5.00	7.61		mg/L		105	80 - 120

Lab Sample ID: 570-122829-A-3 MSD
Matrix: Water
Analysis Batch: 294044

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	1.1		2.50	3.49		mg/L		98	80 - 120	1	20
Nitrate as N	2.4		5.00	7.57		mg/L		104	80 - 120	0	20

Lab Sample ID: MB 570-294045/5
Matrix: Water
Analysis Batch: 294045

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			01/06/23 06:50	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-294045/5
Matrix: Water
Analysis Batch: 294045

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			01/06/23 06:50	1

Lab Sample ID: LCS 570-294045/6
Matrix: Water
Analysis Batch: 294045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride			2.50	2.76		mg/L		110	90 - 110		
Sulfate			50.0	48.7		mg/L		97	90 - 110		

Lab Sample ID: LCSD 570-294045/7
Matrix: Water
Analysis Batch: 294045

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride			2.50	2.74		mg/L		109	90 - 110	1	15
Sulfate			50.0	48.8		mg/L		98	90 - 110	0	15

Lab Sample ID: 570-122829-A-3 MS
Matrix: Water
Analysis Batch: 294045

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	0.16		2.50	3.22	LM	mg/L		123	80 - 120		
Sulfate	92		50.0	153	EY LM	mg/L		123	80 - 120		

Lab Sample ID: 570-122829-A-3 MSD
Matrix: Water
Analysis Batch: 294045

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.16		2.50	3.28	LM	mg/L		125	80 - 120	2	20
Sulfate	92		50.0	153	EY LM	mg/L		123	80 - 120	0	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-294120/7
Matrix: Water
Analysis Batch: 294120

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/06/23 15:12	1

Lab Sample ID: LCS 570-294120/8
Matrix: Water
Analysis Batch: 294120

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	23.1		ug/L		92	85 - 115		

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCSD 570-294120/9
Matrix: Water
Analysis Batch: 294120

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	22.9		ug/L		92	85 - 115	0	15

Lab Sample ID: 570-122420-T-1 MS
Matrix: Water
Analysis Batch: 294120

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	ND		50.0	46.1		ug/L		92	80 - 120

Lab Sample ID: 570-122420-T-1 MSD
Matrix: Water
Analysis Batch: 294120

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	ND		50.0	47.0		ug/L		94	80 - 120	2	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-294049/1-A
Matrix: Water
Analysis Batch: 293955

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 294049

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		01/06/23 05:59	01/06/23 14:38	1

Lab Sample ID: LCS 570-294049/2-A
Matrix: Water
Analysis Batch: 293955

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 294049

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron			500	475	J,DX	ug/L		95	85 - 115

Lab Sample ID: LCSD 570-294049/3-A
Matrix: Water
Analysis Batch: 293955

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 294049

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	473	J,DX	ug/L		95	85 - 115	0	20

Lab Sample ID: 570-122687-1 MS
Matrix: Water
Analysis Batch: 293955

Client Sample ID: EPBBC_20230105
Prep Type: Total Recoverable
Prep Batch: 294049

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	120	J,DX	500	611		ug/L		99	80 - 120

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 570-122687-1 MSD
Matrix: Water
Analysis Batch: 293955

Client Sample ID: EPBBC_20230105
Prep Type: Total Recoverable
Prep Batch: 294049

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	120	J,DX	500	607		ug/L		98	80 - 120	1	20

Lab Sample ID: MB 570-294177/1-A
Matrix: Water
Analysis Batch: 294246

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			01/06/23 16:03	1

Lab Sample ID: LCS 570-294177/2-A
Matrix: Water
Analysis Batch: 294246

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	436	J,DX	ug/L		87	85 - 115

Lab Sample ID: LCSD 570-294177/3-A
Matrix: Water
Analysis Batch: 294246

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	436	J,DX	ug/L		87	85 - 115	0	20

Lab Sample ID: 570-122687-1 MS
Matrix: Water
Analysis Batch: 294246

Client Sample ID: EPBBC_20230105
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	110	J,DX BU	500	551		ug/L		89	80 - 120

Lab Sample ID: 570-122687-1 MSD
Matrix: Water
Analysis Batch: 294246

Client Sample ID: EPBBC_20230105
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	110	J,DX BU	500	547		ug/L		88	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-294064/1-A
Matrix: Water
Analysis Batch: 294216

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 294064

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/06/23 07:16	01/06/23 13:47	1
Arsenic	ND		1.0	0.16	ug/L		01/06/23 07:16	01/06/23 13:47	1
Barium	ND		1.0	0.17	ug/L		01/06/23 07:16	01/06/23 13:47	1
Beryllium	ND		0.50	0.26	ug/L		01/06/23 07:16	01/06/23 13:47	1
Cadmium	ND		1.0	0.13	ug/L		01/06/23 07:16	01/06/23 13:47	1
Chromium	ND		2.0	0.14	ug/L		01/06/23 07:16	01/06/23 13:47	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-294064/1-A
Matrix: Water
Analysis Batch: 294216

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 294064

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		2.0	0.32	ug/L		01/06/23 07:16	01/06/23 13:47	1
Iron	ND		20	3.7	ug/L		01/06/23 07:16	01/06/23 13:47	1
Manganese	ND		1.0	0.41	ug/L		01/06/23 07:16	01/06/23 13:47	1
Nickel	ND		2.0	0.17	ug/L		01/06/23 07:16	01/06/23 13:47	1
Lead	ND		1.0	0.12	ug/L		01/06/23 07:16	01/06/23 13:47	1
Antimony	ND		2.0	0.36	ug/L		01/06/23 07:16	01/06/23 13:47	1
Selenium	ND		2.0	0.52	ug/L		01/06/23 07:16	01/06/23 13:47	1
Thallium	ND		1.0	0.11	ug/L		01/06/23 07:16	01/06/23 13:47	1
Zinc	ND		20	2.8	ug/L		01/06/23 07:16	01/06/23 13:47	1
Aluminum	ND		15	8.6	ug/L		01/06/23 07:16	01/06/23 13:47	1

Lab Sample ID: LCS 570-294064/2-A
Matrix: Water
Analysis Batch: 294216

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 294064

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	80.0	75.7		ug/L		95	85 - 115
Arsenic	80.0	82.9		ug/L		104	85 - 115
Barium	80.0	83.8		ug/L		105	85 - 115
Beryllium	80.0	85.4		ug/L		107	85 - 115
Cadmium	80.0	82.7		ug/L		103	85 - 115
Chromium	80.0	83.8		ug/L		105	85 - 115
Copper	80.0	82.4		ug/L		103	85 - 115
Iron	800	878		ug/L		110	85 - 115
Manganese	80.0	86.3		ug/L		108	85 - 115
Nickel	80.0	82.8		ug/L		104	85 - 115
Lead	80.0	82.8		ug/L		104	85 - 115
Antimony	80.0	91.1		ug/L		114	85 - 115
Selenium	80.0	80.8		ug/L		101	85 - 115
Thallium	80.0	82.2		ug/L		103	85 - 115
Zinc	80.0	83.0		ug/L		104	85 - 115
Aluminum	80.0	87.8		ug/L		110	85 - 115

Lab Sample ID: LCSD 570-294064/3-A
Matrix: Water
Analysis Batch: 294216

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 294064

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	80.0	74.2		ug/L		93	85 - 115	2	20
Arsenic	80.0	81.2		ug/L		101	85 - 115	2	20
Barium	80.0	82.8		ug/L		103	85 - 115	1	20
Beryllium	80.0	85.9		ug/L		107	85 - 115	1	20
Cadmium	80.0	82.4		ug/L		103	85 - 115	0	20
Chromium	80.0	84.4		ug/L		105	85 - 115	1	20
Copper	80.0	83.5		ug/L		104	85 - 115	1	20
Iron	800	892		ug/L		111	85 - 115	2	20
Manganese	80.0	87.1		ug/L		109	85 - 115	1	20
Nickel	80.0	83.6		ug/L		104	85 - 115	1	20
Lead	80.0	84.2		ug/L		105	85 - 115	2	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-294064/3-A
Matrix: Water
Analysis Batch: 294216

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 294064

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony			80.0	90.8		ug/L		113	85 - 115	0	20
Selenium			80.0	84.1		ug/L		105	85 - 115	4	20
Thallium			80.0	83.7		ug/L		105	85 - 115	2	20
Zinc			80.0	81.2		ug/L		102	85 - 115	2	20
Aluminum			80.0	89.5		ug/L		112	85 - 115	2	20

Lab Sample ID: 570-122687-1 MS
Matrix: Water
Analysis Batch: 294216

Client Sample ID: EPBBC_20230105
Prep Type: Total Recoverable
Prep Batch: 294064

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	0.29	J,DX	80.0	74.1		ug/L		92	80 - 120
Arsenic	4.9		80.0	78.8		ug/L		92	80 - 120
Barium	210		80.0	313	LM	ug/L		124	80 - 120
Beryllium	1.2		80.0	80.6		ug/L		99	80 - 120
Cadmium	0.86	J,DX	80.0	81.6		ug/L		101	80 - 120
Chromium	28		80.0	116		ug/L		110	80 - 120
Copper	25		80.0	106		ug/L		102	80 - 120
Iron	21000		800	30700	BB	ug/L		1211	80 - 120
Manganese	570		80.0	688	BB	ug/L		150	80 - 120
Nickel	26		80.0	108		ug/L		102	80 - 120
Lead	27		80.0	111		ug/L		105	80 - 120
Antimony	0.63	J,DX	80.0	51.8	LN	ug/L		64	80 - 120
Selenium	2.3		80.0	66.1		ug/L		80	80 - 120
Thallium	0.38	J,DX	80.0	80.7		ug/L		100	80 - 120
Zinc	120		80.0	215		ug/L		117	80 - 120

Lab Sample ID: 570-122687-1 MSD
Matrix: Water
Analysis Batch: 294216

Client Sample ID: EPBBC_20230105
Prep Type: Total Recoverable
Prep Batch: 294064

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	0.29	J,DX	80.0	75.8		ug/L		94	80 - 120	2	20
Arsenic	4.9		80.0	80.8		ug/L		95	80 - 120	3	20
Barium	210		80.0	319	LM	ug/L		131	80 - 120	2	20
Beryllium	1.2		80.0	83.6		ug/L		103	80 - 120	4	20
Cadmium	0.86	J,DX	80.0	83.4		ug/L		103	80 - 120	2	20
Chromium	28		80.0	116		ug/L		111	80 - 120	1	20
Copper	25		80.0	107		ug/L		103	80 - 120	1	20
Iron	21000		800	31000	BB	ug/L		1243	80 - 120	1	20
Manganese	570		80.0	696	BB	ug/L		160	80 - 120	1	20
Nickel	26		80.0	110		ug/L		105	80 - 120	2	20
Lead	27		80.0	113		ug/L		106	80 - 120	1	20
Antimony	0.63	J,DX	80.0	52.8	LN	ug/L		65	80 - 120	2	20
Selenium	2.3		80.0	66.6		ug/L		80	80 - 120	1	20
Thallium	0.38	J,DX	80.0	82.0		ug/L		102	80 - 120	2	20
Zinc	120		80.0	221	LM	ug/L		125	80 - 120	3	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-301651/1-A
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		02/07/23 06:36	02/07/23 10:36	1

Lab Sample ID: LCS 570-301651/2-A
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	82.4		ug/L		103	85 - 115

Lab Sample ID: LCSD 570-301651/3-A
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	80.4		ug/L		100	85 - 115	2	20

Lab Sample ID: 570-126592-A-1-B MS
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	260		80.0	337		ug/L		95	80 - 120

Lab Sample ID: 570-126592-A-1-C MSD
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	260		80.0	342		ug/L		101	80 - 120	1	20

Lab Sample ID: MB 570-294131/1-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L			01/06/23 12:21	1
Arsenic	ND		1.0	0.16	ug/L			01/06/23 12:21	1
Barium	ND		1.0	0.17	ug/L			01/06/23 12:21	1
Beryllium	ND		0.50	0.26	ug/L			01/06/23 12:21	1
Cadmium	ND		1.0	0.13	ug/L			01/06/23 12:21	1
Chromium	ND		2.0	0.14	ug/L			01/06/23 12:21	1
Copper	ND		2.0	0.32	ug/L			01/06/23 12:21	1
Iron	4.18	J,DX	20	3.7	ug/L			01/06/23 12:21	1
Manganese	ND		1.0	0.41	ug/L			01/06/23 12:21	1
Nickel	ND		2.0	0.17	ug/L			01/06/23 12:21	1
Lead	ND		1.0	0.12	ug/L			01/06/23 12:21	1
Antimony	ND		2.0	0.36	ug/L			01/06/23 12:21	1
Selenium	0.623	J,DX	2.0	0.52	ug/L			01/06/23 12:21	1
Thallium	ND		1.0	0.11	ug/L			01/06/23 12:21	1
Zinc	ND		20	2.8	ug/L			01/06/23 12:21	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-294131/1-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	IB	15	8.6	ug/L			01/06/23 12:21	1

Lab Sample ID: LCS 570-294131/2-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	80.0	74.7		ug/L		93	85 - 115
Arsenic	80.0	73.6		ug/L		92	85 - 115
Barium	80.0	73.9		ug/L		92	85 - 115
Beryllium	80.0	74.8		ug/L		93	85 - 115
Cadmium	80.0	74.2		ug/L		93	85 - 115
Chromium	80.0	75.1		ug/L		94	85 - 115
Copper	80.0	73.8		ug/L		92	85 - 115
Iron	800	779		ug/L		97	85 - 115
Manganese	80.0	75.4		ug/L		94	85 - 115
Nickel	80.0	74.7		ug/L		93	85 - 115
Lead	80.0	75.1		ug/L		94	85 - 115
Antimony	80.0	76.6		ug/L		96	85 - 115
Selenium	80.0	69.8		ug/L		87	85 - 115
Thallium	80.0	74.4		ug/L		93	85 - 115
Zinc	80.0	73.4		ug/L		92	85 - 115
Aluminum	80.0	79.4		ug/L		99	85 - 115

Lab Sample ID: LCSD 570-294131/3-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	80.0	73.3		ug/L		92	85 - 115	2	20
Arsenic	80.0	72.9		ug/L		91	85 - 115	1	20
Barium	80.0	73.2		ug/L		92	85 - 115	1	20
Beryllium	80.0	73.8		ug/L		92	85 - 115	1	20
Cadmium	80.0	72.4		ug/L		91	85 - 115	2	20
Chromium	80.0	74.9		ug/L		94	85 - 115	0	20
Copper	80.0	74.0		ug/L		93	85 - 115	0	20
Iron	800	776		ug/L		97	85 - 115	0	20
Manganese	80.0	75.2		ug/L		94	85 - 115	0	20
Nickel	80.0	74.7		ug/L		93	85 - 115	0	20
Lead	80.0	73.0		ug/L		91	85 - 115	3	20
Antimony	80.0	75.6		ug/L		94	85 - 115	1	20
Selenium	80.0	73.4		ug/L		92	85 - 115	5	20
Thallium	80.0	72.7		ug/L		91	85 - 115	2	20
Zinc	80.0	72.1		ug/L		90	85 - 115	2	20
Aluminum	80.0	75.2		ug/L		94	85 - 115	5	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-295446/11
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/11/23 14:55	1

Lab Sample ID: LCS 570-295446/12
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	255		ug/L		102	90 - 110

Lab Sample ID: LCSD 570-295446/18
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	233		ug/L		93	90 - 110	9	20

Lab Sample ID: MRL 570-295446/10
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.11	J,DX	ug/L		82	50 - 150

Lab Sample ID: 570-122475-D-1 MS
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	8.7		250	226		ug/L		87	70 - 130

Lab Sample ID: 570-122475-D-1 MSD
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	8.7		250	266		ug/L		103	70 - 130	16	30

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-295059/1
Matrix: Water
Analysis Batch: 295059

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/11/23 10:25	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 570-295059/2
Matrix: Water
Analysis Batch: 295059

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	96.0		mg/L		96	77 - 116		

Lab Sample ID: LCSD 570-295059/3
Matrix: Water
Analysis Batch: 295059

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	94.0		mg/L		94	77 - 116	2	10

Lab Sample ID: 570-122686-C-3 DU
Matrix: Water
Analysis Batch: 295059

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	13			14.4		mg/L				10	10

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

GC/MS VOA

Analysis Batch: 294434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	624.1	
MB 570-294434/10	Method Blank	Total/NA	Water	624.1	
LCS 570-294434/5	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-294434/6	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 295105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	625	
MB 570-295105/1-A	Method Blank	Total/NA	Water	625	
LCS 570-295105/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-295105/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 295345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	625.1 SIM	295105
MB 570-295105/1-A	Method Blank	Total/NA	Water	625.1 SIM	295105
LCS 570-295105/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	295105
LCSD 570-295105/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	295105

HPLC/IC

Filtration Batch: 294038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	Filtration	
MB 570-294038/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-294038/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294038/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-122687-1 MS	EPBBC_20230105	Dissolved	Water	Filtration	
570-122687-1 MSD	EPBBC_20230105	Dissolved	Water	Filtration	

Analysis Batch: 294039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	218.6	294038
570-122687-1	EPBBC_20230105	Total/NA	Water	218.6	
MB 570-294038/1-A	Method Blank	Dissolved	Water	218.6	294038
MB 570-294039/11	Method Blank	Total/NA	Water	218.6	
LCS 570-294038/2-A	Lab Control Sample	Dissolved	Water	218.6	294038
LCS 570-294039/12	Lab Control Sample	Total/NA	Water	218.6	
LCSD 570-294038/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	294038
LCSD 570-294039/13	Lab Control Sample Dup	Total/NA	Water	218.6	
570-122687-1 MS	EPBBC_20230105	Dissolved	Water	218.6	294038
570-122687-1 MS	EPBBC_20230105	Total/NA	Water	218.6	
570-122687-1 MSD	EPBBC_20230105	Dissolved	Water	218.6	294038
570-122687-1 MSD	EPBBC_20230105	Total/NA	Water	218.6	

Analysis Batch: 294044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	300.0	
MB 570-294044/5	Method Blank	Total/NA	Water	300.0	
LCS 570-294044/6	Lab Control Sample	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 294044 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-294044/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-122829-A-3 MS	Matrix Spike	Total/NA	Water	300.0	
570-122829-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 294045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	300.0	
MB 570-294045/5	Method Blank	Total/NA	Water	300.0	
LCS 570-294045/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-294045/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-122829-A-3 MS	Matrix Spike	Total/NA	Water	300.0	
570-122829-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 294120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	314.0	
MB 570-294120/7	Method Blank	Total/NA	Water	314.0	
LCS 570-294120/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-294120/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-122420-T-1 MS	Matrix Spike	Total/NA	Water	314.0	
570-122420-T-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Metals

Analysis Batch: 293955

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total Recoverable	Water	200.7 Rev 4.4	294049
MB 570-294049/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	294049
LCS 570-294049/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	294049
LCSD 570-294049/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	294049
570-122687-1 MS	EPBBC_20230105	Total Recoverable	Water	200.7 Rev 4.4	294049
570-122687-1 MSD	EPBBC_20230105	Total Recoverable	Water	200.7 Rev 4.4	294049

Prep Batch: 294049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total Recoverable	Water	200.7	
MB 570-294049/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-294049/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-294049/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-122687-1 MS	EPBBC_20230105	Total Recoverable	Water	200.7	
570-122687-1 MSD	EPBBC_20230105	Total Recoverable	Water	200.7	

Prep Batch: 294064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total Recoverable	Water	200.8	
MB 570-294064/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-294064/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-294064/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-122687-1 MS	EPBBC_20230105	Total Recoverable	Water	200.8	
570-122687-1 MSD	EPBBC_20230105	Total Recoverable	Water	200.8	

Metals

Filtration Batch: 294131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	Filtration	
MB 570-294131/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-294131/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294131/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Filtration Batch: 294177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	Filtration	
MB 570-294177/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-294177/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294177/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-122687-1 MS	EPBBC_20230105	Dissolved	Water	Filtration	
570-122687-1 MSD	EPBBC_20230105	Dissolved	Water	Filtration	

Analysis Batch: 294197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-294131/1-A	Method Blank	Dissolved	Water	200.8	294131
LCS 570-294131/2-A	Lab Control Sample	Dissolved	Water	200.8	294131
LCSD 570-294131/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	294131

Analysis Batch: 294216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total Recoverable	Water	200.8	294064
MB 570-294064/1-A	Method Blank	Total Recoverable	Water	200.8	294064
LCS 570-294064/2-A	Lab Control Sample	Total Recoverable	Water	200.8	294064
LCSD 570-294064/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	294064
570-122687-1 MS	EPBBC_20230105	Total Recoverable	Water	200.8	294064
570-122687-1 MSD	EPBBC_20230105	Total Recoverable	Water	200.8	294064

Analysis Batch: 294246

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	200.7 Rev 4.4	294177
MB 570-294177/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	294177
LCS 570-294177/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	294177
LCSD 570-294177/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	294177
570-122687-1 MS	EPBBC_20230105	Dissolved	Water	200.7 Rev 4.4	294177
570-122687-1 MSD	EPBBC_20230105	Dissolved	Water	200.7 Rev 4.4	294177

Analysis Batch: 294380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	200.8	294131

Prep Batch: 301651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total Recoverable	Water	200.8	
MB 570-301651/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-301651/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-301651/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-126592-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	
570-126592-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Metals

Analysis Batch: 301811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total Recoverable	Water	200.8	301651
MB 570-301651/1-A	Method Blank	Total Recoverable	Water	200.8	301651
LCS 570-301651/2-A	Lab Control Sample	Total Recoverable	Water	200.8	301651
LCSD 570-301651/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	301651
570-126592-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	301651
570-126592-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	301651

General Chemistry

Analysis Batch: 295059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	SM 2540D	
MB 570-295059/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-295059/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-295059/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-122686-C-3 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 295446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	Kelada 01	
MB 570-295446/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-295446/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-295446/18	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-295446/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-122475-D-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-122475-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 296119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	218.6 CR3	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Client Sample ID: EPBBC_20230105

Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	5 mL	5 mL	294434	01/09/23 19:35	AJ4K	EET CAL 4
	Instrument ID: GCMSPP									
Total/NA	Prep	625			1031.6 mL	2 mL	295105	01/12/23 05:32	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	295345	01/12/23 20:16	ULLI	EET CAL 4
	Instrument ID: GCMSEEE									
Dissolved	Filtration	Filtration			100 mL	100 mL	294038	01/06/23 02:30	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	294039	01/06/23 07:49	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	218.6		1	4 mL	4 mL	294039	01/06/23 06:49	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	300.0		1	4 mL	4 mL	294044	01/06/23 07:40	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	300.0		1	4 mL	4 mL	294045	01/06/23 07:40	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	314.0		1	4 mL	4 mL	294120	01/06/23 20:04	PS	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	294177	01/06/23 12:37	ECX6	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			294246	01/06/23 16:10	P1R	EET CAL 4
	Instrument ID: ICP10									
Total Recoverable	Prep	200.7			50 mL	50 mL	294049	01/06/23 05:59	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			293955	01/06/23 14:46	P1R	EET CAL 4
	Instrument ID: ICP10									
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 18:01	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	294064	01/06/23 07:16	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294216	01/06/23 13:56	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	301651	02/07/23 06:36	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		10			301811	02/07/23 10:51	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			296119	01/16/23 11:45	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	295446	01/11/23 14:55	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	100 mL	1000 mL	295059	01/11/23 10:25	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122687-1	EPBBC_20230105	Water	01/05/23 10:25	01/05/23 16:00

122687

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-5-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: EC1	
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			
H&A P O #	☐ 1 day			

Add Al to Method 200.8 total and dissolved analysis. (KR 2/8/2023)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn; – (Total Dissolved)	Method 200.8: Ag As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL. only need to fill hal f of 500mL. Bottles that are sized up based on inventory availab lity only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBMC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBBC_20230105	1/5/2023	1025	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBCC_			G	W	2						x														
EPBL_ _			G	W	1									x											
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Data Access. Bill to Haley & Aldrich AP@haleyaldrich.com. Report, EDD, and Data Package and provide an EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.007 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No. | Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.

Relinquished by:	Company: H&A	Date/Time: 1-5-23 1310	Received by: EC	EC	Date/Time: 1/5/23 1310
Relinquished by:	Company: EC	Date/Time: 1/5/23 1600	Received by:	EC	Date/Time: 1/5/23 1600
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.9 2.8/2.8 2.9/2.9 4.8/1.8 SC11

SAP COC 2019/2020 VERSION 3

570-122687 Chain of Custody

122687

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-5-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5484	Carrier: ECI	1 of 1 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler: Adrian Mayorga
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn: – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL only need to fill het f 500mL Bottles that are sized up based on inventory availab lity only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBMC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBBC_20230105	1 5 2023	1025	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBCC_			G	W	2						x														
EPBL C_			G	W	1									x											
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to km ller@h lroyald ch com and post to ota Access Bill to Haley & Aldrich AP@haleyaldri com Report v Data Package nd provide ID Al d sso vod samp s re to be filtered ith 24 hou of receipt, even those placed on hold. Low l mits needed for Mercury (MD 0 0 7 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.		
Relinquished by:	Company: H A	Date/Time: 1-5-23 1310	Received by: EC	Date/Time: 1/5/23 1310
Relinquished by:	Company: EC	Date/Time: 1/5/23 1600	Received by:	Date/Time: 1/5/23 1600
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.9 2.8/2.8 2.9/2.9 4.8/1.8 SCII

SAP COC 2019/2020 VERSION 3

570-122687 Chain of Custody

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals BMP Performance

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the BMP Performance program starting from data collected October 1st, 2022.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122687-1

Login Number: 122687
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122687-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

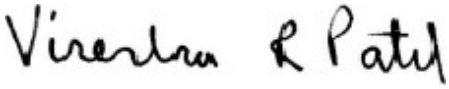
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-2

Job ID: 570-122687-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122687-2

Comments
No additional comments.

Receipt
The samples were received on 1/5/2023 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.8º C, 1.9º C, 2.8º C and 2.9º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV012923). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: EPBBC_20230105 (570-122687-1), (CCV 320-650284/1) and (MB 320-645751/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
Method 1613B: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: EPBBC_20230105 (570-122687-1).

Nominal volume required by method is 1 L.
preparation batch 320-645751

Method: 1613B_Sox_Sep_P
Matrix: Water

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-2

Client Sample ID: EPBBC_20230105

Lab Sample ID: 570-122687-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000015	J,DX	0.000055	0.00000040	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000018	J,DX q	0.000055	0.00000032	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000013	J,DX MB q	0.000055	0.00000038	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000044	J,DX MB	0.000055	0.00000037	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000084	J,DX MB q	0.000055	0.00000041	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000081	J,DX MB	0.000055	0.00000036	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000030	J,DX MB q	0.000055	0.00000038	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000035	J,DX MB	0.000055	0.00000039	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000046	J,DX MB q	0.000055	0.00000045	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000025	J,DX MB q	0.000055	0.00000038	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00030	MB	0.000055	0.0000015	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000056	MB	0.000055	0.00000048	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000067	J,DX MB	0.000055	0.00000059	ug/L	1		1613B	Total/NA
OCDD	0.0032	MB	0.00011	0.0000043	ug/L	1		1613B	Total/NA
OCDF	0.00019	MB	0.00011	0.00000062	ug/L	1		1613B	Total/NA
Total TCDF	0.0000025	J,DX MB	0.000011	0.00000039	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000015	J,DX	0.000055	0.00000040	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000092	J,DX MB q	0.000055	0.00000032	ug/L	1		1613B	Total/NA
Total HxCDD	0.000055	J,DX MB q	0.000055	0.00000036	ug/L	1		1613B	Total/NA
Total HxCDF	0.000052	J,DX MB q	0.000055	0.00000038	ug/L	1		1613B	Total/NA
Total HpCDD	0.00063	MB	0.000055	0.0000015	ug/L	1		1613B	Total/NA
Total HpCDF	0.00016	MB q	0.000055	0.00000048	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000041	ug/L		01/10/23 05:16	01/24/23 07:41	1
1,2,3,7,8-PeCDD	0.0000015	J,DX	0.000055	0.00000040	ug/L		01/10/23 05:16	01/24/23 07:41	1
1,2,3,7,8-PeCDF	0.0000018	J,DX q	0.000055	0.00000032	ug/L		01/10/23 05:16	01/24/23 07:41	1
2,3,4,7,8-PeCDF	0.0000013	J,DX MB q	0.000055	0.00000038	ug/L		01/10/23 05:16	01/24/23 07:41	1
1,2,3,4,7,8-HxCDD	0.0000044	J,DX MB	0.000055	0.00000037	ug/L		01/10/23 05:16	01/24/23 07:41	1
1,2,3,6,7,8-HxCDD	0.0000084	J,DX MB q	0.000055	0.00000041	ug/L		01/10/23 05:16	01/24/23 07:41	1
1,2,3,7,8,9-HxCDD	0.0000081	J,DX MB	0.000055	0.00000036	ug/L		01/10/23 05:16	01/24/23 07:41	1
1,2,3,4,7,8-HxCDF	0.0000030	J,DX MB q	0.000055	0.00000038	ug/L		01/10/23 05:16	01/24/23 07:41	1
1,2,3,6,7,8-HxCDF	0.0000035	J,DX MB	0.000055	0.00000039	ug/L		01/10/23 05:16	01/24/23 07:41	1
1,2,3,7,8,9-HxCDF	0.0000046	J,DX MB q	0.000055	0.00000045	ug/L		01/10/23 05:16	01/24/23 07:41	1
2,3,4,6,7,8-HxCDF	0.0000025	J,DX MB q	0.000055	0.00000038	ug/L		01/10/23 05:16	01/24/23 07:41	1
1,2,3,4,6,7,8-HpCDD	0.00030	MB	0.000055	0.0000015	ug/L		01/10/23 05:16	01/24/23 07:41	1
1,2,3,4,6,7,8-HpCDF	0.000056	MB	0.000055	0.00000048	ug/L		01/10/23 05:16	01/24/23 07:41	1
1,2,3,4,7,8,9-HpCDF	0.0000067	J,DX MB	0.000055	0.00000059	ug/L		01/10/23 05:16	01/24/23 07:41	1
OCDD	0.0032	MB	0.00011	0.0000043	ug/L		01/10/23 05:16	01/24/23 07:41	1
OCDF	0.00019	MB	0.00011	0.00000062	ug/L		01/10/23 05:16	01/24/23 07:41	1
Total TCDD	ND		0.000011	0.00000041	ug/L		01/10/23 05:16	01/24/23 07:41	1
Total TCDF	0.0000025	J,DX MB	0.000011	0.00000039	ug/L		01/10/23 05:16	01/24/23 07:41	1
Total PeCDD	0.0000015	J,DX	0.000055	0.00000040	ug/L		01/10/23 05:16	01/24/23 07:41	1
Total PeCDF	0.0000092	J,DX MB q	0.000055	0.00000032	ug/L		01/10/23 05:16	01/24/23 07:41	1
Total HxCDD	0.000055	J,DX MB q	0.000055	0.00000036	ug/L		01/10/23 05:16	01/24/23 07:41	1
Total HxCDF	0.000052	J,DX MB q	0.000055	0.00000038	ug/L		01/10/23 05:16	01/24/23 07:41	1
Total HpCDD	0.00063	MB	0.000055	0.0000015	ug/L		01/10/23 05:16	01/24/23 07:41	1
Total HpCDF	0.00016	MB q	0.000055	0.00000048	ug/L		01/10/23 05:16	01/24/23 07:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*25 - 164*	*01/10/23 05:16*	*01/24/23 07:41*	*1*
13C-2,3,7,8-TCDF	*66*		*24 - 169*	*01/10/23 05:16*	*01/24/23 07:41*	*1*
13C-1,2,3,7,8-PeCDD	*73*		*25 - 181*	*01/10/23 05:16*	*01/24/23 07:41*	*1*
13C-1,2,3,7,8-PeCDF	*73*		*24 - 185*	*01/10/23 05:16*	*01/24/23 07:41*	*1*
13C-2,3,4,7,8-PeCDF	*72*		*21 - 178*	*01/10/23 05:16*	*01/24/23 07:41*	*1*
13C-1,2,3,4,7,8-HxCDD	*86*		*32 - 141*	*01/10/23 05:16*	*01/24/23 07:41*	*1*
13C-1,2,3,6,7,8-HxCDD	*78*		*28 - 130*	*01/10/23 05:16*	*01/24/23 07:41*	*1*
13C-1,2,3,4,7,8-HxCDF	*88*		*26 - 152*	*01/10/23 05:16*	*01/24/23 07:41*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDF	87		26 - 123	01/10/23 05:16	01/24/23 07:41	1
13C-1,2,3,7,8,9-HxCDF	78		29 - 147	01/10/23 05:16	01/24/23 07:41	1
13C-2,3,4,6,7,8-HxCDF	91		28 - 136	01/10/23 05:16	01/24/23 07:41	1
13C-1,2,3,4,6,7,8-HpCDD	88		23 - 140	01/10/23 05:16	01/24/23 07:41	1
13C-1,2,3,4,6,7,8-HpCDF	84		28 - 143	01/10/23 05:16	01/24/23 07:41	1
13C-1,2,3,4,7,8,9-HpCDF	83		26 - 138	01/10/23 05:16	01/24/23 07:41	1
13C-OCDD	79		17 - 157	01/10/23 05:16	01/24/23 07:41	1
13C-OCDF	83		17 - 157	01/10/23 05:16	01/24/23 07:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	88		35 - 197	01/10/23 05:16	01/24/23 07:41	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000011	0.0000012	ug/L		01/10/23 05:16	01/29/23 12:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*90*		*24 - 169*	*01/10/23 05:16*	*01/29/23 12:39*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*132*		*35 - 197*	*01/10/23 05:16*	*01/29/23 12:39*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-122687-1	EPBBC_20230105	88
570-122687-1 - RA	EPBBC_20230105	132
MB 320-645751/1-A	Method Blank	84
MB 320-645751/1-A - RA	Method Blank	114

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-645751/2-A	Lab Control Sample	85
LCSD 320-645751/3-A	Lab Control Sample Dup	84

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-122687-1	EPBBC_20230105	69	66	73	73	72	86	78	88
570-122687-1 - RA	EPBBC_20230105		90						
MB 320-645751/1-A	Method Blank	57	53	60	58	58	68	59	71
MB 320-645751/1-A - RA	Method Blank		76						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-122687-1	EPBBC_20230105	87	78	91	88	84	83	79	83
570-122687-1 - RA	EPBBC_20230105								
MB 320-645751/1-A	Method Blank	68	67	70	74	66	73	71	76
MB 320-645751/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-645751/2-A	Lab Control Sample	64	58	69	68	67	77	70	79
LCSD 320-645751/3-A	Lab Control Sample Dup	54	49	54	53	51	61	55	64

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-645751/2-A	Lab Control Sample	78	76	81	85	78	83	84	90
LCSD 320-645751/3-A	Lab Control Sample Dup	63	56	65	63	58	60	57	60

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122687-2
Project/Site: Boeing SSFL ISRA and BMP

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-645751/1-A
Matrix: Water
Analysis Batch: 648867

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 645751

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000062	ug/L		01/10/23 05:16	01/24/23 04:28	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000033	ug/L		01/10/23 05:16	01/24/23 04:28	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000021	ug/L		01/10/23 05:16	01/24/23 04:28	1
2,3,4,7,8-PeCDF	0.000000932	J,DX q	0.000050	0.00000022	ug/L		01/10/23 05:16	01/24/23 04:28	1
1,2,3,4,7,8-HxCDD	0.00000243	J,DX q	0.000050	0.00000022	ug/L		01/10/23 05:16	01/24/23 04:28	1
1,2,3,6,7,8-HxCDD	0.00000196	J,DX	0.000050	0.00000024	ug/L		01/10/23 05:16	01/24/23 04:28	1
1,2,3,7,8,9-HxCDD	0.00000568	J,DX	0.000050	0.00000021	ug/L		01/10/23 05:16	01/24/23 04:28	1
1,2,3,4,7,8-HxCDF	0.00000123	J,DX q	0.000050	0.00000026	ug/L		01/10/23 05:16	01/24/23 04:28	1
1,2,3,6,7,8-HxCDF	0.00000138	J,DX q	0.000050	0.00000026	ug/L		01/10/23 05:16	01/24/23 04:28	1
1,2,3,7,8,9-HxCDF	0.00000787	J,DX	0.000050	0.00000029	ug/L		01/10/23 05:16	01/24/23 04:28	1
2,3,4,6,7,8-HxCDF	0.00000146	J,DX q	0.000050	0.00000026	ug/L		01/10/23 05:16	01/24/23 04:28	1
1,2,3,4,6,7,8-HpCDD	0.00000833	J,DX	0.000050	0.00000018	ug/L		01/10/23 05:16	01/24/23 04:28	1
1,2,3,4,6,7,8-HpCDF	0.00000780	J,DX q	0.000050	0.00000022	ug/L		01/10/23 05:16	01/24/23 04:28	1
1,2,3,4,7,8,9-HpCDF	0.00000772	J,DX	0.000050	0.00000024	ug/L		01/10/23 05:16	01/24/23 04:28	1
OCDD	0.0000116	J,DX	0.00010	0.00000082	ug/L		01/10/23 05:16	01/24/23 04:28	1
OCDF	0.00000648	J,DX	0.00010	0.00000031	ug/L		01/10/23 05:16	01/24/23 04:28	1
Total TCDD	ND		0.000010	0.00000062	ug/L		01/10/23 05:16	01/24/23 04:28	1
Total TCDF	0.00000274	J,DX	0.000010	0.00000025	ug/L		01/10/23 05:16	01/24/23 04:28	1
Total PeCDD	ND		0.000050	0.00000033	ug/L		01/10/23 05:16	01/24/23 04:28	1
Total PeCDF	0.000000932	J,DX q	0.000050	0.00000021	ug/L		01/10/23 05:16	01/24/23 04:28	1
Total HxCDD	0.0000131	J,DX q	0.000050	0.00000021	ug/L		01/10/23 05:16	01/24/23 04:28	1
Total HxCDF	0.0000119	J,DX q	0.000050	0.00000026	ug/L		01/10/23 05:16	01/24/23 04:28	1
Total HpCDD	0.0000160	J,DX	0.000050	0.00000018	ug/L		01/10/23 05:16	01/24/23 04:28	1
Total HpCDF	0.0000155	J,DX q	0.000050	0.00000022	ug/L		01/10/23 05:16	01/24/23 04:28	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*57*		*25 - 164*	*01/10/23 05:16*	*01/24/23 04:28*	*1*
13C-2,3,7,8-TCDF	*53*		*24 - 169*	*01/10/23 05:16*	*01/24/23 04:28*	*1*
13C-1,2,3,7,8-PeCDD	*60*		*25 - 181*	*01/10/23 05:16*	*01/24/23 04:28*	*1*
13C-1,2,3,7,8-PeCDF	*58*		*24 - 185*	*01/10/23 05:16*	*01/24/23 04:28*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-645751/1-A
Matrix: Water
Analysis Batch: 648867

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 645751

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	58		21 - 178	01/10/23 05:16	01/24/23 04:28	1
13C-1,2,3,4,7,8-HxCDD	68		32 - 141	01/10/23 05:16	01/24/23 04:28	1
13C-1,2,3,6,7,8-HxCDD	59		28 - 130	01/10/23 05:16	01/24/23 04:28	1
13C-1,2,3,4,7,8-HxCDF	71		26 - 152	01/10/23 05:16	01/24/23 04:28	1
13C-1,2,3,6,7,8-HxCDF	68		26 - 123	01/10/23 05:16	01/24/23 04:28	1
13C-1,2,3,7,8,9-HxCDF	67		29 - 147	01/10/23 05:16	01/24/23 04:28	1
13C-2,3,4,6,7,8-HxCDF	70		28 - 136	01/10/23 05:16	01/24/23 04:28	1
13C-1,2,3,4,6,7,8-HpCDD	74		23 - 140	01/10/23 05:16	01/24/23 04:28	1
13C-1,2,3,4,6,7,8-HpCDF	66		28 - 143	01/10/23 05:16	01/24/23 04:28	1
13C-1,2,3,4,7,8,9-HpCDF	73		26 - 138	01/10/23 05:16	01/24/23 04:28	1
13C-OCDD	71		17 - 157	01/10/23 05:16	01/24/23 04:28	1
13C-OCDF	76		17 - 157	01/10/23 05:16	01/24/23 04:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	84		35 - 197	01/10/23 05:16	01/24/23 04:28	1

Lab Sample ID: LCS 320-645751/2-A
Matrix: Water
Analysis Batch: 648867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 645751

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000197		ug/L		98	67 - 158		
2,3,7,8-TCDF			0.000200	0.000234	MB	ug/L		117	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000913		ug/L		91	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000883		ug/L		88	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000884	MB	ug/L		88	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000891	MB	ug/L		89	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00100	MB	ug/L		100	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000917	MB	ug/L		92	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000914	MB	ug/L		91	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000923	MB	ug/L		92	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000933	MB	ug/L		93	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000942	MB	ug/L		94	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000896	MB	ug/L		90	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000987	MB	ug/L		99	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000911	MB	ug/L		91	78 - 138		
OCDD			0.00200	0.00200	MB	ug/L		100	78 - 144		
OCDF			0.00200	0.00193	MB	ug/L		97	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	64		20 - 175
13C-2,3,7,8-TCDF	58		22 - 152
13C-1,2,3,7,8-PeCDD	69		21 - 227
13C-1,2,3,7,8-PeCDF	68		21 - 192
13C-2,3,4,7,8-PeCDF	67		13 - 328
13C-1,2,3,4,7,8-HxCDD	77		21 - 193
13C-1,2,3,6,7,8-HxCDD	70		25 - 163
13C-1,2,3,4,7,8-HxCDF	79		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-645751/2-A
Matrix: Water
Analysis Batch: 648867

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 645751

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	78		21 - 159
13C-1,2,3,7,8,9-HxCDF	76		17 - 205
13C-2,3,4,6,7,8-HxCDF	81		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	85		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	78		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	83		20 - 186
13C-OCDD	84		13 - 199
13C-OCDF	90		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-645751/3-A
Matrix: Water
Analysis Batch: 648867

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 645751

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000208		ug/L		104	67 - 158	6	50
2,3,7,8-TCDF			0.000200	0.000244	MB	ug/L		122	75 - 158	4	50
1,2,3,7,8-PeCDD			0.00100	0.000909		ug/L		91	70 - 142	0	50
1,2,3,7,8-PeCDF			0.00100	0.000917		ug/L		92	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.000939	MB	ug/L		94	68 - 160	6	50
1,2,3,4,7,8-HxCDD			0.00100	0.000875	MB	ug/L		88	70 - 164	2	50
1,2,3,6,7,8-HxCDD			0.00100	0.000987	MB	ug/L		99	76 - 134	2	50
1,2,3,7,8,9-HxCDD			0.00100	0.000916	MB	ug/L		92	64 - 162	0	50
1,2,3,4,7,8-HxCDF			0.00100	0.000896	MB	ug/L		90	72 - 134	2	50
1,2,3,6,7,8-HxCDF			0.00100	0.000919	MB	ug/L		92	84 - 130	0	50
1,2,3,7,8,9-HxCDF			0.00100	0.000930	MB	ug/L		93	78 - 130	0	50
2,3,4,6,7,8-HxCDF			0.00100	0.000925	MB	ug/L		92	70 - 156	2	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000883	MB	ug/L		88	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00100	MB	ug/L		100	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000871	MB	ug/L		87	78 - 138	4	50
OCDD			0.00200	0.00203	MB	ug/L		101	78 - 144	1	50
OCDF			0.00200	0.00192	MB	ug/L		96	63 - 170	0	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	54		20 - 175
13C-2,3,7,8-TCDF	49		22 - 152
13C-1,2,3,7,8-PeCDD	54		21 - 227
13C-1,2,3,7,8-PeCDF	53		21 - 192
13C-2,3,4,7,8-PeCDF	51		13 - 328
13C-1,2,3,4,7,8-HxCDD	61		21 - 193
13C-1,2,3,6,7,8-HxCDD	55		25 - 163
13C-1,2,3,4,7,8-HxCDF	64		19 - 202
13C-1,2,3,6,7,8-HxCDF	63		21 - 159
13C-1,2,3,7,8,9-HxCDF	56		17 - 205
13C-2,3,4,6,7,8-HxCDF	65		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	63		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-645751/3-A
Matrix: Water
Analysis Batch: 648867

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 645751

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	58		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	60		20 - 186
13C-OCDD	57		13 - 199
13C-OCDF	60		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	84		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-645751/1-A
Matrix: Water
Analysis Batch: 650284

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 645751

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.0000014	ug/L		01/10/23 05:16	01/29/23 11:25	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	76		24 - 169	01/10/23 05:16	01/29/23 11:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	114		35 - 197	01/10/23 05:16	01/29/23 11:25	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-2

Specialty Organics

Prep Batch: 645751

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1 - RA	EPBBC_20230105	Total/NA	Water	1613B	
570-122687-1	EPBBC_20230105	Total/NA	Water	1613B	
MB 320-645751/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-645751/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-645751/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-645751/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 648867

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	1613B	645751
MB 320-645751/1-A	Method Blank	Total/NA	Water	1613B	645751
LCS 320-645751/2-A	Lab Control Sample	Total/NA	Water	1613B	645751
LCSD 320-645751/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	645751

Analysis Batch: 650284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1 - RA	EPBBC_20230105	Total/NA	Water	1613B	645751
MB 320-645751/1-A - RA	Method Blank	Total/NA	Water	1613B	645751

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-2

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		907.8 mL	20.0 uL	645751	01/10/23 05:16	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	650284	01/29/23 12:39	SMA	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			907.8 mL	20.0 uL	645751	01/10/23 05:16	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	648867	01/24/23 07:41	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-2

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-23
Hawaii	State	<cert No.>	01-29-23
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122687-1	EPBBC_20230105	Water	01/05/23 10:25	01/05/23 16:00

122687

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-5-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5484	Carrier: ECI	1 of 1 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler: Adrian Mayorga
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn; – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gel cube	2.5 gel cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL. only need to fill he f of 500mL. Bottles that are sized up based on inventory availab ity only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBMC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBBC_20230105	1 5 2023	1025	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBCC_			G	W	2						x														
EPBL C_			G	W	1									x											
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to data Access. Bill to Haley & Aldrich AP@haleyaldrich.com. Report nv Data Package nd provide ID. Al dissolved samples are to be filtered ith 24 hou of receipt, even those placed on hold. Low limits needed for Mercury (MD 0.07 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.		
Relinquished by:	Company: H&A	Date/Time: 1-5-23 1310	Received by: EC	Date/Time: 1/5/23 1310
Relinquished by:	Company: EC	Date/Time: 1/5/23 1600	Received by: EC	Date/Time: 1/5/23 1600
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.9 2.8/2.8 2.9/2.9 4.8/1.8 SCII

SAP COC 2019/2020 VERSION 3

570-122687 Chain of Custody

2/2/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203332.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122687-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/23/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230105 (570-122687-1)	1/5/23	10:25 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	01/06/23 1056	EC	[signature]	1/7/23 905	GSOBAL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: Seal | Cooler Temperature(s) °C and Other Remarks: 1.9c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122687-2

Login Number: 122687
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122687-2

Login Number: 122687
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/07/23 11:08 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.9c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122687-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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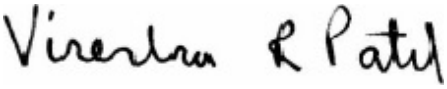
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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1/19/2023 3:48:38 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-3

Job ID: 570-122687-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122687-3

Comments
No additional comments.

Receipt
The samples were received on 1/5/2023 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.8º C, 1.9º C, 2.8º C and 2.9º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-3

Client Sample ID: EPBBC_20230105

Lab Sample ID: 570-122687-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.071		0.0025	0.00040	ug/L	5		1631E	Total/NA
Mercury	0.010		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-3

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.071		0.0025	0.00040	ug/L			01/10/23 16:04	5

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-3

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.010		0.00050	0.000079	ug/L			01/10/23 19:03	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-415117/13
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/10/23 15:23	1

Lab Sample ID: MB 580-415117/14
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/10/23 15:27	1

Lab Sample ID: MB 580-415117/15
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/10/23 15:31	1

Lab Sample ID: LCS 580-415117/18
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00478		ug/L		96	77 - 123		

Lab Sample ID: LCSD 580-415117/19
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00504		ug/L		101	77 - 123	5	24

Lab Sample ID: 570-122627-A-1 MS
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.012		0.00500	0.0172		ug/L		98	71 - 125		

Lab Sample ID: 570-122627-A-1 MSD
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.012		0.00500	0.0172		ug/L		97	71 - 125	0	24

Lab Sample ID: 580-121919-A-2 MS
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00016	J,DX	0.00500	0.00434		ug/L		84	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-121919-A-2 MSD
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00016	J,DX	0.00500	0.00423		ug/L		81	71 - 125	3	24

Lab Sample ID: MB 580-414842/1-A
Matrix: Water
Analysis Batch: 415117

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/10/23 15:39	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-3

Metals

Filtration Batch: 414842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	Filtration	
MB 580-414842/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 415117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	1631E	414842
570-122687-1	EPBBC_20230105	Total/NA	Water	1631E	
MB 580-414842/1-A	Method Blank	Dissolved	Water	1631E	414842
MB 580-415117/13	Method Blank	Total/NA	Water	1631E	
MB 580-415117/14	Method Blank	Total/NA	Water	1631E	
MB 580-415117/15	Method Blank	Total/NA	Water	1631E	
LCS 580-415117/18	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-415117/19	Lab Control Sample Dup	Total/NA	Water	1631E	
570-122627-A-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-122627-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-121919-A-2 MS	Matrix Spike	Total/NA	Water	1631E	
580-121919-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-3

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414842	01/09/23 10:40	LEL	EET SEA
Dissolved	Analysis	1631E		1			415117	01/10/23 19:03	D1C	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		5			415117	01/10/23 16:04	D1C	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122687-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-3

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122687-1	EPBBC_20230105	Water	01/05/23 10:25	01/05/23 16:00

122687

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-5-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5484	Carrier: EC1	1 of 1 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler: Adrian Mayorga
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn; – (Total Dissolved)	Method 200.8: Ag As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gel cube	2.5 gel cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL. only need to fill he f of 500mL. Bottles that are sized up based on inventory availab ity only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBMC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBBC_20230105	1 5 2023	1025	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBCC_			G	W	2						x														
EPBL C_			G	W	1									x											
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to data Access. Bill to Haley & Aldrich AP@haleyaldrich.com. Report nv Data Package nd provide ID. Al dissolved samples are to be filtered ith 24 hou of receipt, even those placed on hold. Low limits needed for Mercury (MD 0.07 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 1-5-23 1310	Received by: EC	EC	Date/Time: 1/5/23 1310
Relinquished by:	Company: EC	Date/Time: 1/5/23 1600	Received by:	EC	Date/Time: 1/5/23 1600
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.9 2.8/2.8 2.9/2.9 4.8/1.8 SCII

SAP COC 2019/2020 VERSION 3

570-122687 Chain of Custody

1/19/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122687-3

Login Number: 122687
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122687-3

Login Number: 122687
List Number: 3
Creator: Groden, Kyle J

List Source: Eurofins Seattle
List Creation: 01/09/23 08:25 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.0C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/24/2023 12:37:14 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122687-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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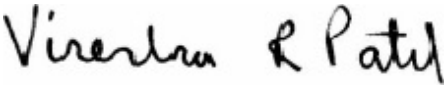

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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-4

Job ID: 570-122687-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122687-4

Comments
No additional comments.

Receipt
The samples were received on 1/5/2023 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.8º C, 1.9º C, 2.8º C and 2.9º C.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-4

Client Sample ID: EPBBC_20230105 — Lab Sample ID: 570-122687-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	21.38		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	3.47		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	69.28		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	90.66		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	5.87		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-4

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**21.38**		0.01	0.01	%			01/23/23 12:12	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/23/23 12:12	1
Fine Sand (0.125 to 0.25mm)	**3.47**		0.01	0.01	%			01/23/23 12:12	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/23/23 12:12	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/23/23 12:12	1
Silt (0.00391 to 0.0625mm)	**69.28**		0.01	0.01	%			01/23/23 12:12	1
Total Silt and Clay (0 to 0.0626mm)	**90.66**		0.01	0.01	%			01/23/23 12:12	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/23/23 12:12	1
Very Fine Sand (0.0625 to 0.125 mm)	**5.87**		0.01	0.01	%			01/23/23 12:12	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

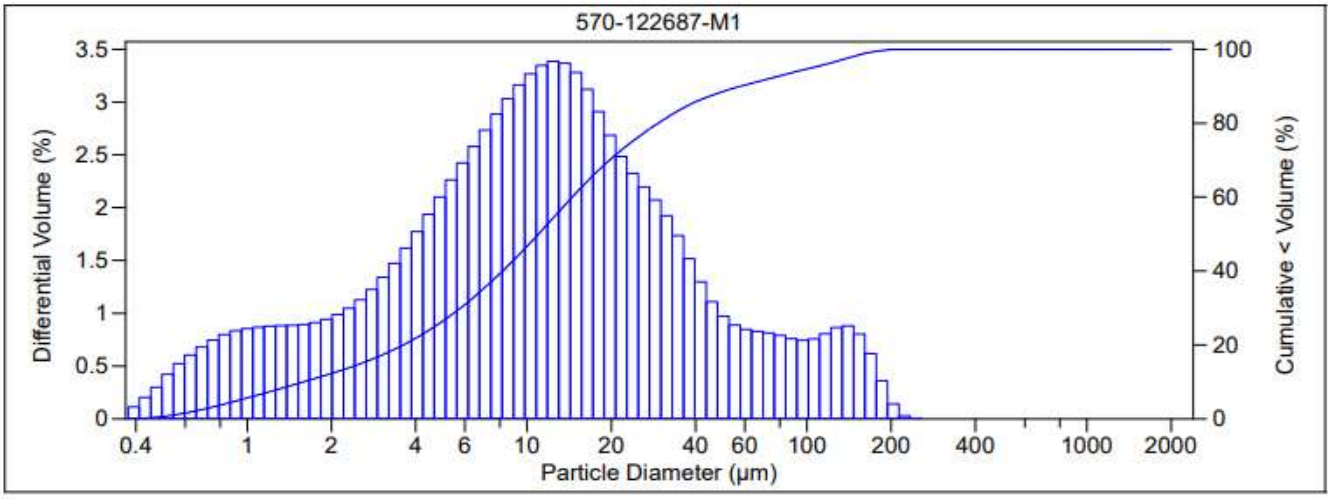
Haley & Aldrich, Inc.

Date Sampled:	01/05/23
Date Received:	01/05/23
Work Order No:	570-122687
Date Analyzed:	01/23/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230105		Silt	0.023

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	3.47	5.87	69.28	21.38	90.66



QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-4

Geotechnical

Analysis Batch: 297942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-4

Client Sample ID: EPBBC_20230105

Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			297942	01/23/23 12:12	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122687-4
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-4

Method	Method Description	Protocol	Laboratory
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4

Protocol References:

ASTM = ASTM International

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122687-1	EPBBC_20230105	Water	01/05/23 10:25	01/05/23 16:00

122687

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-5-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5484	Carrier: ECI	1 of 1 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler: Adrian Mayorga
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn; – (Total Dissolved)	Method 200.8: Ag As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gel cubs	2.5 gel cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL only need to fill het f 500mL Bottles that are sized up based on inventory availab lity only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBMC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBBC_20230105	1 5 2023	1025	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBCC_			G	W	2						x														
EPBL C_			G	W	1									x											
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to km ller@h lroyald ch com and post to ota Access Bill to Haley & Aldrich AP@haleyaldri com Report v Data Package nd provide ID Al d sso vod samp s re to be filtered ith 24 hou of receipt, even those placed on hold. Low l mits needed for Mercury (MD 0 0 7 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.		
Relinquished by:	Company: H A	Date/Time: 1-5-23 1310	Received by: EC	Date/Time: 1/5/23 1310
Relinquished by:	Company: EC	Date/Time: 1/5/23 1600	Received by:	Date/Time: 1/5/23 1600
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.9 2.8/2.8 2.9/2.9 4.8/1.8 SCII

SAP COC 2019/2020 VERSION 3

570-122687 Chain of Custody

1/24/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122687-4

Login Number: 122687
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122687-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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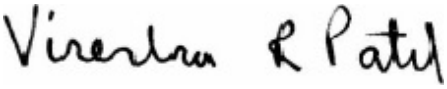

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Qualifiers

Rad

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122687-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122687-5

Comments
No additional comments.

Receipt
The samples were received on 1/5/2023 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.8º C, 1.9º C, 2.8º C and 2.9º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following sample was received with insufficient preservation at a pH of >2 SU: EPBBC_20230105 (570-122687-1). 570-122687-U-1. The sample was preserved to the appropriate pH in the laboratory.

RAD
Methods 900.0, 9310: Gross Alpha Beta prep batch 160-597138:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBBC_20230105 (570-122687-1), (LCS 160-597138/2-A), (LCSB 160-597138/3-A), (MB 160-597138/1-A), (570-122390-BC-2-B), (570-122390-BC-2-E DU), (570-122390-BC-2-C MS) and (570-122390-BC-2-D MSBT)

Method 900.0: Gross Alpha Beta prep batch 160-597281:

The matrix spike (MS) recoveries for gross alpha were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits. (570-123038-A-2-E MS)

Method 900.0: Gross Alpha Beta prep batch 160-597281:

The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass: EPBBC_20230105 (570-122687-1). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha Beta prep batch 160-597281:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBBC_20230105 (570-122687-1), (LCS 160-597281/2-A), (LCSB 160-597281/3-A), (MB 160-597281/1-A), (570-123038-A-2-D), (570-123038-A-2-G DU), (570-123038-A-2-E MS) and (570-123038-A-2-F MSBT)

Method 901.1: Gamma Prep Batch 160-596761
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m

Job ID: 570-122687-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBBC_20230105 (570-122687-1) and (570-122687-U-1-J DU)

Method 901.1: Gamma Prep Batch 160-597057
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBBC_20230105 (570-122687-1) and (570-122687-T-1-L DU)

Job ID: 570-122687-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Methods 903.0, 9315: Radium-226 batch 596421
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230105 (570-122687-1), (LCS 160-596421/2-A), (LCSD 160-596421/3-A) and (MB 160-596421/1-A)

Methods 904.0, 9320: Radium-228 prep batch 160-596471:

The Ra-228 laboratory control sample (LCS) associated with the following samples recovered at 128%: (LCS 160-596471/2-A). The limits in our LIMS system at (75-125%) reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS is within criteria and no further action is required.

Method 904.0: Radium-228 prep batch 160-596471:

The following sample(s) did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interference. During preparation the analyst visually noted matrix effects. The data have been reported with this narrative.

EPBBC_20230105 (570-122687-1)

Methods 904.0, 9320: Radium-228 prep batch 160-596471:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBBC_20230105 (570-122687-1), (LCS 160-596471/2-A), (LCSD 160-596471/3-A) and (MB 160-596471/1-A)

Method 905: Strontium-90 prep batch 160-596746:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBBC_20230105 (570-122687-1), (LCS 160-596746/2-A), (LCSD 160-596746/3-A) and (MB 160-596746/1-A)

Method 905: Strontium-90 batch 598605
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230105 (570-122687-1), (LCS 160-598605/2-A), (LCSD 160-598605/3-A) and (MB 160-598605/1-A)

Method 906.0: Tritium 597258
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBBC_20230105 (570-122687-1), (LCS 160-597258/2-A), (MB 160-597258/1-A), (160-48493-A-2-A), (160-48493-A-2-B MS), (160-48582-A-1-A) and (160-48582-A-1-C DU)

Method A-01-R: Isotopic Uranium batch 597259
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230105 (570-122687-1), (LCS 160-597259/2-A), (MB 160-597259/1-A), (570-123038-A-2-B) and (570-123038-A-2-C DU)

Methods A-01-R, U-02-RC: Isotopic Uranium batch 597538
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is

Job ID: 570-122687-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230105 (570-122687-1), (LCS 160-597538/2-A), (MB 160-597538/1-A), (570-123671-T-2-E) and (570-123671-T-2-F DU)

Method ExtChrom: Uranium Prep Batch 160-597259

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBBC_20230105 (570-122687-1).

Method ExtChrom: Uranium Prep Batch 160-597538

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBBC_20230105 (570-122687-1).

Method PrecSep_0: Radium-228 Prep Batch 160-596471

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230105 (570-122687-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-596421

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230105 (570-122687-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium 90 Prep Batch 160-596746

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230105 (570-122687-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-598605

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230105 (570-122687-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-598605

Insufficient sample volume was available to perform a sample duplicate for the following samples: EPBBC_20230105 (570-122687-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Client Sample ID: EPBBC_20230105 **Lab Sample ID: 570-122687-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	34.6	G	10.1	10.8	3.00	10.7	pCi/L	01/18/23 10:03	02/02/23 18:51	1
Gross Beta	35.8	G	4.58	5.81	4.00	4.10	pCi/L	01/18/23 10:03	02/02/23 18:51	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.800	U	1.52	1.52	3.00	2.63	pCi/L	01/17/23 09:22	01/19/23 20:43	1
Gross Beta	**3.27**		0.803	0.867	4.00	0.958	pCi/L	01/17/23 09:22	01/19/23 20:43	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.96	U	5.51	5.53	20.0	6.44	pCi/L	01/12/23 14:04	01/27/23 01:44	1
Potassium-40	-80.4	U	109	109		140	pCi/L	01/12/23 14:04	01/27/23 01:44	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.96	U	5.42	5.43	20.0	6.44	pCi/L	01/16/23 09:19	02/03/23 16:58	1
Potassium-40	58.7	U	99.0	99.2		101	pCi/L	01/16/23 09:19	02/03/23 16:58	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.958		0.591	0.598	1.00	0.822	pCi/L	01/11/23 09:34	02/02/23 09:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*48.3*		*40 - 110*	*01/11/23 09:34*	*02/02/23 09:46*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0363	U	0.0813	0.0814	1.00	0.187	pCi/L	01/11/23 09:34	02/02/23 09:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*62.3*		*40 - 110*	*01/11/23 09:34*	*02/02/23 09:47*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.26	U G	2.93	2.93	1.00	5.13	pCi/L	01/11/23 10:20	01/20/23 12:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*48.3*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:13*	*1*
Y Carrier	*71.4*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:13*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.00525	U G	0.670	0.670	1.00	1.26	pCi/L	01/11/23 10:20	01/20/23 12:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*62.3*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:14*	*1*
Y Carrier	*68.8*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:14*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.0749	U	0.886	0.886	3.00	1.58	pCi/L	01/12/23 11:13	01/27/23 18:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*69.8*		*40 - 110*	*01/12/23 11:13*	*01/27/23 18:48*	*1*
Y Carrier	*82.6*		*40 - 110*	*01/12/23 11:13*	*01/27/23 18:48*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.0446	U	0.728	0.728	3.00	1.30	pCi/L	01/30/23 13:23	02/08/23 11:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*77.9*		*40 - 110*	*01/30/23 13:23*	*02/08/23 11:23*	*1*
Y Carrier	*87.9*		*40 - 110*	*01/30/23 13:23*	*02/08/23 11:23*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-20.3	U	160	160	500	303	pCi/L	01/17/23 15:44	01/20/23 16:38	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	**0.625**		0.341	0.343	1.00	0.263	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*84.8*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBBC_20230105
Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.117	U	0.425	0.425	1.00	0.621	pCi/L	01/19/23 14:12	01/30/23 21:45	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*50.0*		*30 - 110*	*01/19/23 14:12*	*01/30/23 21:45*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
570-122687-1	EPBBC_20230105	48.3
LCS 160-596421/2-A	Lab Control Sample	91.6
LCSD 160-596421/3-A	Lab Control Sample Dup	99.4
MB 160-596421/1-A	Method Blank	97.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
570-122687-1	EPBBC_20230105	62.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
570-122687-1	EPBBC_20230105	48.3	71.4
LCS 160-596471/2-A	Lab Control Sample	91.6	77.0
LCSD 160-596471/3-A	Lab Control Sample Dup	99.4	84.1
MB 160-596471/1-A	Method Blank	97.5	82.6

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
570-122687-1	EPBBC_20230105	62.3	68.8

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Sr (40-110)	Y (40-110)
570-122687-1	EPBBC_20230105	69.8	82.6

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122687-5
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Sr (40-110)	Y (40-110)
LCS 160-596746/2-A	Lab Control Sample	88.4	89.0
LCS 160-598605/2-A	Lab Control Sample	86.2	86.0
LCSD 160-596746/3-A	Lab Control Sample Dup	85.9	91.6
LCSD 160-598605/3-A	Lab Control Sample Dup	88.2	87.9
MB 160-596746/1-A	Method Blank	87.7	74.4
MB 160-598605/1-A	Method Blank	83.5	87.9

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Sr (40-110)	Y (40-110)
570-122687-1	EPBBC_20230105	77.9	87.9

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	U-232 (30-110)
570-122687-1	EPBBC_20230105	84.8
570-123038-A-2-C DU	Duplicate	86.2
570-123671-T-2-F DU	Duplicate	92.9
LCS 160-597259/2-A	Lab Control Sample	87.1
LCS 160-597538/2-A	Lab Control Sample	80.5
MB 160-597259/1-A	Method Blank	85.3
MB 160-597538/1-A	Method Blank	80.4

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	U-232 (30-110)
570-122687-1	EPBBC_20230105	50.0

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-597138/1-A
Matrix: Water
Analysis Batch: 597550

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597138

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.08553	U	0.604	0.604	3.00	1.11	pCi/L	01/17/23 09:22	01/19/23 20:42	1
Gross Beta	-0.06305	U	0.538	0.538	4.00	0.966	pCi/L	01/17/23 09:22	01/19/23 20:42	1

Lab Sample ID: LCS 160-597138/2-A
Matrix: Water
Analysis Batch: 597550

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597138

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	57.54		8.18	3.00	2.19	pCi/L	114	75 - 125

Lab Sample ID: LCSB 160-597138/3-A
Matrix: Water
Analysis Batch: 597550

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597138

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.8	72.30		7.76	4.00	0.990	pCi/L	98	75 - 125

Lab Sample ID: 570-122390-BC-2-C MS
Matrix: Water
Analysis Batch: 597549

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597138

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	1.45	U	50.5	40.54		6.39	3.00	2.57	pCi/L	77	60 - 140

Lab Sample ID: 570-122390-BC-2-D MSBT
Matrix: Water
Analysis Batch: 597549

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597138

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	3.81		73.8	77.63		8.31	4.00	0.941	pCi/L	100	60 - 140

Lab Sample ID: 570-122390-BC-2-E DU
Matrix: Water
Analysis Batch: 597549

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597138

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	1.45	U	3.137		1.53	3.00	1.89	pCi/L	0.56	1
Gross Beta	3.81		3.216		0.863	4.00	0.925	pCi/L	0.33	1

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued)

Lab Sample ID: MB 160-597281/1-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597281

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.3178	U	0.498	0.499	3.00	0.856	pCi/L	01/18/23 10:03	02/01/23 19:04	1
Gross Beta	-0.4920	U	0.450	0.452	4.00	0.892	pCi/L	01/18/23 10:03	02/01/23 19:04	1

Lab Sample ID: LCS 160-597281/2-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	47.50		7.10	3.00	2.60	pCi/L	94	75 - 125

Lab Sample ID: LCSB 160-597281/3-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	65.09		7.04	4.00	0.936	pCi/L	88	75 - 125

Lab Sample ID: 570-123038-A-2-E MS
Matrix: Water
Analysis Batch: 599058

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	1.45	U	50.5	20.83	F1	3.86	3.00	1.88	pCi/L	38	60 - 140

Lab Sample ID: 570-123038-A-2-F MSBT
Matrix: Water
Analysis Batch: 599058

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	2.09		73.7	68.81		7.42	4.00	0.924	pCi/L	91	60 - 140

Lab Sample ID: 570-123038-A-2-G DU
Matrix: Water
Analysis Batch: 599058

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	1.45	U	1.117	U	1.34	3.00	2.19	pCi/L	0.12	1
Gross Beta	2.09		2.039		0.737	4.00	0.937	pCi/L	0.03	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-596761/1-A
Matrix: Water
Analysis Batch: 598464

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596761

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.3405	U	6.22	6.22	20.0	7.49	pCi/L	01/12/23 14:04	01/27/23 09:19	1
Potassium-40	-26.73	U	74.0	74.1		112	pCi/L	01/12/23 14:04	01/27/23 09:19	1

Lab Sample ID: LCS 160-596761/2-A
Matrix: Water
Analysis Batch: 598468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596761

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135600		15900		323	pCi/L	100	75 - 125
Cesium-137	41000	41980		4940	20.0	82.6	pCi/L	102	75 - 125
Cobalt-60	18200	18860		2220		68.1	pCi/L	104	75 - 125

Lab Sample ID: 570-122687-1 DU
Matrix: Water
Analysis Batch: 598468

Client Sample ID: EPBBC_20230105
Prep Type: Total/NA
Prep Batch: 596761

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	2.96	U	4.522	U	4.76	20.0	5.51	pCi/L	0.15	1
Potassium-40	-80.4	U	23.29	U	81.8		108	pCi/L	0.54	1

Lab Sample ID: MB 160-597057/1-A
Matrix: Water
Analysis Batch: 599329

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597057

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.994	U	5.77	5.78	20.0	7.23	pCi/L	01/16/23 09:19	02/03/23 03:29	1
Potassium-40	44.22	U	79.3	79.5		91.6	pCi/L	01/16/23 09:19	02/03/23 03:29	1

Lab Sample ID: LCS 160-597057/2-A
Matrix: Water
Analysis Batch: 599332

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597057

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	137500		16400		316	pCi/L	102	75 - 125
Cesium-137	41000	41790		4980	20.0	64.6	pCi/L	102	75 - 125
Cobalt-60	18200	18660		2220		34.7	pCi/L	103	75 - 125

Lab Sample ID: 570-122687-1 DU
Matrix: Water
Analysis Batch: 599329

Client Sample ID: EPBBC_20230105
Prep Type: Dissolved
Prep Batch: 597057

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	1.96	U	3.667	U	6.97	20.0	8.59	pCi/L	0.14	1
Potassium-40	58.7	U	29.45	U	105		122	pCi/L	0.14	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-596421/1-A
Matrix: Water
Analysis Batch: 599059

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596421

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02900	U	0.0421	0.0422	1.00	0.0719	pCi/L	01/11/23 09:34	02/02/23 09:40	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.5*		*40 - 110*	*01/11/23 09:34*	*02/02/23 09:40*	*1*

Lab Sample ID: LCS 160-596421/2-A
Matrix: Water
Analysis Batch: 599059

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596421

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.48		1.08	1.00	0.0823	pCi/L	92	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*91.6*		*40 - 110*

Lab Sample ID: LCSD 160-596421/3-A
Matrix: Water
Analysis Batch: 599059

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 596421

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.98		1.12	1.00	0.0883	pCi/L	97	75 - 125	0.23	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-596471/1-A
Matrix: Water
Analysis Batch: 597712

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596471

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.04645	U	0.259	0.259	1.00	0.502	pCi/L	01/11/23 10:20	01/20/23 12:06	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.5*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:06*	*1*
Y Carrier	*82.6*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:06*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-596471/2-A
Matrix: Water
Analysis Batch: 597712

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596471

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.26	10.58		1.44	1.00	0.643	pCi/L	128	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*91.6*		*40 - 110*
Y Carrier	*77.0*		*40 - 110*

Lab Sample ID: LCSD 160-596471/3-A
Matrix: Water
Analysis Batch: 597712

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 596471

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.26	9.293		1.25	1.00	0.462	pCi/L	112	75 - 125	0.48	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*
Y Carrier	*84.1*		*40 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-596746/1-A
Matrix: Water
Analysis Batch: 598557

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596746

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1133	U	0.196	0.196	3.00	0.373	pCi/L	01/12/23 11:13	01/27/23 18:47	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.7*		*40 - 110*	*01/12/23 11:13*	*01/27/23 18:47*	*1*
Y Carrier	*74.4*		*40 - 110*	*01/12/23 11:13*	*01/27/23 18:47*	*1*

Lab Sample ID: LCS 160-596746/2-A
Matrix: Water
Analysis Batch: 598557

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596746

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.38	7.183		0.793	3.00	0.290	pCi/L	97	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*88.4*		*40 - 110*
Y Carrier	*89.0*		*40 - 110*

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCSD 160-596746/3-A
Matrix: Water
Analysis Batch: 598557

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 596746

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.38	6.876		0.769	3.00	0.301	pCi/L	93	75 - 125	0.20	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.9*		*40 - 110*
Y Carrier	*91.6*		*40 - 110*

Lab Sample ID: MB 160-598605/1-A
Matrix: Water
Analysis Batch: 599763

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598605

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.09889	U	0.220	0.220	3.00	0.376	pCi/L	01/30/23 13:23	02/08/23 17:40	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*83.5*		*40 - 110*	*01/30/23 13:23*	*02/08/23 17:40*	*1*
Y Carrier	*87.9*		*40 - 110*	*01/30/23 13:23*	*02/08/23 17:40*	*1*

Lab Sample ID: LCS 160-598605/2-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598605

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	7.519		0.827	3.00	0.331	pCi/L	102	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*86.2*		*40 - 110*
Y Carrier	*86.0*		*40 - 110*

Lab Sample ID: LCSD 160-598605/3-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598605

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	6.838		0.755	3.00	0.250	pCi/L	93	75 - 125	0.43	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*88.2*		*40 - 110*
Y Carrier	*87.9*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-597258/1-A
Matrix: Water
Analysis Batch: 597783

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597258

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-17.12	U	159	159	500	299	pCi/L	01/17/23 15:44	01/20/23 13:46	1

Lab Sample ID: LCS 160-597258/2-A
Matrix: Water
Analysis Batch: 597783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597258

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2120	1984		385	500	299	pCi/L	94	75 - 125

Lab Sample ID: 160-48493-A-2-B MS
Matrix: Water
Analysis Batch: 597783

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597258

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	1.80	U	2110	1844		381	500	316	pCi/L	87	60 - 140

Lab Sample ID: 160-48582-A-1-C DU
Matrix: Water
Analysis Batch: 597783

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597258

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Tritium	-57.2	U	35.14	U	162	500	289	pCi/L	0.30	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-597259/1-A
Matrix: Water
Analysis Batch: 598217

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597259

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.05873	U	0.09433	0.09455	1.00	0.172	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*85.3*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Lab Sample ID: LCS 160-597259/2-A
Matrix: Water
Analysis Batch: 598218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597259

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Uranium-234	12.7	12.19		1.46	1.00	0.151	pCi/L	96	75 - 125
Uranium-238	13.0	13.33		1.56	1.00	0.135	pCi/L	102	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-597259/2-A
Matrix: Water
Analysis Batch: 598218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597259

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	87.1		30 - 110

Lab Sample ID: 570-123038-A-2-C DU
Matrix: Water
Analysis Batch: 598230

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597259

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	0.128			0.07847	U	0.1118	1.00	0.163	pCi/L			0.22	1

Tracer	DU %Yield	DU Qualifier	Limits
Uranium-232	86.2		30 - 110

Lab Sample ID: MB 160-597538/1-A
Matrix: Water
Analysis Batch: 598766

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597538

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.08454	U	0.1204	0.1205	1.00	0.175	pCi/L	01/19/23 14:12	01/30/23 21:45	1

Tracer	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	80.4		30 - 110	01/19/23 14:12	01/30/23 21:45	1

Lab Sample ID: LCS 160-597538/2-A
Matrix: Water
Analysis Batch: 598767

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597538

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.89		1.52	1.00	0.204	pCi/L	101	75 - 125		
Uranium-238			13.0	12.29		1.47	1.00	0.135	pCi/L	94	75 - 125		

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	80.5		30 - 110

Lab Sample ID: 570-123671-T-2-F DU
Matrix: Water
Analysis Batch: 598726

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597538

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	1.09			1.050		0.326	1.00	0.143	pCi/L			0.06	1

Tracer	DU %Yield	DU Qualifier	Limits
Uranium-232	92.9		30 - 110

Rad

Filtration Batch: 596238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	Filtration	
570-122687-1	EPBBC_20230105	Dissolved	Water	Filtration	
570-122687-1	EPBBC_20230105	Dissolved	Water	Filtration	
570-122687-1	EPBBC_20230105	Dissolved	Water	Filtration	
570-122687-1 DU	EPBBC_20230105	Dissolved	Water	Filtration	

Prep Batch: 596421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	PrecSep-21	596238
570-122687-1	EPBBC_20230105	Total/NA	Water	PrecSep-21	
MB 160-596421/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-596421/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-596421/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 596471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	PrecSep_0	596238
570-122687-1	EPBBC_20230105	Total/NA	Water	PrecSep_0	
MB 160-596471/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-596471/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-596471/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 596746

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	PrecSep-7	
MB 160-596746/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-596746/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-596746/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 596761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	Fill_Geo-0	
MB 160-596761/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-596761/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-122687-1 DU	EPBBC_20230105	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	Fill_Geo-0	596238
MB 160-597057/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597057/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-122687-1 DU	EPBBC_20230105	Dissolved	Water	Fill_Geo-0	596238

Prep Batch: 597138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	Evaporation	596238
MB 160-597138/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-597138/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-597138/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-122390-BC-2-C MS	Matrix Spike	Total/NA	Water	Evaporation	
570-122390-BC-2-D MSBT	Matrix Spike	Total/NA	Water	Evaporation	

Rad (Continued)

Prep Batch: 597138 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122390-BC-2-E DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 597258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	LSC_Dist_Susp	
MB 160-597258/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-597258/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
160-48493-A-2-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
160-48582-A-1-C DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 597259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	ExtChrom	
MB 160-597259/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597259/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123038-A-2-C DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 597281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Total/NA	Water	Evaporation	
MB 160-597281/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-597281/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-597281/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123038-A-2-E MS	Matrix Spike	Total/NA	Water	Evaporation	
570-123038-A-2-F MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-123038-A-2-G DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 597538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	ExtChrom	596238
MB 160-597538/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597538/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123671-T-2-F DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 598605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122687-1	EPBBC_20230105	Dissolved	Water	PrecSep-7	596238
MB 160-598605/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-598605/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-598605/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Client Sample ID: EPBBC_20230105

Date Collected: 01/05/23 10:25
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122687-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			650 mL	650 mL	596238	01/10/23 10:20	JML	EET SL
Dissolved	Prep	Evaporation			200.00 mL	1.0 g	597138	01/17/23 09:22	MST	EET SL
Dissolved	Analysis	900.0		1			597550	01/19/23 20:43	SCB	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	Evaporation			54.94 mL	1.0 g	597281	01/18/23 10:03	MST	EET SL
Total/NA	Analysis	900.0		1			599058	02/02/23 18:51	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	596238	01/10/23 09:44	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597057	01/16/23 09:19	JML	EET SL
Dissolved	Analysis	901.1		1			599333	02/03/23 16:58	SCB	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	596761	01/12/23 14:04	SAC	EET SL
Total/NA	Analysis	901.1		1			598464	01/27/23 01:44	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	596238	01/10/23 10:04	JML	EET SL
Dissolved	Prep	PrecSep-21			748.70 mL	1.0 g	596421	01/11/23 09:34	DJP	EET SL
Dissolved	Analysis	903.0		1			598940	02/02/23 09:47	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-21			245.23 mL	1.0 g	596421	01/11/23 09:34	DJP	EET SL
Total/NA	Analysis	903.0		1			598940	02/02/23 09:46	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	596238	01/10/23 10:04	JML	EET SL
Dissolved	Prep	PrecSep_0			748.70 mL	1.0 g	596471	01/11/23 10:20	DJP	EET SL
Dissolved	Analysis	904.0		1	1.0 mL	1.0 mL	597614	01/20/23 12:14	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			245.23 mL	1.0 g	596471	01/11/23 10:20	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	597614	01/20/23 12:13	SCB	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	596238	01/10/23 09:44	JML	EET SL
Dissolved	Prep	PrecSep-7			259.58 mL	1.0 g	598605	01/30/23 13:23	DJP	EET SL
Dissolved	Analysis	905		1			599671	02/08/23 11:23	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			259.63 mL	1.0 g	596746	01/12/23 11:13	DJP	EET SL
Total/NA	Analysis	905		1			598557	01/27/23 18:48	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	LSC_Dist_Susp			102.13 mL	1.0 g	597258	01/17/23 15:44	SEH	EET SL
Total/NA	Analysis	906.0		1			597783	01/20/23 16:38	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	596238	01/10/23 09:44	JML	EET SL
Dissolved	Prep	ExtChrom			250.16 mL	1.0 mL	597538	01/19/23 14:12	SAC	EET SL
Dissolved	Analysis	A-01-R		1			598768	01/30/23 21:45	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			250.09 mL	1.0 mL	597259	01/17/23 16:09	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598219	01/25/23 14:42	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122687-5
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	02-09-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122687-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122687-1	EPBBC_20230105	Water	01/05/23 10:25	01/05/23 16:00

122687

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

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2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-5-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5484	Carrier: EC1	1 of 1 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler: Adrian Mayorga
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn; – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gel cube	2.5 gel cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL. only need to fill he f of 500mL. Bottles that are sized up based on inventory availab ity only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBMC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBBC_20230105	1 5 2023	1025	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBCC_			G	W	2						x														
EPBL C_			G	W	1									x											
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to km ller@h lroyald ch com and post to ota Access Bill to Haley & Ald rich AP@haleyaldri com Report v Data Package nd prov de a D Al d sso vod samp s re to be fi tered ith 24 hou of receipt, e ver those plac d on hold. Low l mits needed for Mercury (MD 0 0 7 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.		
Relinquished by:	Company: H A	Date/Time: 1-5-23 1310	Received by: EC	Date/Time: 1/5/23 1310
Relinquished by:	Company: EC	Date/Time: 1/5/23 1600	Received by: EC	Date/Time: 1/5/23 1600
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.9 2.8/2.8 2.9/2.9 4.8/1.8 SCII

SAP COC 2019/2020 VERSION 3

570-122687 Chain of Custody

2/13/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203331.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-122687-5
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/7/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Prec_21 Radium-226	903.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBBC_20230105 (570-122687-1)	1/5/23	10:25 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	01/26/23 10:53	EC	FED EX		
2	FED EX			[signature]	JAN 0 9 2023 0840	ETLSTL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122687-5

Login Number: 122687
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122687-5

Login Number: 122687
List Number: 4
Creator: Bohlmann, Jessica M

List Source: Eurofins St. Louis
List Creation: 01/09/23 12:26 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	570-122687-U-1 was received with a pH >2 SU.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122995-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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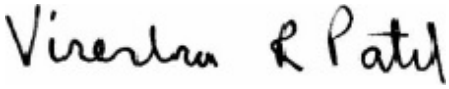
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-1

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122995-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122995-1

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.1º C.

Metals
Method 200.8: The method blank for preparation batch 570-295281 and analytical batch 570-295467 contained Copper and Lead above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: A1BMP0002_20230104 (570-122995-1), A1BMP0003_20230104 (570-122995-2), B1BMP0009_20230104 (570-122995-3), B1BMP0010_20230104 (570-122995-4), B1BMP0011_20230104 (570-122995-5), ILBMP0002_20230104 (570-122995-6) and EPNDSW04_20230104 (570-122995-7). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: The sample duplicate (DUP) precision for analytical batch 570-294850 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-1

Client Sample ID: A1BMP0002_20230104 — Lab Sample ID: 570-122995-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	6.6	MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	17	MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	2.7	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	3.1	BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	32		2.0	1.7	mg/L	1		SM 2540D	Total/NA

Client Sample ID: A1BMP0003_20230104 — Lab Sample ID: 570-122995-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	3.9	MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.34	J,DX MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	4.2	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Total Suspended Solids	5.7		1.0	0.83	mg/L	1		SM 2540D	Total/NA

Client Sample ID: B1BMP0009_20230104 — Lab Sample ID: 570-122995-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	3.9	MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.61	J,DX MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	3.2	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.18	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	1.6		1.0	0.83	mg/L	1		SM 2540D	Total/NA

Client Sample ID: B1BMP0010_20230104 — Lab Sample ID: 570-122995-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	7.4	MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	5.2	MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	3.0	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.22	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	12		1.0	0.83	mg/L	1		SM 2540D	Total/NA

Client Sample ID: B1BMP0011_20230104 — Lab Sample ID: 570-122995-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	3.6	MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.54	J,DX MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	3.4	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.19	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved

Client Sample ID: ILBMP0002_20230104 — Lab Sample ID: 570-122995-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.42	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable

This Detection Summary does not include radiochemical test results.

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Client Sample ID: ILBMP0002_20230104 (Continued)

Lab Sample ID: 570-122995-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	8.4	MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	2.2	MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Cadmium	0.15	J,DX BU	1.0	0.13	ug/L	1		200.8	Dissolved
Copper	6.9	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Total Suspended Solids	92		2.0	1.7	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EPNDSW04_20230104

Lab Sample ID: 570-122995-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	7.2	MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	5.5	MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	3.3	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Total Suspended Solids	120		2.0	1.7	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:19	1
Copper	**6.6**	**MB**	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:19	1
Lead	**17**	**MB**	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:19	1

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:21	1
Copper	**3.9**	**MB**	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:21	1
Lead	**0.34**	**J,DX MB**	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:21	1

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:00	1
Copper	**3.9**	**MB**	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:00	1
Lead	**0.61**	**J,DX MB**	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:00	1

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:02	1
Copper	**7.4**	**MB**	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:02	1
Lead	**5.2**	**MB**	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:02	1

Client Sample ID: B1BMP0011_20230104
Date Collected: 01/04/23 08:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:05	1
Copper	**3.6**	**MB**	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:05	1
Lead	**0.54**	**J,DX MB**	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:05	1

Client Sample ID: ILBMP0002_20230104
Date Collected: 01/04/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.42**	**J,DX**	1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:36	1
Copper	**8.4**	**MB**	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:36	1
Lead	**2.2**	**MB**	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:36	1

Client Sample ID: EPNDSW04_20230104
Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:38	1
Copper	**7.2**	**MB**	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:38	1
Lead	**5.5**	**MB**	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:38	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/13/23 11:34	1
Copper	**2.7**	**BU**	2.0	0.32	ug/L			01/13/23 11:34	1
Lead	**3.1**	**BU**	1.0	0.12	ug/L			01/13/23 11:34	1

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/13/23 11:36	1
Copper	**4.2**	**BU**	2.0	0.32	ug/L			01/13/23 11:36	1
Lead	ND	BU	1.0	0.12	ug/L			01/13/23 11:36	1

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/13/23 11:43	1
Copper	**3.2**	**BU**	2.0	0.32	ug/L			01/13/23 11:43	1
Lead	**0.18**	**J,DX BU**	1.0	0.12	ug/L			01/13/23 11:43	1

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/13/23 13:40	1
Copper	**3.0**	**BU**	2.0	0.32	ug/L			01/13/23 13:40	1
Lead	**0.22**	**J,DX BU**	1.0	0.12	ug/L			01/13/23 13:40	1

Client Sample ID: B1BMP0011_20230104
Date Collected: 01/04/23 08:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/13/23 13:42	1
Copper	**3.4**	**BU**	2.0	0.32	ug/L			01/13/23 13:42	1
Lead	**0.19**	**J,DX BU**	1.0	0.12	ug/L			01/13/23 13:42	1

Client Sample ID: ILBMP0002_20230104
Date Collected: 01/04/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	**0.15**	**J,DX BU**	1.0	0.13	ug/L			01/13/23 13:37	1
Copper	**6.9**	**BU**	2.0	0.32	ug/L			01/13/23 13:37	1
Lead	ND	BU	1.0	0.12	ug/L			01/13/23 13:37	1

Client Sample ID: EPNDSW04_20230104
Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/13/23 13:33	1
Copper	**3.3**	**BU**	2.0	0.32	ug/L			01/13/23 13:33	1
Lead	ND	BU	1.0	0.12	ug/L			01/13/23 13:33	1

General Chemistry

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	32		2.0	1.7	mg/L			01/10/23 14:11	1

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	5.7		1.0	0.83	mg/L			01/10/23 14:11	1

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	1.6		1.0	0.83	mg/L			01/10/23 14:11	1

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	12		1.0	0.83	mg/L			01/10/23 14:11	1

Client Sample ID: B1BMP0011_20230104
Date Collected: 01/04/23 08:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	ND		1.0	0.83	mg/L			01/10/23 14:11	1

Client Sample ID: ILBMP0002_20230104
Date Collected: 01/04/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	92		2.0	1.7	mg/L			01/10/23 14:11	1

Client Sample ID: EPNDSW04_20230104
Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	120		2.0	1.7	mg/L			01/10/23 14:11	1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-295281/1-A
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:28	1
Copper	0.329	J,DX	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:28	1
Lead	0.510	J,DX	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:28	1

Lab Sample ID: LCS 570-295281/2-A
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	84.7		ug/L		106	85 - 115
Copper	80.0	81.9		ug/L		102	85 - 115
Lead	80.0	82.2		ug/L		103	85 - 115

Lab Sample ID: LCSD 570-295281/3-A
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	85.5		ug/L		107	85 - 115	1	20
Copper	80.0	85.8		ug/L		107	85 - 115	5	20
Lead	80.0	81.9		ug/L		102	85 - 115	0	20

Lab Sample ID: 570-122995-7 MS
Matrix: Water
Analysis Batch: 295467

Client Sample ID: EPNDSW04_20230104
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	84.8		ug/L		106	80 - 120
Copper	7.2	MB	80.0	87.7		ug/L		101	80 - 120
Lead	5.5	MB	80.0	86.8		ug/L		102	80 - 120

Lab Sample ID: 570-122995-7 MSD
Matrix: Water
Analysis Batch: 295467

Client Sample ID: EPNDSW04_20230104
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	84.0		ug/L		105	80 - 120	1	20
Copper	7.2	MB	80.0	86.2		ug/L		99	80 - 120	2	20
Lead	5.5	MB	80.0	85.5		ug/L		100	80 - 120	1	20

Lab Sample ID: MB 570-295400/1-A
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			01/13/23 10:03	1
Copper	ND		2.0	0.32	ug/L			01/13/23 10:03	1
Lead	ND		1.0	0.12	ug/L			01/13/23 10:03	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-295400/2-A
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium			80.0	80.8		ug/L		101	85 - 115		
Copper			80.0	82.0		ug/L		102	85 - 115		
Lead			80.0	80.6		ug/L		101	85 - 115		

Lab Sample ID: LCSD 570-295400/3-A
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	80.9		ug/L		101	85 - 115	0	20
Copper			80.0	83.1		ug/L		104	85 - 115	1	20
Lead			80.0	82.7		ug/L		103	85 - 115	3	20

Lab Sample ID: 570-123391-C-1-C MS
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium	ND		40.0	39.1		ug/L		98	80 - 120		
Copper	5.9		40.0	45.8		ug/L		100	80 - 120		
Lead	ND		40.0	39.6		ug/L		99	80 - 120		

Lab Sample ID: 570-123391-C-1-D MSD
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		40.0	38.2		ug/L		96	80 - 120	2	20
Copper	5.9		40.0	44.8		ug/L		97	80 - 120	2	20
Lead	ND		40.0	38.5		ug/L		96	80 - 120	3	20

Lab Sample ID: 570-123557-A-1-C MSD
Matrix: Water
Analysis Batch: 295684

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		40.0	34.1		ug/L		85	80 - 120	1	20
Copper	3.2		40.0	38.7		ug/L		89	80 - 120	1	20
Lead	0.15	J,DX	40.0	34.3		ug/L		85	80 - 120	0	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-294850/1
Matrix: Water
Analysis Batch: 294850

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/10/23 14:10	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 570-294850/2
Matrix: Water
Analysis Batch: 294850

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	87.0		mg/L		87	77 - 116		

Lab Sample ID: LCSD 570-294850/3
Matrix: Water
Analysis Batch: 294850

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	90.0		mg/L		90	77 - 116	3	10

Lab Sample ID: 570-122983-A-1 DU
Matrix: Water
Analysis Batch: 294850

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	26			46.4		mg/L				56	10

Metals

Prep Batch: 295281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-1	A1BMP0002_20230104	Total Recoverable	Water	200.8	
570-122995-2	A1BMP0003_20230104	Total Recoverable	Water	200.8	
570-122995-3	B1BMP0009_20230104	Total Recoverable	Water	200.8	
570-122995-4	B1BMP0010_20230104	Total Recoverable	Water	200.8	
570-122995-5	B1BMP0011_20230104	Total Recoverable	Water	200.8	
570-122995-6	ILBMP0002_20230104	Total Recoverable	Water	200.8	
570-122995-7	EPNDSW04_20230104	Total Recoverable	Water	200.8	
MB 570-295281/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-295281/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-295281/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-122995-7 MS	EPNDSW04_20230104	Total Recoverable	Water	200.8	
570-122995-7 MSD	EPNDSW04_20230104	Total Recoverable	Water	200.8	

Filtration Batch: 295400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-1	A1BMP0002_20230104	Dissolved	Water	Filtration	
570-122995-2	A1BMP0003_20230104	Dissolved	Water	Filtration	
570-122995-3	B1BMP0009_20230104	Dissolved	Water	Filtration	
570-122995-4	B1BMP0010_20230104	Dissolved	Water	Filtration	
570-122995-5	B1BMP0011_20230104	Dissolved	Water	Filtration	
570-122995-6	ILBMP0002_20230104	Dissolved	Water	Filtration	
570-122995-7	EPNDSW04_20230104	Dissolved	Water	Filtration	
MB 570-295400/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-295400/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295400/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123391-C-1-C MS	Matrix Spike	Dissolved	Water	Filtration	
570-123391-C-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	
570-123557-A-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 295467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-1	A1BMP0002_20230104	Total Recoverable	Water	200.8	295281
570-122995-2	A1BMP0003_20230104	Total Recoverable	Water	200.8	295281
570-122995-3	B1BMP0009_20230104	Total Recoverable	Water	200.8	295281
570-122995-4	B1BMP0010_20230104	Total Recoverable	Water	200.8	295281
570-122995-5	B1BMP0011_20230104	Total Recoverable	Water	200.8	295281
570-122995-6	ILBMP0002_20230104	Total Recoverable	Water	200.8	295281
570-122995-7	EPNDSW04_20230104	Total Recoverable	Water	200.8	295281
MB 570-295281/1-A	Method Blank	Total Recoverable	Water	200.8	295281
LCS 570-295281/2-A	Lab Control Sample	Total Recoverable	Water	200.8	295281
LCSD 570-295281/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	295281
570-122995-7 MS	EPNDSW04_20230104	Total Recoverable	Water	200.8	295281
570-122995-7 MSD	EPNDSW04_20230104	Total Recoverable	Water	200.8	295281

Analysis Batch: 295684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-1	A1BMP0002_20230104	Dissolved	Water	200.8	295400
570-122995-2	A1BMP0003_20230104	Dissolved	Water	200.8	295400
570-122995-3	B1BMP0009_20230104	Dissolved	Water	200.8	295400
MB 570-295400/1-A	Method Blank	Dissolved	Water	200.8	295400
LCS 570-295400/2-A	Lab Control Sample	Dissolved	Water	200.8	295400

Metals (Continued)

Analysis Batch: 295684 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-295400/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	295400
570-123391-C-1-C MS	Matrix Spike	Dissolved	Water	200.8	295400
570-123391-C-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	295400
570-123557-A-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	295400

Analysis Batch: 295760

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-4	B1BMP0010_20230104	Dissolved	Water	200.8	295400
570-122995-5	B1BMP0011_20230104	Dissolved	Water	200.8	295400
570-122995-6	ILBMP0002_20230104	Dissolved	Water	200.8	295400
570-122995-7	EPNDSW04_20230104	Dissolved	Water	200.8	295400

General Chemistry

Analysis Batch: 294850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-1	A1BMP0002_20230104	Total/NA	Water	SM 2540D	
570-122995-2	A1BMP0003_20230104	Total/NA	Water	SM 2540D	
570-122995-3	B1BMP0009_20230104	Total/NA	Water	SM 2540D	
570-122995-4	B1BMP0010_20230104	Total/NA	Water	SM 2540D	
570-122995-5	B1BMP0011_20230104	Total/NA	Water	SM 2540D	
570-122995-6	ILBMP0002_20230104	Total/NA	Water	SM 2540D	
570-122995-7	EPNDSW04_20230104	Total/NA	Water	SM 2540D	
MB 570-294850/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-294850/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-294850/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-122983-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-1

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295400	01/12/23 15:37	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295684	01/13/23 11:34	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	295281	01/12/23 00:28	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295467	01/12/23 12:19	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	294850	01/10/23 14:11	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295400	01/12/23 15:37	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295684	01/13/23 11:36	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	295281	01/12/23 00:28	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295467	01/12/23 12:21	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	294850	01/10/23 14:11	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295400	01/12/23 15:37	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295684	01/13/23 11:43	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	295281	01/12/23 00:28	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295467	01/12/23 12:00	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	294850	01/10/23 14:11	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295400	01/12/23 15:37	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295760	01/13/23 13:40	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-1

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			50 mL	50 mL	295281	01/12/23 00:28	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295467	01/12/23 12:02	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	294850	01/10/23 14:11	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: B1BMP0011_20230104
Date Collected: 01/04/23 08:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295400	01/12/23 15:37	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295760	01/13/23 13:42	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	295281	01/12/23 00:28	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295467	01/12/23 12:05	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	294850	01/10/23 14:11	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: ILBMP0002_20230104
Date Collected: 01/04/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295400	01/12/23 15:37	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295760	01/13/23 13:37	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	295281	01/12/23 00:28	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295467	01/12/23 12:36	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	294850	01/10/23 14:11	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EPNDSW04_20230104
Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295400	01/12/23 15:37	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295760	01/13/23 13:33	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	295281	01/12/23 00:28	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295467	01/12/23 12:38	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-1

Client Sample ID: EPNDSW04_20230104

Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	294850	01/10/23 14:11	UWCT	EET CAL 4

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122995-1
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-1

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122995-1	A1BMP0002_20230104	Water	01/04/23 10:00	01/06/23 18:15
570-122995-2	A1BMP0003_20230104	Water	01/04/23 10:30	01/06/23 18:15
570-122995-3	B1BMP0009_20230104	Water	01/04/23 08:00	01/06/23 18:15
570-122995-4	B1BMP0010_20230104	Water	01/04/23 08:15	01/06/23 18:15
570-122995-5	B1BMP0011_20230104	Water	01/04/23 08:30	01/06/23 18:15
570-122995-6	ILBMP0002_20230104	Water	01/04/23 10:15	01/06/23 18:15
570-122995-7	EPNDSW04_20230104	Water	01/04/23 07:30	01/06/23 18:15

122995

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

TestAmerica services under this CoC shall be performed in accordance with the attached Master Services Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Method 200.8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002_20230104	01/04/23	1000	G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_20230104		1030	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_20230104		0800	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_20230104		0815	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_20230104		0830	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0002_20230104		1015	G	WM	8	Y	Y	X	X	X	X	X	X	X
ILBMP0004			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010			G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012			G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_20230104	01/04/23	0730	G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02			G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1

570-122995 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd ____ Corr'd: ____ Therm ID No.: ____

	Company	Date/Time		Date/Time
Relinquished by	H&A	01/06/23 1300	Received by: EC	1/6/23 1300
Relinquished by: EC	EC	1/6/23 1815	Received by:	1/6/23 1815
Relinquished by			Received in Laboratory by:	

1.7/1.7 2.1/2.1 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

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1/18/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-122995-1
Address: 5755 8th Street East, ,	Due Date Requested. 1/18/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
A1BMP0002_20230104 (570-122995-1)	1/4/23	10 00 Pacific		Water			X	X	2	
A1BMP0003_20230104 (570-122995-2)	1/4/23	10 30 Pacific		Water			X	X	2	
B1BMP0009_20230104 (570-122995-3)	1/4/23	08 00 Pacific		Water			X	X	2	
B1BMP0010_20230104 (570-122995-4)	1/4/23	08 15 Pacific		Water			X	X	2	
B1BMP0011_20230104 (570-122995-5)	1/4/23	08 30 Pacific		Water			X	X	2	
ILBMP0002_20230104 (570-122995-6)	1/4/23	10 15 Pacific		Water			X	X	2	
EPNDSW04_20230104 (570-122995-7)	1/4/23	07 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	1/19/23 1517				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/18/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No.: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122995-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
A1BMP0002_20230104 (570-122995-1)	1/4/23	10 00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
A1BMP0003_20230104 (570-122995-2)	1/4/23	10 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
B1BMP0009_20230104 (570-122995-3)	1/4/23	08 00 Pacific		Water			X	2	See QAS Boeing_w/u to zero
B1BMP0010_20230104 (570-122995-4)	1/4/23	08 15 Pacific		Water			X	2	See QAS Boeing_w/u to zero
B1BMP0011_20230104 (570-122995-5)	1/4/23	08 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
ILBMP0002_20230104 (570-122995-6)	1/4/23	10 15 Pacific		Water			X	2	See QAS Boeing_w/u to zero
EPNDSW04_20230104 (570-122995-7)	1/4/23	07 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

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Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/9/23 1552	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/18/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins
Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203575.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-122995-1
Address: 5755 8th Street East, ,	Due Date Requested: 1/18/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
A1BMP0002_20230104 (570-122995-1)	1/4/23	10:00 Pacific		Water			X	X	2	
A1BMP0003_20230104 (570-122995-2)	1/4/23	10:30 Pacific		Water			X	X	2	
B1BMP0009_20230104 (570-122995-3)	1/4/23	08:00 Pacific		Water			X	X	2	
B1BMP0010_20230104 (570-122995-4)	1/4/23	08:15 Pacific		Water			X	X	2	
B1BMP0011_20230104 (570-122995-5)	1/4/23	08:30 Pacific		Water			X	X	2	
ILBMP0002_20230104 (570-122995-6)	1/4/23	10:15 Pacific		Water			X	X	2	
EPNDSW04_20230104 (570-122995-7)	1/4/23	07:30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1517		[signature]	1-10-23 0925	EET.NW
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: -0.1°C w/o CF 0.1°C w/ CF

EFGS SC dig 2 CF = +0.2°C

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122995-1

Login Number: 122995
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122995-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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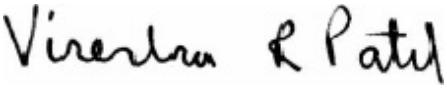
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Job ID: 570-122995-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122995-2

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.1º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: A1BMP0002_20230104 (570-122995-1), A1BMP0003_20230104 (570-122995-2), B1BMP0009_20230104 (570-122995-3), B1BMP0010_20230104 (570-122995-4), B1BMP0011_20230104 (570-122995-5), ILBMP0002_20230104 (570-122995-6) and (CCV 320-651279/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: EPNDSW04_20230104 (570-122995-7), (CCV 320-651542/2) and (MB 320-646691/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
Method 1613B: Elevated reporting limits are provided for the following samples due to insufficient sample provided for preparation B1BMP0009_20230104 (570-122995-3) and ILBMP0002_20230104 (570-122995-6).
Nominal volume required by method is 1 L.

preparation batch 320-647724
Method: 1613B_Sox_Sep_P
Matrix: Waters

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Client Sample ID: A1BMP0002_20230104 — Lab Sample ID: 570-122995-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	0.00000093	J,DX q	0.0000094	0.00000031	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDD	0.0000063	J,DX q	0.000047	0.00000035	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000040	J,DX MB	0.000047	0.00000036	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000030	J,DX MB	0.000047	0.00000042	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.000014	J,DX MB	0.000047	0.0000014	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.000027	J,DX MB	0.000047	0.0000014	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.000024	J,DX MB	0.000047	0.0000012	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.000014	J,DX MB	0.000047	0.00000080	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000097	J,DX MB q	0.000047	0.00000073	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000027	J,DX q MB	0.000047	0.00000080	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.000011	J,DX MB	0.000047	0.00000069	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00050	MB	0.000047	0.000019	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00023	MB	0.000047	0.0000058	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000093	J,DX MB	0.000047	0.0000052	ug/L	1		1613B	Total/NA
OCDD	0.0045	MB	0.000094	0.000028	ug/L	1		1613B	Total/NA
OCDF	0.00044	MB	0.000094	0.0000017	ug/L	1		1613B	Total/NA
Total TCDD	0.0000048	J,DX q MB	0.0000094	0.00000031	ug/L	1		1613B	Total/NA
Total TCDF	0.0000088	J,DX q	0.0000094	0.00000023	ug/L	1		1613B	Total/NA
Total PeCDD	0.000017	J,DX q	0.000047	0.00000035	ug/L	1		1613B	Total/NA
Total PeCDF	0.000029	J,DX MB	0.000047	0.00000036	ug/L	1		1613B	Total/NA
Total HxCDD	0.00019	J,DX MB q	0.000047	0.0000012	ug/L	1		1613B	Total/NA
Total HxCDF	0.00017	J,DX MB q	0.000047	0.00000069	ug/L	1		1613B	Total/NA
Total HpCDD	0.0012	MB	0.000047	0.000019	ug/L	1		1613B	Total/NA
Total HpCDF	0.00051	J,DX MB	0.000047	0.0000052	ug/L	1		1613B	Total/NA

Client Sample ID: A1BMP0003_20230104 — Lab Sample ID: 570-122995-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000049	J,DX	0.000052	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000016	J,DX MB	0.000052	0.00000017	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000048	J,DX MB	0.000052	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000012	J,DX MB	0.000052	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000048	J,DX q MB	0.000052	0.00000027	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000053	J,DX MB	0.000052	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000062	J,DX q MB	0.000052	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000049	J,DX MB	0.000052	0.00000017	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Client Sample ID: A1BMP0003_20230104 (Continued)

Lab Sample ID: 570-122995-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8,9-HxCDF	0.0000026	J,DX MB	0.000052	0.00000018	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000040	J,DX q MB	0.000052	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000064	J,DX MB	0.000052	0.00000049	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000018	J,DX q MB	0.000052	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000052	J,DX q MB	0.000052	0.00000022	ug/L	1		1613B	Total/NA
OCDD	0.000046	J,DX MB	0.00010	0.00000045	ug/L	1		1613B	Total/NA
OCDF	0.0000038	J,DX MB	0.00010	0.00000025	ug/L	1		1613B	Total/NA
Total TCDD	0.0000036	J,DX q MB	0.000010	0.00000029	ug/L	1		1613B	Total/NA
Total TCDF	0.00000064	J,DX q	0.000010	0.00000015	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000094	J,DX q	0.000052	0.00000023	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000025	J,DX q MB	0.000052	0.00000017	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000032	J,DX q MB	0.000052	0.00000024	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000041	J,DX q MB	0.000052	0.00000016	ug/L	1		1613B	Total/NA
Total HpCDD	0.000013	J,DX MB	0.000052	0.00000049	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000040	J,DX q MB	0.000052	0.00000020	ug/L	1		1613B	Total/NA

Client Sample ID: B1BMP0009_20230104

Lab Sample ID: 570-122995-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000011	J,DX q	0.000053	0.00000040	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000016	J,DX MB	0.000053	0.00000021	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000059	J,DX q MB	0.000053	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000037	J,DX MB	0.000053	0.00000068	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000031	J,DX q MB	0.000053	0.00000067	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000041	J,DX MB	0.000053	0.00000060	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000014	J,DX q MB	0.000053	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000098	J,DX q MB	0.000053	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000022	J,DX MB	0.000053	0.00000025	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000011	J,DX q MB	0.000053	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000087	MB	0.000053	0.0000037	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000026	J,DX MB	0.000053	0.00000066	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B1BMP0009_20230104 (Continued)

Lab Sample ID: 570-122995-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8,9-HpCDF	0.0000013	J,DX q MB	0.000053	0.00000070	ug/L	1		1613B	Total/NA
OCDD	0.00059	MB	0.00011	0.0000035	ug/L	1		1613B	Total/NA
OCDF	0.000066	J,DX MB	0.00011	0.00000055	ug/L	1		1613B	Total/NA
Total TCDD	0.0000041	J,DX q MB	0.000011	0.00000030	ug/L	1		1613B	Total/NA
Total TCDF	0.00000056	J,DX	0.000011	0.00000016	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000011	J,DX q	0.000053	0.00000040	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000055	J,DX q MB	0.000053	0.00000021	ug/L	1		1613B	Total/NA
Total HxCDD	0.000027	J,DX q MB	0.000053	0.00000060	ug/L	1		1613B	Total/NA
Total HxCDF	0.000021	J,DX q MB	0.000053	0.00000024	ug/L	1		1613B	Total/NA
Total HpCDD	0.00022	MB	0.000053	0.0000037	ug/L	1		1613B	Total/NA
Total HpCDF	0.000057	J,DX MB q	0.000053	0.00000066	ug/L	1		1613B	Total/NA

Client Sample ID: B1BMP0010_20230104

Lab Sample ID: 570-122995-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000015	J,DX	0.000051	0.00000036	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000016	J,DX q MB	0.000051	0.00000022	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000065	J,DX q MB	0.000051	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000048	J,DX MB	0.000051	0.00000068	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000053	J,DX MB	0.000051	0.00000063	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000068	J,DX MB	0.000051	0.00000058	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000020	J,DX q MB	0.000051	0.00000032	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000017	J,DX MB	0.000051	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000025	J,DX MB	0.000051	0.00000021	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000010	J,DX q MB	0.000051	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00011	MB	0.000051	0.0000051	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000028	J,DX MB	0.000051	0.00000095	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000021	J,DX MB	0.000051	0.00000077	ug/L	1		1613B	Total/NA
OCDD	0.0010	MB	0.00010	0.0000059	ug/L	1		1613B	Total/NA
OCDF	0.000043	J,DX MB	0.00010	0.00000033	ug/L	1		1613B	Total/NA
Total TCDF	0.0000019	J,DX q	0.000010	0.00000015	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000015	J,DX	0.000051	0.00000036	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000031	J,DX q MB	0.000051	0.00000022	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: B1BMP0010_20230104 (Continued)

Lab Sample ID: 570-122995-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total HxCDD	0.000041	J,DX MB	0.000051	0.00000058	ug/L	1		1613B	Total/NA
Total HxCDF	0.000019	J,DX q MB	0.000051	0.00000019	ug/L	1		1613B	Total/NA
Total HpCDD	0.00032	MB	0.000051	0.0000051	ug/L	1		1613B	Total/NA
Total HpCDF	0.000071	J,DX MB	0.000051	0.00000077	ug/L	1		1613B	Total/NA

Client Sample ID: B1BMP0011_20230104

Lab Sample ID: 570-122995-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000052	J,DX q	0.000053	0.00000026	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000020	J,DX MB	0.000053	0.00000016	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000041	J,DX MB	0.000053	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000025	J,DX MB	0.000053	0.00000043	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000019	J,DX MB	0.000053	0.00000040	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000021	J,DX MB	0.000053	0.00000036	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000093	J,DX MB	0.000053	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000091	J,DX MB	0.000053	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000023	J,DX q MB	0.000053	0.00000018	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000054	J,DX q MB	0.000053	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000038	J,DX MB	0.000053	0.0000016	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000013	J,DX MB	0.000053	0.00000049	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000011	J,DX MB	0.000053	0.00000051	ug/L	1		1613B	Total/NA
OCDD	0.00031	MB	0.00011	0.0000016	ug/L	1		1613B	Total/NA
OCDF	0.000031	J,DX MB	0.00011	0.00000031	ug/L	1		1613B	Total/NA
Total TCDD	0.0000021	J,DX q MB	0.000011	0.00000029	ug/L	1		1613B	Total/NA
Total TCDF	0.00000054	J,DX	0.000011	0.00000015	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000052	J,DX q	0.000053	0.00000026	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000033	J,DX q MB	0.000053	0.00000016	ug/L	1		1613B	Total/NA
Total HxCDD	0.000015	J,DX q MB	0.000053	0.00000036	ug/L	1		1613B	Total/NA
Total HxCDF	0.000011	J,DX q MB	0.000053	0.00000016	ug/L	1		1613B	Total/NA
Total HpCDD	0.00010	MB	0.000053	0.0000016	ug/L	1		1613B	Total/NA
Total HpCDF	0.000030	J,DX MB	0.000053	0.00000049	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Client Sample ID: ILBMP0002_20230104 — Lab Sample ID: 570-122995-6

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000043	J,DX q	0.000053	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000015	J,DX MB	0.000053	0.00000018	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000031	J,DX q MB	0.000053	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000023	J,DX MB	0.000053	0.00000034	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000013	J,DX MB	0.000053	0.00000034	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000079	J,DX MB	0.000053	0.00000030	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000077	J,DX MB	0.000053	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000054	J,DX MB	0.000053	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000021	J,DX MB	0.000053	0.00000018	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000028	J,DX q MB	0.000053	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000034	J,DX MB	0.000053	0.0000013	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000047	J,DX MB	0.000053	0.00000030	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000061	J,DX q MB	0.000053	0.00000032	ug/L	1		1613B	Total/NA
OCDD	0.00021	MB	0.00011	0.0000013	ug/L	1		1613B	Total/NA
OCDF	0.000012	J,DX MB	0.00011	0.00000025	ug/L	1		1613B	Total/NA
Total TCDD	0.0000031	J,DX q MB	0.000011	0.00000029	ug/L	1		1613B	Total/NA
Total TCDF	0.00000085	J,DX q	0.000011	0.00000018	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000043	J,DX q	0.000053	0.00000023	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000034	J,DX q MB	0.000053	0.00000018	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000098	J,DX MB	0.000053	0.00000030	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000074	J,DX q MB	0.000053	0.00000018	ug/L	1		1613B	Total/NA
Total HpCDD	0.000064	MB	0.000053	0.0000013	ug/L	1		1613B	Total/NA
Total HpCDF	0.000010	J,DX q MB	0.000053	0.00000030	ug/L	1		1613B	Total/NA

Client Sample ID: EPNDSW04_20230104 — Lab Sample ID: 570-122995-7

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000011	J,DX MB	0.000049	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000018	J,DX MB	0.000049	0.00000016	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000011	J,DX MB	0.000049	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000017	J,DX MB	0.000049	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000012	J,DX MB	0.000049	0.00000025	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample ID: EPNDSW04_20230104 (Continued)

Lab Sample ID: 570-122995-7

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8,9-HxCDD	0.0000016	J,DX MB	0.000049	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000011	J,DX MB	0.000049	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000013	J,DX MB	0.000049	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000029	J,DX MB	0.000049	0.00000015	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000010	J,DX MB	0.000049	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000033	J,DX MB	0.000049	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000019	J,DX MB q	0.000049	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000013	J,DX MB q	0.000049	0.00000019	ug/L	1		1613B	Total/NA
OCDD	0.000017	J,DX MB	0.000097	0.00000044	ug/L	1		1613B	Total/NA
OCDF	0.0000043	J,DX MB	0.000097	0.00000018	ug/L	1		1613B	Total/NA
Total TCDD	0.00000046	J,DX q	0.0000097	0.00000022	ug/L	1		1613B	Total/NA
Total TCDF	0.00000063	J,DX MB	0.0000097	0.00000009	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000011	J,DX MB	0.000049	0.00000021	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000029	J,DX MB	0.000049	0.00000016	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000053	J,DX MB q	0.000049	0.00000023	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000067	J,DX MB q	0.000049	0.00000015	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000062	J,DX MB	0.000049	0.00000023	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000037	J,DX MB q	0.000049	0.00000019	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.00000093	J,DX q	0.0000094	0.00000031	ug/L		01/18/23 06:41	01/27/23 18:20	1
1,2,3,7,8-PeCDD	0.0000063	J,DX q	0.000047	0.00000035	ug/L		01/18/23 06:41	01/27/23 18:20	1
1,2,3,7,8-PeCDF	0.0000040	J,DX MB	0.000047	0.00000036	ug/L		01/18/23 06:41	01/27/23 18:20	1
2,3,4,7,8-PeCDF	0.0000030	J,DX MB	0.000047	0.00000042	ug/L		01/18/23 06:41	01/27/23 18:20	1
1,2,3,4,7,8-HxCDD	0.000014	J,DX MB	0.000047	0.0000014	ug/L		01/18/23 06:41	01/27/23 18:20	1
1,2,3,6,7,8-HxCDD	0.000027	J,DX MB	0.000047	0.0000014	ug/L		01/18/23 06:41	01/27/23 18:20	1
1,2,3,7,8,9-HxCDD	0.000024	J,DX MB	0.000047	0.0000012	ug/L		01/18/23 06:41	01/27/23 18:20	1
1,2,3,4,7,8-HxCDF	0.000014	J,DX MB	0.000047	0.00000080	ug/L		01/18/23 06:41	01/27/23 18:20	1
1,2,3,6,7,8-HxCDF	0.0000097	J,DX MB q	0.000047	0.00000073	ug/L		01/18/23 06:41	01/27/23 18:20	1
1,2,3,7,8,9-HxCDF	0.0000027	J,DX q MB	0.000047	0.00000080	ug/L		01/18/23 06:41	01/27/23 18:20	1
2,3,4,6,7,8-HxCDF	0.000011	J,DX MB	0.000047	0.00000069	ug/L		01/18/23 06:41	01/27/23 18:20	1
1,2,3,4,6,7,8-HpCDD	0.00050	MB	0.000047	0.000019	ug/L		01/18/23 06:41	01/27/23 18:20	1
1,2,3,4,6,7,8-HpCDF	0.00023	MB	0.000047	0.0000058	ug/L		01/18/23 06:41	01/27/23 18:20	1
1,2,3,4,7,8,9-HpCDF	0.0000093	J,DX MB	0.000047	0.0000052	ug/L		01/18/23 06:41	01/27/23 18:20	1
OCDD	0.0045	MB	0.000094	0.000028	ug/L		01/18/23 06:41	01/27/23 18:20	1
OCDF	0.00044	MB	0.000094	0.0000017	ug/L		01/18/23 06:41	01/27/23 18:20	1
Total TCDD	0.0000048	J,DX q MB	0.0000094	0.00000031	ug/L		01/18/23 06:41	01/27/23 18:20	1
Total TCDF	0.0000088	J,DX q	0.0000094	0.00000023	ug/L		01/18/23 06:41	01/27/23 18:20	1
Total PeCDD	0.000017	J,DX q	0.000047	0.00000035	ug/L		01/18/23 06:41	01/27/23 18:20	1
Total PeCDF	0.000029	J,DX MB	0.000047	0.00000036	ug/L		01/18/23 06:41	01/27/23 18:20	1
Total HxCDD	0.00019	J,DX MB q	0.000047	0.0000012	ug/L		01/18/23 06:41	01/27/23 18:20	1
Total HxCDF	0.00017	J,DX MB q	0.000047	0.00000069	ug/L		01/18/23 06:41	01/27/23 18:20	1
Total HpCDD	0.0012	MB	0.000047	0.000019	ug/L		01/18/23 06:41	01/27/23 18:20	1
Total HpCDF	0.00051	J,DX MB	0.000047	0.0000052	ug/L		01/18/23 06:41	01/27/23 18:20	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*00*		*25 - 106*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-2,3,7,8-TCDF	*74*		*26 - 109*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-1,2,3,7,8-PeCDD	*05*		*25 - 181*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-1,2,3,7,8-PeCDF	*08*		*26 - 185*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-2,3,6,7,8-PeCDF	*07*		*21 - 178*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-1,2,3,6,7,8-HxCDD	*00*		*32 - 161*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-1,2,3,0,7,8-HxCDD	*09*		*28 - 134*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-1,2,3,6,7,8-HxCDF	*05*		*20 - 152*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-1,2,3,0,7,8-HxCDF	*76*		*20 - 123*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-1,2,3,7,8,9-HxCDF	*76*		*29 - 167*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-2,3,6,0,7,8-HxCDF	*75*		*28 - 130*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-1,2,3,6,0,7,8-HpCDD	*00*		*23 - 164*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-1,2,3,6,0,7,8-HpCDF	*55*		*28 - 163*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-1,2,3,6,7,8,9-HpCDF	*08*		*20 - 138*	*41/18/23 40:61*	*41/27/23 18:24*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-1
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-OCDD	*76*		*17 - 157*	*41/18/23 40:61*	*41/27/23 18:24*	*1*
13C-OCDF	*75*		*17 - 157*	*41/18/23 40:61*	*41/27/23 18:24*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*89*		*35 - 197*	*41/18/23 40:61*	*41/27/23 18:24*	*1*

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000029	ug/L		01/18/23 06:41	01/27/23 19:06	1
1,2,3,7,8-PeCDD	**0.00000049**	**J,DX**	0.000052	0.00000023	ug/L		01/18/23 06:41	01/27/23 19:06	1
1,2,3,7,8-PeCDF	**0.0000016**	**J,DX MB**	0.000052	0.00000017	ug/L		01/18/23 06:41	01/27/23 19:06	1
2,3,4,7,8-PeCDF	**0.00000048**	**J,DX MB**	0.000052	0.00000020	ug/L		01/18/23 06:41	01/27/23 19:06	1
1,2,3,4,7,8-HxCDD	**0.0000012**	**J,DX MB**	0.000052	0.00000026	ug/L		01/18/23 06:41	01/27/23 19:06	1
1,2,3,6,7,8-HxCDD	**0.00000048**	**J,DX q MB**	0.000052	0.00000027	ug/L		01/18/23 06:41	01/27/23 19:06	1
1,2,3,7,8,9-HxCDD	**0.00000053**	**J,DX MB**	0.000052	0.00000024	ug/L		01/18/23 06:41	01/27/23 19:06	1
1,2,3,4,7,8-HxCDF	**0.00000062**	**J,DX q MB**	0.000052	0.00000018	ug/L		01/18/23 06:41	01/27/23 19:06	1
1,2,3,6,7,8-HxCDF	**0.00000049**	**J,DX MB**	0.000052	0.00000017	ug/L		01/18/23 06:41	01/27/23 19:06	1
1,2,3,7,8,9-HxCDF	**0.0000026**	**J,DX MB**	0.000052	0.00000018	ug/L		01/18/23 06:41	01/27/23 19:06	1
2,3,4,6,7,8-HxCDF	**0.00000040**	**J,DX q MB**	0.000052	0.00000016	ug/L		01/18/23 06:41	01/27/23 19:06	1
1,2,3,4,6,7,8-HpCDD	**0.0000064**	**J,DX MB**	0.000052	0.00000049	ug/L		01/18/23 06:41	01/27/23 19:06	1
1,2,3,4,6,7,8-HpCDF	**0.0000018**	**J,DX q MB**	0.000052	0.00000020	ug/L		01/18/23 06:41	01/27/23 19:06	1
1,2,3,4,7,8,9-HpCDF	**0.00000052**	**J,DX q MB**	0.000052	0.00000022	ug/L		01/18/23 06:41	01/27/23 19:06	1
OCDD	**0.000046**	**J,DX MB**	0.00010	0.00000045	ug/L		01/18/23 06:41	01/27/23 19:06	1
OCDF	**0.0000038**	**J,DX MB**	0.00010	0.00000025	ug/L		01/18/23 06:41	01/27/23 19:06	1
Total TCDD	**0.0000036**	**J,DX q MB**	0.000010	0.00000029	ug/L		01/18/23 06:41	01/27/23 19:06	1
Total TCDF	**0.00000064**	**J,DX q**	0.000010	0.00000015	ug/L		01/18/23 06:41	01/27/23 19:06	1
Total PeCDD	**0.00000094**	**J,DX q**	0.000052	0.00000023	ug/L		01/18/23 06:41	01/27/23 19:06	1
Total PeCDF	**0.0000025**	**J,DX q MB**	0.000052	0.00000017	ug/L		01/18/23 06:41	01/27/23 19:06	1
Total HxCDD	**0.0000032**	**J,DX q MB**	0.000052	0.00000024	ug/L		01/18/23 06:41	01/27/23 19:06	1
Total HxCDF	**0.0000041**	**J,DX q MB**	0.000052	0.00000016	ug/L		01/18/23 06:41	01/27/23 19:06	1
Total HpCDD	**0.000013**	**J,DX MB**	0.000052	0.00000049	ug/L		01/18/23 06:41	01/27/23 19:06	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDF	**0.0000040**	**J,DX q MB**	0.000052	0.00000020	ug/L		01/18/23 06:41	01/27/23 19:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*09*		*25 - 106*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-2,3,7,8-TCDF	*73*		*26 - 109*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-1,2,3,7,8-PeCDD	*74*		*25 - 181*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*26 - 185*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-2,3,6,7,8-PeCDF	*74*		*21 - 178*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-1,2,3,6,7,8-HxCDD	*07*		*32 - 161*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-1,2,3,0,7,8-HxCDD	*73*		*28 - 134*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-1,2,3,6,7,8-HxCDF	*08*		*20 - 152*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-1,2,3,0,7,8-HxCDF	*77*		*20 - 123*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-1,2,3,7,8,9-HxCDF	*78*		*29 - 167*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-2,3,6,0,7,8-HxCDF	*84*		*28 - 130*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-1,2,3,6,0,7,8-HpCDD	*74*		*23 - 164*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-1,2,3,6,0,7,8-HpCDF	*09*		*28 - 163*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-1,2,3,6,7,8,9-HpCDF	*73*		*20 - 138*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-OCDD	*70*		*17 - 157*	*41/18/23 40:61*	*41/27/23 19:40*	*1*
13C-OCDF	*77*		*17 - 157*	*41/18/23 40:61*	*41/27/23 19:40*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*88*		*35 - 197*	*41/18/23 40:61*	*41/27/23 19:40*	*1*

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000030	ug/L		01/18/23 06:41	01/27/23 19:53	1
1,2,3,7,8-PeCDD	**0.0000011**	**J,DX q**	0.000053	0.00000040	ug/L		01/18/23 06:41	01/27/23 19:53	1
1,2,3,7,8-PeCDF	**0.0000016**	**J,DX MB**	0.000053	0.00000021	ug/L		01/18/23 06:41	01/27/23 19:53	1
2,3,4,7,8-PeCDF	**0.00000059**	**J,DX q MB**	0.000053	0.00000025	ug/L		01/18/23 06:41	01/27/23 19:53	1
1,2,3,4,7,8-HxCDD	**0.0000037**	**J,DX MB**	0.000053	0.00000068	ug/L		01/18/23 06:41	01/27/23 19:53	1
1,2,3,6,7,8-HxCDD	**0.0000031**	**J,DX q MB**	0.000053	0.00000067	ug/L		01/18/23 06:41	01/27/23 19:53	1
1,2,3,7,8,9-HxCDD	**0.0000041**	**J,DX MB**	0.000053	0.00000060	ug/L		01/18/23 06:41	01/27/23 19:53	1
1,2,3,4,7,8-HxCDF	**0.0000014**	**J,DX q MB**	0.000053	0.00000028	ug/L		01/18/23 06:41	01/27/23 19:53	1
1,2,3,6,7,8-HxCDF	**0.00000098**	**J,DX q MB**	0.000053	0.00000026	ug/L		01/18/23 06:41	01/27/23 19:53	1
1,2,3,7,8,9-HxCDF	**0.0000022**	**J,DX MB**	0.000053	0.00000025	ug/L		01/18/23 06:41	01/27/23 19:53	1
2,3,4,6,7,8-HxCDF	**0.0000011**	**J,DX q MB**	0.000053	0.00000024	ug/L		01/18/23 06:41	01/27/23 19:53	1
1,2,3,4,6,7,8-HpCDD	**0.000087**	**MB**	0.000053	0.0000037	ug/L		01/18/23 06:41	01/27/23 19:53	1
1,2,3,4,6,7,8-HpCDF	**0.000026**	**J,DX MB**	0.000053	0.00000066	ug/L		01/18/23 06:41	01/27/23 19:53	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,7,8,9-HpCDF	0.0000013	J,DX q MB	0.000053	0.00000070	ug/L		01/18/23 06:41	01/27/23 19:53	1
OCDD	0.00059	MB	0.00011	0.0000035	ug/L		01/18/23 06:41	01/27/23 19:53	1
OCDF	0.000066	J,DX MB	0.00011	0.00000055	ug/L		01/18/23 06:41	01/27/23 19:53	1
Total TCDD	0.0000041	J,DX q MB	0.000011	0.00000030	ug/L		01/18/23 06:41	01/27/23 19:53	1
Total TCDF	0.00000056	J,DX	0.000011	0.00000016	ug/L		01/18/23 06:41	01/27/23 19:53	1
Total PeCDD	0.0000011	J,DX q	0.000053	0.00000040	ug/L		01/18/23 06:41	01/27/23 19:53	1
Total PeCDF	0.0000055	J,DX q MB	0.000053	0.00000021	ug/L		01/18/23 06:41	01/27/23 19:53	1
Total HxCDD	0.000027	J,DX q MB	0.000053	0.00000060	ug/L		01/18/23 06:41	01/27/23 19:53	1
Total HxCDF	0.000021	J,DX q MB	0.000053	0.00000024	ug/L		01/18/23 06:41	01/27/23 19:53	1
Total HpCDD	0.00022	MB	0.000053	0.0000037	ug/L		01/18/23 06:41	01/27/23 19:53	1
Total HpCDF	0.000057	J,DX MB q	0.000053	0.00000066	ug/L		01/18/23 06:41	01/27/23 19:53	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*00*		*25 - 106*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-2,3,7,8-TCDF	*06*		*26 - 109*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-1,2,3,7,8-PeCDD	*58*		*25 - 181*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-1,2,3,7,8-PeCDF	*04*		*26 - 185*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-2,3,6,7,8-PeCDF	*50*		*21 - 178*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-1,2,3,6,7,8-HxCDD	*57*		*32 - 161*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-1,2,3,0,7,8-HxCDD	*04*		*28 - 134*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-1,2,3,6,7,8-HxCDF	*57*		*20 - 152*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-1,2,3,0,7,8-HxCDF	*06*		*20 - 123*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-1,2,3,7,8,9-HxCDF	*71*		*29 - 167*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-2,3,6,0,7,8-HxCDF	*07*		*28 - 130*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-1,2,3,6,0,7,8-HpCDD	*04*		*23 - 164*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-1,2,3,6,0,7,8-HpCDF	*57*		*28 - 163*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-1,2,3,6,7,8,9-HpCDF	*06*		*20 - 138*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-OCDD	*08*		*17 - 157*	*41/18/23 40:61*	*41/27/23 19:53*	*1*
13C-OCDF	*07*		*17 - 157*	*41/18/23 40:61*	*41/27/23 19:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*86*		*35 - 197*	*41/18/23 40:61*	*41/27/23 19:53*	*1*

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000048	ug/L		01/18/23 06:41	01/27/23 20:39	1
1,2,3,7,8-PeCDD	0.0000015	J,DX	0.000051	0.00000036	ug/L		01/18/23 06:41	01/27/23 20:39	1
1,2,3,7,8-PeCDF	0.0000016	J,DX q MB	0.000051	0.00000022	ug/L		01/18/23 06:41	01/27/23 20:39	1
2,3,4,7,8-PeCDF	0.00000065	J,DX q MB	0.000051	0.00000028	ug/L		01/18/23 06:41	01/27/23 20:39	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,7,8-HxCDD	0.0000048	J,DX MB	0.000051	0.00000068	ug/L		01/18/23 06:41	01/27/23 20:39	1
1,2,3,6,7,8-HxCDD	0.0000053	J,DX MB	0.000051	0.00000063	ug/L		01/18/23 06:41	01/27/23 20:39	1
1,2,3,7,8,9-HxCDD	0.0000068	J,DX MB	0.000051	0.00000058	ug/L		01/18/23 06:41	01/27/23 20:39	1
1,2,3,4,7,8-HxCDF	0.0000020	J,DX q MB	0.000051	0.00000032	ug/L		01/18/23 06:41	01/27/23 20:39	1
1,2,3,6,7,8-HxCDF	0.0000017	J,DX MB	0.000051	0.00000028	ug/L		01/18/23 06:41	01/27/23 20:39	1
1,2,3,7,8,9-HxCDF	0.0000025	J,DX MB	0.000051	0.00000021	ug/L		01/18/23 06:41	01/27/23 20:39	1
2,3,4,6,7,8-HxCDF	0.0000010	J,DX q MB	0.000051	0.00000019	ug/L		01/18/23 06:41	01/27/23 20:39	1
1,2,3,4,6,7,8-HpCDD	0.00011	MB	0.000051	0.0000051	ug/L		01/18/23 06:41	01/27/23 20:39	1
1,2,3,4,6,7,8-HpCDF	0.000028	J,DX MB	0.000051	0.00000095	ug/L		01/18/23 06:41	01/27/23 20:39	1
1,2,3,4,7,8,9-HpCDF	0.0000021	J,DX MB	0.000051	0.00000077	ug/L		01/18/23 06:41	01/27/23 20:39	1
OCDD	0.0010	MB	0.00010	0.0000059	ug/L		01/18/23 06:41	01/27/23 20:39	1
OCDF	0.000043	J,DX MB	0.00010	0.00000033	ug/L		01/18/23 06:41	01/27/23 20:39	1
Total TCDD	ND		0.000010	0.00000048	ug/L		01/18/23 06:41	01/27/23 20:39	1
Total TCDF	0.0000019	J,DX q	0.000010	0.00000015	ug/L		01/18/23 06:41	01/27/23 20:39	1
Total PeCDD	0.0000015	J,DX	0.000051	0.00000036	ug/L		01/18/23 06:41	01/27/23 20:39	1
Total PeCDF	0.0000031	J,DX q MB	0.000051	0.00000022	ug/L		01/18/23 06:41	01/27/23 20:39	1
Total HxCDD	0.000041	J,DX MB	0.000051	0.00000058	ug/L		01/18/23 06:41	01/27/23 20:39	1
Total HxCDF	0.000019	J,DX q MB	0.000051	0.00000019	ug/L		01/18/23 06:41	01/27/23 20:39	1
Total HpCDD	0.00032	MB	0.000051	0.0000051	ug/L		01/18/23 06:41	01/27/23 20:39	1
Total HpCDF	0.000071	J,DX MB	0.000051	0.00000077	ug/L		01/18/23 06:41	01/27/23 20:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*00*		*25 - 106*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-2,3,7,8-TCDF	*71*		*26 - 109*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-1,2,3,7,8-PeCDD	*06*		*25 - 181*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-1,2,3,7,8-PeCDF	*07*		*26 - 185*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-2,3,6,7,8-PeCDF	*59*		*21 - 178*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-1,2,3,6,7,8-HxCDD	*51*		*32 - 161*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-1,2,3,0,7,8-HxCDD	*57*		*28 - 134*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-1,2,3,6,7,8-HxCDF	*66*		*20 - 152*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-1,2,3,0,7,8-HxCDF	*56*		*20 - 123*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-1,2,3,7,8,9-HxCDF	*78*		*29 - 167*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-2,3,6,0,7,8-HxCDF	*77*		*28 - 130*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-1,2,3,6,0,7,8-HpCDD	*09*		*23 - 164*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-1,2,3,6,0,7,8-HpCDF	*52*		*28 - 163*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-1,2,3,6,7,8,9-HpCDF	*76*		*20 - 138*	*41/18/23 40:61*	*41/27/23 24:39*	*1*
13C-OCDD	*79*		*17 - 157*	*41/18/23 40:61*	*41/27/23 24:39*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	79		17 - 157	41/18/23 40:61	41/27/23 24:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	80		35 - 197	41/18/23 40:61	41/27/23 24:39	1

Client Sample ID: B1BMP0011_20230104
Date Collected: 01/04/23 08:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-5
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000029	ug/L		01/18/23 06:41	01/27/23 21:26	1
1,2,3,7,8-PeCDD	**0.00000052**	**J,DX q**	0.000053	0.00000026	ug/L		01/18/23 06:41	01/27/23 21:26	1
1,2,3,7,8-PeCDF	**0.0000020**	**J,DX MB**	0.000053	0.00000016	ug/L		01/18/23 06:41	01/27/23 21:26	1
2,3,4,7,8-PeCDF	**0.00000041**	**J,DX MB**	0.000053	0.00000019	ug/L		01/18/23 06:41	01/27/23 21:26	1
1,2,3,4,7,8-HxCDD	**0.0000025**	**J,DX MB**	0.000053	0.00000043	ug/L		01/18/23 06:41	01/27/23 21:26	1
1,2,3,6,7,8-HxCDD	**0.0000019**	**J,DX MB**	0.000053	0.00000040	ug/L		01/18/23 06:41	01/27/23 21:26	1
1,2,3,7,8,9-HxCDD	**0.0000021**	**J,DX MB**	0.000053	0.00000036	ug/L		01/18/23 06:41	01/27/23 21:26	1
1,2,3,4,7,8-HxCDF	**0.00000093**	**J,DX MB**	0.000053	0.00000020	ug/L		01/18/23 06:41	01/27/23 21:26	1
1,2,3,6,7,8-HxCDF	**0.00000091**	**J,DX MB**	0.000053	0.00000018	ug/L		01/18/23 06:41	01/27/23 21:26	1
1,2,3,7,8,9-HxCDF	**0.0000023**	**J,DX q MB**	0.000053	0.00000018	ug/L		01/18/23 06:41	01/27/23 21:26	1
2,3,4,6,7,8-HxCDF	**0.00000054**	**J,DX q MB**	0.000053	0.00000016	ug/L		01/18/23 06:41	01/27/23 21:26	1
1,2,3,4,6,7,8-HpCDD	**0.000038**	**J,DX MB**	0.000053	0.0000016	ug/L		01/18/23 06:41	01/27/23 21:26	1
1,2,3,4,6,7,8-HpCDF	**0.000013**	**J,DX MB**	0.000053	0.00000049	ug/L		01/18/23 06:41	01/27/23 21:26	1
1,2,3,4,7,8,9-HpCDF	**0.0000011**	**J,DX MB**	0.000053	0.00000051	ug/L		01/18/23 06:41	01/27/23 21:26	1
OCDD	**0.00031**	**MB**	0.00011	0.0000016	ug/L		01/18/23 06:41	01/27/23 21:26	1
OCDF	**0.000031**	**J,DX MB**	0.00011	0.00000031	ug/L		01/18/23 06:41	01/27/23 21:26	1
Total TCDD	**0.0000021**	**J,DX q MB**	0.000011	0.00000029	ug/L		01/18/23 06:41	01/27/23 21:26	1
Total TCDF	**0.00000054**	**J,DX**	0.000011	0.00000015	ug/L		01/18/23 06:41	01/27/23 21:26	1
Total PeCDD	**0.00000052**	**J,DX q**	0.000053	0.00000026	ug/L		01/18/23 06:41	01/27/23 21:26	1
Total PeCDF	**0.0000033**	**J,DX q MB**	0.000053	0.00000016	ug/L		01/18/23 06:41	01/27/23 21:26	1
Total HxCDD	**0.000015**	**J,DX q MB**	0.000053	0.00000036	ug/L		01/18/23 06:41	01/27/23 21:26	1
Total HxCDF	**0.000011**	**J,DX q MB**	0.000053	0.00000016	ug/L		01/18/23 06:41	01/27/23 21:26	1
Total HpCDD	**0.00010**	**MB**	0.000053	0.0000016	ug/L		01/18/23 06:41	01/27/23 21:26	1
Total HpCDF	**0.000030**	**J,DX MB**	0.000053	0.00000049	ug/L		01/18/23 06:41	01/27/23 21:26	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	00		25 - 106	41/18/23 40:61	41/27/23 21:20	1
13C-2,3,7,8-TCDF	08		26 - 109	41/18/23 40:61	41/27/23 21:20	1
13C-1,2,3,7,8-PeCDD	02		25 - 181	41/18/23 40:61	41/27/23 21:20	1
13C-1,2,3,7,8-PeCDF	00		26 - 185	41/18/23 40:61	41/27/23 21:20	1
13C-2,3,6,7,8-PeCDF	59		21 - 178	41/18/23 40:61	41/27/23 21:20	1
13C-1,2,3,6,7,8-HxCDD	58		32 - 161	41/18/23 40:61	41/27/23 21:20	1
13C-1,2,3,0,7,8-HxCDD	01		28 - 134	41/18/23 40:61	41/27/23 21:20	1
13C-1,2,3,6,7,8-HxCDF	57		20 - 152	41/18/23 40:61	41/27/23 21:20	1
13C-1,2,3,0,7,8-HxCDF	00		20 - 123	41/18/23 40:61	41/27/23 21:20	1
13C-1,2,3,7,8,9-HxCDF	76		29 - 167	41/18/23 40:61	41/27/23 21:20	1
13C-2,3,6,0,7,8-HxCDF	73		28 - 130	41/18/23 40:61	41/27/23 21:20	1
13C-1,2,3,6,0,7,8-HpCDD	00		23 - 164	41/18/23 40:61	41/27/23 21:20	1
13C-1,2,3,6,0,7,8-HpCDF	01		28 - 163	41/18/23 40:61	41/27/23 21:20	1
13C-1,2,3,6,7,8,9-HpCDF	71		20 - 138	41/18/23 40:61	41/27/23 21:20	1
13C-OCDD	76		17 - 157	41/18/23 40:61	41/27/23 21:20	1
13C-OCDF	76		17 - 157	41/18/23 40:61	41/27/23 21:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	87		35 - 197	41/18/23 40:61	41/27/23 21:20	1

Client Sample ID: ILBMP0002_20230104
Date Collected: 01/04/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-6
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000029	ug/L		01/18/23 06:41	01/27/23 22:12	1
1,2,3,7,8-PeCDD	**0.00000043**	**J,DX q**	0.000053	0.00000023	ug/L		01/18/23 06:41	01/27/23 22:12	1
1,2,3,7,8-PeCDF	**0.0000015**	**J,DX MB**	0.000053	0.00000018	ug/L		01/18/23 06:41	01/27/23 22:12	1
2,3,4,7,8-PeCDF	**0.00000031**	**J,DX q MB**	0.000053	0.00000021	ug/L		01/18/23 06:41	01/27/23 22:12	1
1,2,3,4,7,8-HxCDD	**0.0000023**	**J,DX MB**	0.000053	0.00000034	ug/L		01/18/23 06:41	01/27/23 22:12	1
1,2,3,6,7,8-HxCDD	**0.0000013**	**J,DX MB**	0.000053	0.00000034	ug/L		01/18/23 06:41	01/27/23 22:12	1
1,2,3,7,8,9-HxCDD	**0.00000079**	**J,DX MB**	0.000053	0.00000030	ug/L		01/18/23 06:41	01/27/23 22:12	1
1,2,3,4,7,8-HxCDF	**0.00000077**	**J,DX MB**	0.000053	0.00000020	ug/L		01/18/23 06:41	01/27/23 22:12	1
1,2,3,6,7,8-HxCDF	**0.00000054**	**J,DX MB**	0.000053	0.00000019	ug/L		01/18/23 06:41	01/27/23 22:12	1
1,2,3,7,8,9-HxCDF	**0.0000021**	**J,DX MB**	0.000053	0.00000018	ug/L		01/18/23 06:41	01/27/23 22:12	1
2,3,4,6,7,8-HxCDF	**0.00000028**	**J,DX q MB**	0.000053	0.00000018	ug/L		01/18/23 06:41	01/27/23 22:12	1
1,2,3,4,6,7,8-HpCDD	**0.000034**	**J,DX MB**	0.000053	0.0000013	ug/L		01/18/23 06:41	01/27/23 22:12	1
1,2,3,4,6,7,8-HpCDF	**0.0000047**	**J,DX MB**	0.000053	0.00000030	ug/L		01/18/23 06:41	01/27/23 22:12	1
1,2,3,4,7,8,9-HpCDF	**0.00000061**	**J,DX q MB**	0.000053	0.00000032	ug/L		01/18/23 06:41	01/27/23 22:12	1
OCDD	**0.00021**	**MB**	0.00011	0.0000013	ug/L		01/18/23 06:41	01/27/23 22:12	1
OCDF	**0.000012**	**J,DX MB**	0.00011	0.00000025	ug/L		01/18/23 06:41	01/27/23 22:12	1
Total TCDD	**0.0000031**	**J,DX q MB**	0.000011	0.00000029	ug/L		01/18/23 06:41	01/27/23 22:12	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: ILBMP0002_20230104
Date Collected: 01/04/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-6
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDF	**0.00000085**	**J,DX q**	0.000011	0.00000018	ug/L		01/18/23 06:41	01/27/23 22:12	1
Total PeCDD	**0.00000043**	**J,DX q**	0.000053	0.00000023	ug/L		01/18/23 06:41	01/27/23 22:12	1
Total PeCDF	**0.0000034**	**J,DX q MB**	0.000053	0.00000018	ug/L		01/18/23 06:41	01/27/23 22:12	1
Total HxCDD	**0.0000098**	**J,DX MB**	0.000053	0.00000030	ug/L		01/18/23 06:41	01/27/23 22:12	1
Total HxCDF	**0.0000074**	**J,DX q MB**	0.000053	0.00000018	ug/L		01/18/23 06:41	01/27/23 22:12	1
Total HpCDD	**0.000064**	**MB**	0.000053	0.0000013	ug/L		01/18/23 06:41	01/27/23 22:12	1
Total HpCDF	**0.000010**	**J,DX q MB**	0.000053	0.00000030	ug/L		01/18/23 06:41	01/27/23 22:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*05*		*25 - 106*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-2,3,7,8-TCDF	*07*		*26 - 109*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-1,2,3,7,8-PeCDD	*02*		*25 - 181*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-1,2,3,7,8-PeCDF	*06*		*26 - 185*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-2,3,6,7,8-PeCDF	*02*		*21 - 178*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-1,2,3,6,7,8-HxCDD	*01*		*32 - 161*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-1,2,3,0,7,8-HxCDD	*05*		*28 - 134*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-1,2,3,6,7,8-HxCDF	*01*		*20 - 152*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-1,2,3,0,7,8-HxCDF	*74*		*20 - 123*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-1,2,3,7,8,9-HxCDF	*76*		*29 - 167*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-2,3,6,0,7,8-HxCDF	*71*		*28 - 130*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-1,2,3,6,0,7,8-HpCDD	*06*		*23 - 164*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-1,2,3,6,0,7,8-HpCDF	*02*		*28 - 163*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-1,2,3,6,7,8,9-HpCDF	*09*		*20 - 138*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-OCDD	*73*		*17 - 157*	*41/18/23 40:61*	*41/27/23 22:12*	*1*
13C-OCDF	*72*		*17 - 157*	*41/18/23 40:61*	*41/27/23 22:12*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*88*		*35 - 197*	*41/18/23 40:61*	*41/27/23 22:12*	*1*

Client Sample ID: EPNDSW04_20230104
Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-7
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000097	0.00000022	ug/L		01/13/23 05:53	01/28/23 06:11	1
1,2,3,7,8-PeCDD	**0.0000011**	**J,DX MB**	0.000049	0.00000021	ug/L		01/13/23 05:53	01/28/23 06:11	1
1,2,3,7,8-PeCDF	**0.0000018**	**J,DX MB**	0.000049	0.00000016	ug/L		01/13/23 05:53	01/28/23 06:11	1
2,3,4,7,8-PeCDF	**0.0000011**	**J,DX MB**	0.000049	0.00000021	ug/L		01/13/23 05:53	01/28/23 06:11	1
1,2,3,4,7,8-HxCDD	**0.0000017**	**J,DX MB**	0.000049	0.00000028	ug/L		01/13/23 05:53	01/28/23 06:11	1
1,2,3,6,7,8-HxCDD	**0.0000012**	**J,DX MB**	0.000049	0.00000025	ug/L		01/13/23 05:53	01/28/23 06:11	1
1,2,3,7,8,9-HxCDD	**0.0000016**	**J,DX MB**	0.000049	0.00000023	ug/L		01/13/23 05:53	01/28/23 06:11	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPNDSW04_20230104
Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-7
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,4,7,8-HxCDF	0.0000011	J,DX MB	0.000049	0.00000023	ug/L		01/13/23 05:53	01/28/23 06:11	1
1,2,3,6,7,8-HxCDF	0.0000013	J,DX MB	0.000049	0.00000021	ug/L		01/13/23 05:53	01/28/23 06:11	1
1,2,3,7,8,9-HxCDF	0.0000029	J,DX MB	0.000049	0.00000015	ug/L		01/13/23 05:53	01/28/23 06:11	1
2,3,4,6,7,8-HxCDF	0.0000010	J,DX MB	0.000049	0.00000015	ug/L		01/13/23 05:53	01/28/23 06:11	1
1,2,3,4,6,7,8-HpCDD	0.0000033	J,DX MB	0.000049	0.00000023	ug/L		01/13/23 05:53	01/28/23 06:11	1
1,2,3,4,6,7,8-HpCDF	0.0000019	J,DX MB q	0.000049	0.00000021	ug/L		01/13/23 05:53	01/28/23 06:11	1
1,2,3,4,7,8,9-HpCDF	0.0000013	J,DX MB q	0.000049	0.00000019	ug/L		01/13/23 05:53	01/28/23 06:11	1
OCDD	0.000017	J,DX MB	0.000097	0.00000044	ug/L		01/13/23 05:53	01/28/23 06:11	1
OCDF	0.0000043	J,DX MB	0.000097	0.00000018	ug/L		01/13/23 05:53	01/28/23 06:11	1
Total TCDD	0.00000046	J,DX q	0.0000097	0.00000022	ug/L		01/13/23 05:53	01/28/23 06:11	1
Total TCDF	0.00000063	J,DX MB	0.0000097	0.00000009 0	ug/L		01/13/23 05:53	01/28/23 06:11	1
Total PeCDD	0.0000011	J,DX MB	0.000049	0.00000021	ug/L		01/13/23 05:53	01/28/23 06:11	1
Total PeCDF	0.0000029	J,DX MB	0.000049	0.00000016	ug/L		01/13/23 05:53	01/28/23 06:11	1
Total HxCDD	0.0000053	J,DX MB q	0.000049	0.00000023	ug/L		01/13/23 05:53	01/28/23 06:11	1
Total HxCDF	0.0000067	J,DX MB q	0.000049	0.00000015	ug/L		01/13/23 05:53	01/28/23 06:11	1
Total HpCDD	0.0000062	J,DX MB	0.000049	0.00000023	ug/L		01/13/23 05:53	01/28/23 06:11	1
Total HpCDF	0.0000037	J,DX MB q	0.000049	0.00000019	ug/L		01/13/23 05:53	01/28/23 06:11	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*84*		*25 - 106*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-2,3,7,8-TCDF	*86*		*26 - 109*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-1,2,3,7,8-PeCDD	*08*		*25 - 181*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-1,2,3,7,8-PeCDF	*73*		*26 - 185*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-2,3,6,7,8-PeCDF	*06*		*21 - 178*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-1,2,3,6,7,8-HxCDD	*55*		*32 - 161*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-1,2,3,0,7,8-HxCDD	*08*		*28 - 134*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-1,2,3,6,7,8-HxCDF	*54*		*20 - 152*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-1,2,3,0,7,8-HxCDF	*59*		*20 - 123*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-1,2,3,7,8,9-HxCDF	*85*		*29 - 167*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-2,3,6,0,7,8-HxCDF	*86*		*28 - 130*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-1,2,3,6,0,7,8-HpCDD	*76*		*23 - 164*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-1,2,3,6,0,7,8-HpCDF	*02*		*28 - 163*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-1,2,3,6,7,8,9-HpCDF	*81*		*20 - 138*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-OCDD	*93*		*17 - 157*	*41/13/23 45:53*	*41/28/23 40:11*	*1*
13C-OCDF	*80*		*17 - 157*	*41/13/23 45:53*	*41/28/23 40:11*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*92*		*35 - 197*	*41/13/23 45:53*	*41/28/23 40:11*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000094	0.00000083	ug/L		01/18/23 06:41	02/02/23 19:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*06*		*26 - 109*	*41/18/23 40:61*	*42/42/23 19:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*146*		*35 - 197*	*41/18/23 40:61*	*42/42/23 19:56*	*1*

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.0000013	ug/L		01/18/23 06:41	02/02/23 20:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*00*		*26 - 109*	*41/18/23 40:61*	*42/42/23 24:31*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*97*		*35 - 197*	*41/18/23 40:61*	*42/42/23 24:31*	*1*

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000011	0.00000099	ug/L		01/18/23 06:41	02/02/23 21:08	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*58*		*26 - 109*	*41/18/23 40:61*	*42/42/23 21:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*97*		*35 - 197*	*41/18/23 40:61*	*42/42/23 21:48*	*1*

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.0000010	ug/L		01/18/23 06:41	02/02/23 21:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*06*		*26 - 109*	*41/18/23 40:61*	*42/42/23 21:65*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*95*		*35 - 197*	*41/18/23 40:61*	*42/42/23 21:65*	*1*

Client Sample ID: B1BMP0011_20230104
Date Collected: 01/04/23 08:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-5
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000011	0.00000064	ug/L		01/18/23 06:41	02/02/23 22:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*03*		*26 - 109*	*41/18/23 40:61*	*42/42/23 22:22*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*142*		*35 - 197*	*41/18/23 40:61*	*42/42/23 22:22*	*1*

Client Sample ID: ILBMP0002_20230104 — **Lab Sample ID: 570-122995-6**
Date Collected: 01/04/23 10:15 — **Matrix: Water**
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000011	0.00000078	ug/L		01/18/23 06:41	02/02/23 22:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*03*		*26 - 109*	*41/18/23 40:61*	*42/42/23 22:59*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*146*		*35 - 197*	*41/18/23 40:61*	*42/42/23 22:59*	*1*

Client Sample ID: EPNDSW04_20230104 — **Lab Sample ID: 570-122995-7**
Date Collected: 01/04/23 07:30 — **Matrix: Water**
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000097	0.00000042	ug/L		01/13/23 05:53	02/03/23 09:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*76*		*26 - 109*	*41/13/23 45:53*	*42/43/23 49:30*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*147*		*35 - 197*	*41/13/23 45:53*	*42/43/23 49:30*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (35-197)**
570-122995-1	A1BMP0002_20230104	89
570-122995-1 - RA	A1BMP0002_20230104	104
570-122995-2	A1BMP0003_20230104	88
570-122995-2 - RA	A1BMP0003_20230104	97
570-122995-3	B1BMP0009_20230104	84
570-122995-3 - RA	B1BMP0009_20230104	97
570-122995-4	B1BMP0010_20230104	86
570-122995-4 - RA	B1BMP0010_20230104	95
570-122995-5	B1BMP0011_20230104	87
570-122995-5 - RA	B1BMP0011_20230104	102
570-122995-6	ILBMP0002_20230104	88
570-122995-6 - RA	ILBMP0002_20230104	104
570-122995-7	EPNDSW04_20230104	92
570-122995-7 - RA	EPNDSW04_20230104	107
MB 320-646691/1-A	Method Blank	90
MB 320-646691/1-A - RA	Method Blank	109
MB 320-647724/1-A	Method Blank	90

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (31-191)**
LCS 320-646691/2-A	Lab Control Sample	91
LCS 320-647724/2-A	Lab Control Sample	85
LCSD 320-646691/3-A	Lab Control Sample Dup	93
LCSD 320-647724/3-A	Lab Control Sample Dup	87

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-122995-1	A1BMP0002_20230104	66	70	65	68	67	66	69	65
570-122995-1 - RA	A1BMP0002_20230104		64						
570-122995-2	A1BMP0003_20230104	69	73	70	72	70	67	73	68
570-122995-2 - RA	A1BMP0003_20230104		66						
570-122995-3	B1BMP0009_20230104	66	64	58	60	56	57	60	57
570-122995-3 - RA	B1BMP0009_20230104		58						
570-122995-4	B1BMP0010_20230104	66	71	64	67	59	51	57	44
570-122995-4 - RA	B1BMP0010_20230104		64						
570-122995-5	B1BMP0011_20230104	66	68	62	66	59	58	61	57
570-122995-5 - RA	B1BMP0011_20230104		63						
570-122995-6	ILBMP0002_20230104	65	67	62	64	62	61	65	61
570-122995-6 - RA	ILBMP0002_20230104		63						
570-122995-7	EPNDSW04_20230104	80	84	68	73	64	55	68	50
570-122995-7 - RA	EPNDSW04_20230104		74						
MB 320-646691/1-A	Method Blank	74	76	56	61	52	41	51	35
MB 320-646691/1-A - RA	Method Blank		69						
MB 320-647724/1-A	Method Blank	53	56	52	53	55	55	57	54

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-122995-1	A1BMP0002_20230104	74	74	75	66	55	68	74	75
570-122995-1 - RA	A1BMP0002_20230104								
570-122995-2	A1BMP0003_20230104	77	78	80	70	69	73	76	77
570-122995-2 - RA	A1BMP0003_20230104								
570-122995-3	B1BMP0009_20230104	64	71	67	60	57	64	68	67
570-122995-3 - RA	B1BMP0009_20230104								
570-122995-4	B1BMP0010_20230104	54	78	77	69	52	74	79	79
570-122995-4 - RA	B1BMP0010_20230104								
570-122995-5	B1BMP0011_20230104	66	74	73	66	61	71	74	74
570-122995-5 - RA	B1BMP0011_20230104								
570-122995-6	ILBMP0002_20230104	70	74	71	64	62	69	73	72
570-122995-6 - RA	ILBMP0002_20230104								
570-122995-7	EPNDSW04_20230104	59	85	84	74	62	81	93	86
570-122995-7 - RA	EPNDSW04_20230104								
MB 320-646691/1-A	Method Blank	45	78	72	65	46	72	85	77
MB 320-646691/1-A - RA	Method Blank								
MB 320-647724/1-A	Method Blank	61	58	62	50	52	53	54	54

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122995-2
Project/Site: Boeing SSFL ISRA and BMP

HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-646691/2-A	Lab Control Sample	75	78	61	65	56	45	56	41
LCS 320-647724/2-A	Lab Control Sample	54	58	53	55	55	54	57	53
LCSD 320-646691/3-A	Lab Control Sample Dup	79	82	65	68	61	51	60	44
LCSD 320-647724/3-A	Lab Control Sample Dup	55	60	52	54	55	50	55	51

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-646691/2-A	Lab Control Sample	48	80	75	69	52	75	90	83
LCS 320-647724/2-A	Lab Control Sample	61	59	62	51	52	54	56	56
LCSD 320-646691/3-A	Lab Control Sample Dup	53	85	81	73	56	79	96	87
LCSD 320-647724/3-A	Lab Control Sample Dup	57	56	59	50	50	52	54	54

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-646691/1-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 646691

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000027	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8-PeCDD	0.00000109	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8-PeCDF	0.00000239	J,DX	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1
2,3,4,7,8-PeCDF	0.00000133	J,DX	0.000050	0.00000028	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,7,8-HxCDD	0.00000338	J,DX	0.000050	0.00000053	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,6,7,8-HxCDD	0.00000160	J,DX	0.000050	0.00000045	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8,9-HxCDD	0.00000210	J,DX	0.000050	0.00000043	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,7,8-HxCDF	0.00000258	J,DX	0.000050	0.00000034	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,6,7,8-HxCDF	0.00000147	J,DX	0.000050	0.00000028	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8,9-HxCDF	0.00000327	J,DX	0.000050	0.00000017	ug/L		01/13/23 05:53	01/28/23 03:52	1
2,3,4,6,7,8-HxCDF	0.000000951	J,DX	0.000050	0.00000017	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,6,7,8-HpCDD	0.00000236	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,6,7,8-HpCDF	0.00000235	J,DX q	0.000050	0.00000030	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,7,8,9-HpCDF	0.00000153	J,DX	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1
OCDD	0.00000763	J,DX	0.00010	0.00000023	ug/L		01/13/23 05:53	01/28/23 03:52	1
OCDF	0.00000335	J,DX	0.00010	0.00000020	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total TCDD	ND		0.000010	0.00000027	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total TCDF	0.00000123	J,DX q	0.000010	0.00000013	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total PeCDD	0.00000109	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total PeCDF	0.00000405	J,DX q	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HxCDD	0.00000708	J,DX	0.000050	0.00000043	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HxCDF	0.00000931	J,DX	0.000050	0.00000017	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HpCDD	0.00000448	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HpCDF	0.00000388	J,DX q	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*25 - 164*	*01/13/23 05:53*	*01/28/23 03:52*	*1*
13C-2,3,7,8-TCDF	*76*		*24 - 169*	*01/13/23 05:53*	*01/28/23 03:52*	*1*
13C-1,2,3,7,8-PeCDD	*56*		*25 - 181*	*01/13/23 05:53*	*01/28/23 03:52*	*1*
13C-1,2,3,7,8-PeCDF	*61*		*24 - 185*	*01/13/23 05:53*	*01/28/23 03:52*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-646691/1-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 646691

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	52		21 - 178	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,7,8-HxCDD	41		32 - 141	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,6,7,8-HxCDD	51		28 - 130	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,7,8-HxCDF	35		26 - 152	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,6,7,8-HxCDF	45		26 - 123	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,7,8,9-HxCDF	78		29 - 147	01/13/23 05:53	01/28/23 03:52	1
13C-2,3,4,6,7,8-HxCDF	72		28 - 136	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,6,7,8-HpCDD	65		23 - 140	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,6,7,8-HpCDF	46		28 - 143	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,7,8,9-HpCDF	72		26 - 138	01/13/23 05:53	01/28/23 03:52	1
13C-OCDD	85		17 - 157	01/13/23 05:53	01/28/23 03:52	1
13C-OCDF	77		17 - 157	01/13/23 05:53	01/28/23 03:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	90		35 - 197	01/13/23 05:53	01/28/23 03:52	1

Lab Sample ID: LCS 320-646691/2-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 646691

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000214		ug/L		107	67 - 158		
2,3,7,8-TCDF			0.000200	0.000217	MB	ug/L		109	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.00111	MB	ug/L		111	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.00111	MB	ug/L		111	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.00114	MB	ug/L		114	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.00107	MB	ug/L		107	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00104	MB	ug/L		104	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.00153	MB	ug/L		153	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.00111	MB	ug/L		111	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.00108	MB	ug/L		108	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.00109	MB	ug/L		109	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00105	MB	ug/L		105	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.00111	MB	ug/L		111	78 - 138		
OCDD			0.00200	0.00201	MB	ug/L		100	78 - 144		
OCDF			0.00200	0.00225	MB	ug/L		113	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	75		20 - 175
13C-2,3,7,8-TCDF	78		22 - 152
13C-1,2,3,7,8-PeCDD	61		21 - 227
13C-1,2,3,7,8-PeCDF	65		21 - 192
13C-2,3,4,7,8-PeCDF	56		13 - 328
13C-1,2,3,4,7,8-HxCDD	45		21 - 193
13C-1,2,3,6,7,8-HxCDD	56		25 - 163
13C-1,2,3,4,7,8-HxCDF	41		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-646691/2-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 646691

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	48		21 - 159
13C-1,2,3,7,8,9-HxCDF	80		17 - 205
13C-2,3,4,6,7,8-HxCDF	75		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	69		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	52		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	75		20 - 186
13C-OCDD	90		13 - 199
13C-OCDF	83		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	91		31 - 191

Lab Sample ID: LCSD 320-646691/3-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 646691

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000211		ug/L		105	67 - 158	1	50
2,3,7,8-TCDF			0.000200	0.000216	MB	ug/L		108	75 - 158	1	50
1,2,3,7,8-PeCDD			0.00100	0.00109	MB	ug/L		109	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.00110	MB	ug/L		110	80 - 134	1	50
2,3,4,7,8-PeCDF			0.00100	0.00112	MB	ug/L		112	68 - 160	2	50
1,2,3,4,7,8-HxCDD			0.00100	0.00105	MB	ug/L		105	70 - 164	1	50
1,2,3,6,7,8-HxCDD			0.00100	0.00103	MB	ug/L		103	76 - 134	2	50
1,2,3,7,8,9-HxCDD			0.00100	0.00145	MB	ug/L		145	64 - 162	5	50
1,2,3,4,7,8-HxCDF			0.00100	0.00108	MB	ug/L		108	72 - 134	1	50
1,2,3,6,7,8-HxCDF			0.00100	0.00110	MB	ug/L		110	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00107	MB	ug/L		107	78 - 130	1	50
2,3,4,6,7,8-HxCDF			0.00100	0.00108	MB	ug/L		108	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00107	MB	ug/L		107	70 - 140	2	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00104	MB	ug/L		104	82 - 122	0	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00109	MB	ug/L		109	78 - 138	2	50
OCDD			0.00200	0.00196	MB	ug/L		98	78 - 144	2	50
OCDF			0.00200	0.00222	MB	ug/L		111	63 - 170	1	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	79		20 - 175
13C-2,3,7,8-TCDF	82		22 - 152
13C-1,2,3,7,8-PeCDD	65		21 - 227
13C-1,2,3,7,8-PeCDF	68		21 - 192
13C-2,3,4,7,8-PeCDF	61		13 - 328
13C-1,2,3,4,7,8-HxCDD	51		21 - 193
13C-1,2,3,6,7,8-HxCDD	60		25 - 163
13C-1,2,3,4,7,8-HxCDF	44		19 - 202
13C-1,2,3,6,7,8-HxCDF	53		21 - 159
13C-1,2,3,7,8,9-HxCDF	85		17 - 205
13C-2,3,4,6,7,8-HxCDF	81		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	73		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-646691/3-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 646691

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	56		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	96		13 - 199
13C-OCDF	87		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	93		31 - 191

Lab Sample ID: MB 320-647724/1-A
Matrix: Water
Analysis Batch: 650038

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 647724

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000045	ug/L		01/18/23 06:41	01/27/23 16:01	1
2,3,7,8-TCDF	ND		0.000010	0.00000022	ug/L		01/18/23 06:41	01/27/23 16:01	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000041	ug/L		01/18/23 06:41	01/27/23 16:01	1
1,2,3,7,8-PeCDF	0.00000234	J,DX	0.000050	0.00000032	ug/L		01/18/23 06:41	01/27/23 16:01	1
2,3,4,7,8-PeCDF	0.00000102	J,DX q	0.000050	0.00000034	ug/L		01/18/23 06:41	01/27/23 16:01	1
1,2,3,4,7,8-HxCDD	0.00000332	J,DX	0.000050	0.00000032	ug/L		01/18/23 06:41	01/27/23 16:01	1
1,2,3,6,7,8-HxCDD	0.00000147	J,DX	0.000050	0.00000031	ug/L		01/18/23 06:41	01/27/23 16:01	1
1,2,3,7,8,9-HxCDD	0.00000133	J,DX q	0.000050	0.00000028	ug/L		01/18/23 06:41	01/27/23 16:01	1
1,2,3,4,7,8-HxCDF	0.00000112	J,DX q	0.000050	0.00000026	ug/L		01/18/23 06:41	01/27/23 16:01	1
1,2,3,6,7,8-HxCDF	0.00000129	J,DX	0.000050	0.00000026	ug/L		01/18/23 06:41	01/27/23 16:01	1
1,2,3,7,8,9-HxCDF	0.00000358	J,DX	0.000050	0.00000029	ug/L		01/18/23 06:41	01/27/23 16:01	1
2,3,4,6,7,8-HxCDF	0.000000990	J,DX q	0.000050	0.00000024	ug/L		01/18/23 06:41	01/27/23 16:01	1
1,2,3,4,6,7,8-HpCDD	0.00000243	J,DX	0.000050	0.00000032	ug/L		01/18/23 06:41	01/27/23 16:01	1
1,2,3,4,6,7,8-HpCDF	0.00000178	J,DX q	0.000050	0.0000012	ug/L		01/18/23 06:41	01/27/23 16:01	1
1,2,3,4,7,8,9-HpCDF	0.00000160	J,DX q	0.000050	0.0000014	ug/L		01/18/23 06:41	01/27/23 16:01	1
OCDD	0.00000942	J,DX	0.00010	0.00000038	ug/L		01/18/23 06:41	01/27/23 16:01	1
OCDF	0.00000326	J,DX	0.00010	0.00000034	ug/L		01/18/23 06:41	01/27/23 16:01	1
Total TCDD	0.00000374	J,DX q	0.000010	0.00000045	ug/L		01/18/23 06:41	01/27/23 16:01	1
Total TCDF	ND		0.000010	0.00000022	ug/L		01/18/23 06:41	01/27/23 16:01	1
Total PeCDD	ND		0.000050	0.00000041	ug/L		01/18/23 06:41	01/27/23 16:01	1
Total PeCDF	0.00000335	J,DX q	0.000050	0.00000032	ug/L		01/18/23 06:41	01/27/23 16:01	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-647724/1-A
Matrix: Water
Analysis Batch: 650038

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 647724

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HxCDD	0.00000613	J,DX q	0.000050	0.00000028	ug/L		01/18/23 06:41	01/27/23 16:01	1
Total HxCDF	0.00000698	J,DX q	0.000050	0.00000024	ug/L		01/18/23 06:41	01/27/23 16:01	1
Total HpCDD	0.00000435	J,DX	0.000050	0.00000032	ug/L		01/18/23 06:41	01/27/23 16:01	1
Total HpCDF	0.00000339	J,DX q	0.000050	0.0000012	ug/L		01/18/23 06:41	01/27/23 16:01	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*53*		*25 - 164*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-2,3,7,8-TCDF	*56*		*24 - 169*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-1,2,3,7,8-PeCDD	*52*		*25 - 181*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-1,2,3,7,8-PeCDF	*53*		*24 - 185*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-2,3,4,7,8-PeCDF	*55*		*21 - 178*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-1,2,3,4,7,8-HxCDD	*55*		*32 - 141*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-1,2,3,6,7,8-HxCDD	*57*		*28 - 130*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-1,2,3,4,7,8-HxCDF	*54*		*26 - 152*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-1,2,3,6,7,8-HxCDF	*61*		*26 - 123*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-1,2,3,7,8,9-HxCDF	*58*		*29 - 147*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-2,3,4,6,7,8-HxCDF	*62*		*28 - 136*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*50*		*23 - 140*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*52*		*28 - 143*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*53*		*26 - 138*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-OCDD	*54*		*17 - 157*	*01/18/23 06:41*	*01/27/23 16:01*	*1*
13C-OCDF	*54*		*17 - 157*	*01/18/23 06:41*	*01/27/23 16:01*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*90*		*35 - 197*	*01/18/23 06:41*	*01/27/23 16:01*	*1*

Lab Sample ID: LCS 320-647724/2-A
Matrix: Water
Analysis Batch: 650038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 647724

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000248		ug/L		124	67 - 158
2,3,7,8-TCDF	0.000200	0.000250		ug/L		125	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.00117		ug/L		117	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.00119	MB	ug/L		119	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.00120	MB	ug/L		120	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.00110	MB	ug/L		110	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00114	MB	ug/L		114	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.00109	MB	ug/L		109	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.00112	MB	ug/L		112	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.00114	MB	ug/L		114	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.00112	MB	ug/L		112	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.00113	MB	ug/L		113	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.00111	MB	ug/L		111	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.00113	MB	ug/L		113	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.00111	MB	ug/L		111	78 - 138

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-647724/2-A
Matrix: Water
Analysis Batch: 650038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 647724

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
OCDD			0.00200	0.00218	MB	ug/L		109	78 - 144		
OCDF			0.00200	0.00230	MB	ug/L		115	63 - 170		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*54*		*20 - 175*
13C-2,3,7,8-TCDF	*58*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*53*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*55*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*55*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*54*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*57*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*53*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*61*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*59*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*62*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*51*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*52*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*54*		*20 - 186*
13C-OCDD	*56*		*13 - 199*
13C-OCDF	*56*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*85*		*31 - 191*

Lab Sample ID: LCSD 320-647724/3-A
Matrix: Water
Analysis Batch: 650038

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 647724

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000256		ug/L		128	67 - 158	3	50
2,3,7,8-TCDF			0.000200	0.000256		ug/L		128	75 - 158	2	50
1,2,3,7,8-PeCDD			0.00100	0.00118		ug/L		118	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.00117	MB	ug/L		117	80 - 134	2	50
2,3,4,7,8-PeCDF			0.00100	0.00122	MB	ug/L		122	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.00110	MB	ug/L		110	70 - 164	0	50
1,2,3,6,7,8-HxCDD			0.00100	0.00114	MB	ug/L		114	76 - 134	0	50
1,2,3,7,8,9-HxCDD			0.00100	0.00110	MB	ug/L		110	64 - 162	1	50
1,2,3,4,7,8-HxCDF			0.00100	0.00111	MB	ug/L		111	72 - 134	0	50
1,2,3,6,7,8-HxCDF			0.00100	0.00112	MB	ug/L		112	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00112	MB	ug/L		112	78 - 130	0	50
2,3,4,6,7,8-HxCDF			0.00100	0.00114	MB	ug/L		114	70 - 156	0	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00110	MB	ug/L		110	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00112	MB	ug/L		112	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00111	MB	ug/L		111	78 - 138	0	50
OCDD			0.00200	0.00217	MB	ug/L		108	78 - 144	1	50
OCDF			0.00200	0.00229	MB	ug/L		114	63 - 170	0	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	55		20 - 175
13C-2,3,7,8-TCDF	60		22 - 152
13C-1,2,3,7,8-PeCDD	52		21 - 227
13C-1,2,3,7,8-PeCDF	54		21 - 192
13C-2,3,4,7,8-PeCDF	55		13 - 328
13C-1,2,3,4,7,8-HxCDD	50		21 - 193
13C-1,2,3,6,7,8-HxCDD	55		25 - 163
13C-1,2,3,4,7,8-HxCDF	51		19 - 202
13C-1,2,3,6,7,8-HxCDF	57		21 - 159
13C-1,2,3,7,8,9-HxCDF	56		17 - 205
13C-2,3,4,6,7,8-HxCDF	59		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	50		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	50		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	52		20 - 186
13C-OCDD	54		13 - 199
13C-OCDF	54		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	87		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-646691/1-A
Matrix: Water
Analysis Batch: 651542

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 646691

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000046	ug/L		01/13/23 05:53	02/03/23 08:59	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	69		24 - 169	01/13/23 05:53	02/03/23 08:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	109		35 - 197	01/13/23 05:53	02/03/23 08:59	1

Specialty Organics

Prep Batch: 646691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-7 - RA	EPNDSW04_20230104	Total/NA	Water	1613B	
570-122995-7	EPNDSW04_20230104	Total/NA	Water	1613B	
MB 320-646691/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-646691/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-646691/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-646691/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Prep Batch: 647724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-1 - RA	A1BMP0002_20230104	Total/NA	Water	1613B	
570-122995-1	A1BMP0002_20230104	Total/NA	Water	1613B	
570-122995-2 - RA	A1BMP0003_20230104	Total/NA	Water	1613B	
570-122995-2	A1BMP0003_20230104	Total/NA	Water	1613B	
570-122995-3 - RA	B1BMP0009_20230104	Total/NA	Water	1613B	
570-122995-3	B1BMP0009_20230104	Total/NA	Water	1613B	
570-122995-4 - RA	B1BMP0010_20230104	Total/NA	Water	1613B	
570-122995-4	B1BMP0010_20230104	Total/NA	Water	1613B	
570-122995-5 - RA	B1BMP0011_20230104	Total/NA	Water	1613B	
570-122995-5	B1BMP0011_20230104	Total/NA	Water	1613B	
570-122995-6 - RA	ILBMP0002_20230104	Total/NA	Water	1613B	
570-122995-6	ILBMP0002_20230104	Total/NA	Water	1613B	
MB 320-647724/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-647724/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-647724/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 650038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-1	A1BMP0002_20230104	Total/NA	Water	1613B	647724
570-122995-2	A1BMP0003_20230104	Total/NA	Water	1613B	647724
570-122995-3	B1BMP0009_20230104	Total/NA	Water	1613B	647724
570-122995-4	B1BMP0010_20230104	Total/NA	Water	1613B	647724
570-122995-5	B1BMP0011_20230104	Total/NA	Water	1613B	647724
570-122995-6	ILBMP0002_20230104	Total/NA	Water	1613B	647724
MB 320-647724/1-A	Method Blank	Total/NA	Water	1613B	647724
LCS 320-647724/2-A	Lab Control Sample	Total/NA	Water	1613B	647724
LCSD 320-647724/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	647724

Analysis Batch: 650041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-7	EPNDSW04_20230104	Total/NA	Water	1613B	646691
MB 320-646691/1-A	Method Blank	Total/NA	Water	1613B	646691
LCS 320-646691/2-A	Lab Control Sample	Total/NA	Water	1613B	646691
LCSD 320-646691/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	646691

Analysis Batch: 651279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-1 - RA	A1BMP0002_20230104	Total/NA	Water	1613B	647724
570-122995-2 - RA	A1BMP0003_20230104	Total/NA	Water	1613B	647724
570-122995-3 - RA	B1BMP0009_20230104	Total/NA	Water	1613B	647724
570-122995-4 - RA	B1BMP0010_20230104	Total/NA	Water	1613B	647724
570-122995-5 - RA	B1BMP0011_20230104	Total/NA	Water	1613B	647724

Specialty Organics (Continued)

Analysis Batch: 651279 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-6 - RA	ILBMP0002_20230104	Total/NA	Water	1613B	647724

Analysis Batch: 651542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-7 - RA	EPNDSW04_20230104	Total/NA	Water	1613B	646691
MB 320-646691/1-A - RA	Method Blank	Total/NA	Water	1613B	646691

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1062.9 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651279	02/02/23 19:54	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1062.9 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650038	01/27/23 18:20	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		965.3 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651279	02/02/23 20:31	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			965.3 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650038	01/27/23 19:06	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		944.3 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651279	02/02/23 21:08	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			944.3 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650038	01/27/23 19:53	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		978.4 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651279	02/02/23 21:45	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			978.4 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650038	01/27/23 20:39	GRB	EET SAC
	Instrument ID: 12D5									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Client Sample ID: B1BMP0011_20230104

Lab Sample ID: 570-122995-5

Date Collected: 01/04/23 08:30
Date Received: 01/06/23 18:15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		952.2 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651279	02/02/23 22:22	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			952.2 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650038	01/27/23 21:26	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: ILBMP0002_20230104

Lab Sample ID: 570-122995-6

Date Collected: 01/04/23 10:15
Date Received: 01/06/23 18:15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		944.7 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651279	02/02/23 22:59	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			944.7 mL	20.0 uL	647724	01/18/23 06:41	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650038	01/27/23 22:12	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: EPNDSW04_20230104

Lab Sample ID: 570-122995-7

Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1028.7 mL	20.0 uL	646691	01/13/23 05:53	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651542	02/03/23 09:36	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1028.7 mL	20.0 uL	646691	01/13/23 05:53	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650041	01/28/23 06:11	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122995-1	A1BMP0002_20230104	Water	01/04/23 10:00	01/06/23 18:15
570-122995-2	A1BMP0003_20230104	Water	01/04/23 10:30	01/06/23 18:15
570-122995-3	B1BMP0009_20230104	Water	01/04/23 08:00	01/06/23 18:15
570-122995-4	B1BMP0010_20230104	Water	01/04/23 08:15	01/06/23 18:15
570-122995-5	B1BMP0011_20230104	Water	01/04/23 08:30	01/06/23 18:15
570-122995-6	ILBMP0002_20230104	Water	01/04/23 10:15	01/06/23 18:15
570-122995-7	EPNDSW04_20230104	Water	01/04/23 07:30	01/06/23 18:15

122995

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Eurofins Calscience, Inc.

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under this CoC shall be performed in accordance with the attached Master Services Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Method 200.8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002_20230104	01/04/23	1000	G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_20230104		1030	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_20230104		0800	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_20230104		0815	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_20230104		0830	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0002_20230104		1015	G	WM	8	Y	Y	X	X	X	X	X	X	X
ILBMP0004			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010			G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012			G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_20230104	01/04/23	0730	G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02			G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1

570-122995 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C): Obs'd ____ Corr'd: ____ Therm ID No.: ____

Relinquished by	Company	Date/Time	Received by	Date/Time
[signature]	JHA	01/06/23 1300	[signature] EC	1/6/23 1300
[signature]	EC	1/6/23 1815	[signature]	1/6/23 1815
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

1.7/1.7 2.1/2.1 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

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2/6/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-122995-1
Address: 5755 8th Street East, ,	Due Date Requested. 1/18/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
A1BMP0002_20230104 (570-122995-1)	1/4/23	10 00 Pacific		Water			X	X	2	
A1BMP0003_20230104 (570-122995-2)	1/4/23	10 30 Pacific		Water			X	X	2	
B1BMP0009_20230104 (570-122995-3)	1/4/23	08 00 Pacific		Water			X	X	2	
B1BMP0010_20230104 (570-122995-4)	1/4/23	08 15 Pacific		Water			X	X	2	
B1BMP0011_20230104 (570-122995-5)	1/4/23	08 30 Pacific		Water			X	X	2	
ILBMP0002_20230104 (570-122995-6)	1/4/23	10 15 Pacific		Water			X	X	2	
EPNDSW04_20230104 (570-122995-7)	1/4/23	07 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/9/23 1517	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No.: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122995-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
A1BMP0002_20230104 (570-122995-1)	1/4/23	10 00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
A1BMP0003_20230104 (570-122995-2)	1/4/23	10 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
B1BMP0009_20230104 (570-122995-3)	1/4/23	08 00 Pacific		Water			X	2	See QAS Boeing_w/u to zero
B1BMP0010_20230104 (570-122995-4)	1/4/23	08 15 Pacific		Water			X	2	See QAS Boeing_w/u to zero
B1BMP0011_20230104 (570-122995-5)	1/4/23	08 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
ILBMP0002_20230104 (570-122995-6)	1/4/23	10 15 Pacific		Water			X	2	See QAS Boeing_w/u to zero
EPNDSW04_20230104 (570-122995-7)	1/4/23	07 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	1/9/23 1552	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins
Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203580.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122995-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
A1BMP0002_20230104 (570-122995-1)	1/4/23	10:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
A1BMP0003_20230104 (570-122995-2)	1/4/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
B1BMP0009_20230104 (570-122995-3)	1/4/23	08:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
B1BMP0010_20230104 (570-122995-4)	1/4/23	08:15 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
B1BMP0011_20230104 (570-122995-5)	1/4/23	08:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
ILBMP0002_20230104 (570-122995-6)	1/4/23	10:15 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPNDSW04_20230104 (570-122995-7)	1/4/23	07:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/9/23 1552	EC		1.10.23 1000	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 3.6

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122995-2

Login Number: 122995
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122995-2

Login Number: 122995
List Number: 3
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 01/10/23 04:14 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.6c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122995-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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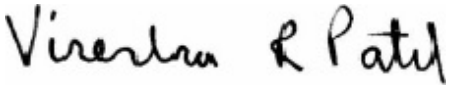
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122995-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122995-3

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.1º C.

Organic Prep
Method D4464: The sample duplicate precision for the following sample associated with analytical batch 570-300043 was flagged as being outside control limits due to a L.I.M.S. limitation: (570-123303-A-1) and (570-123303-A-1 DU). The mean grain size for the sample and sample duplicate were within RPD acceptance criteria. Method D4464.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-3

Client Sample ID: A1BMP0002_20230104 — Lab Sample ID: 570-122995-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	6.80		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	16.51		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	56.52		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	63.31		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	20.18		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: A1BMP0003_20230104 — Lab Sample ID: 570-122995-2

No Detections.

Client Sample ID: B1BMP0009_20230104 — Lab Sample ID: 570-122995-3

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	10.99		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	0.02		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	59.34		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	70.33		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	29.65		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: B1BMP0010_20230104 — Lab Sample ID: 570-122995-4

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	4.17		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	31.56		0.01	0.01	%	1		D4464	Total/NA
Medium Sand (0.25 to 0.5 mm)	1.50		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	44.78		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	48.96		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	17.98		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: B1BMP0011_20230104 — Lab Sample ID: 570-122995-5

No Detections.

Client Sample ID: ILBMP0002_20230104 — Lab Sample ID: 570-122995-6

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	4.29		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	20.73		0.01	0.01	%	1		D4464	Total/NA
Medium Sand (0.25 to 0.5 mm)	0.03		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	47.02		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	51.31		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	27.93		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EPNDSW04_20230104 — Lab Sample ID: 570-122995-7

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	11.54		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	3.50		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	73.27		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	84.81		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	11.70		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**6.80**		0.01	0.01	%			01/31/23 11:30	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/31/23 11:30	1
Fine Sand (0.125 to 0.25mm)	**16.51**		0.01	0.01	%			01/31/23 11:30	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/31/23 11:30	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/31/23 11:30	1
Silt (0.00391 to 0.0625mm)	**56.52**		0.01	0.01	%			01/31/23 11:30	1
Total Silt and Clay (0 to 0.0626mm)	**63.31**		0.01	0.01	%			01/31/23 11:30	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/31/23 11:30	1
Very Fine Sand (0.0625 to 0.125 mm)	**20.18**		0.01	0.01	%			01/31/23 11:30	1

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-2
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			01/31/23 11:38	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/31/23 11:38	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			01/31/23 11:38	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/31/23 11:38	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/31/23 11:38	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			01/31/23 11:38	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			01/31/23 11:38	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/31/23 11:38	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			01/31/23 11:38	1

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-3
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**10.99**		0.01	0.01	%			01/31/23 11:47	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/31/23 11:47	1
Fine Sand (0.125 to 0.25mm)	**0.02**		0.01	0.01	%			01/31/23 11:47	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/31/23 11:47	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/31/23 11:47	1
Silt (0.00391 to 0.0625mm)	**59.34**		0.01	0.01	%			01/31/23 11:47	1
Total Silt and Clay (0 to 0.0626mm)	**70.33**		0.01	0.01	%			01/31/23 11:47	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/31/23 11:47	1
Very Fine Sand (0.0625 to 0.125 mm)	**29.65**		0.01	0.01	%			01/31/23 11:47	1

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-4
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**4.17**		0.01	0.01	%			01/31/23 11:57	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/31/23 11:57	1
Fine Sand (0.125 to 0.25mm)	**31.56**		0.01	0.01	%			01/31/23 11:57	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/31/23 11:57	1
Medium Sand (0.25 to 0.5 mm)	**1.50**		0.01	0.01	%			01/31/23 11:57	1
Silt (0.00391 to 0.0625mm)	**44.78**		0.01	0.01	%			01/31/23 11:57	1
Total Silt and Clay (0 to 0.0626mm)	**48.96**		0.01	0.01	%			01/31/23 11:57	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-4
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/31/23 11:57	1
Very Fine Sand (0.0625 to 0.125 mm)	**17.98**		0.01	0.01	%			01/31/23 11:57	1

Client Sample ID: B1BMP0011_20230104
Date Collected: 01/04/23 08:30
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-5
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			01/31/23 12:07	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/31/23 12:07	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			01/31/23 12:07	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/31/23 12:07	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/31/23 12:07	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			01/31/23 12:07	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			01/31/23 12:07	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/31/23 12:07	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			01/31/23 12:07	1

Client Sample ID: ILBMP0002_20230104
Date Collected: 01/04/23 10:15
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-6
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**4.29**		0.01	0.01	%			01/31/23 12:53	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/31/23 12:53	1
Fine Sand (0.125 to 0.25mm)	**20.73**		0.01	0.01	%			01/31/23 12:53	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/31/23 12:53	1
Medium Sand (0.25 to 0.5 mm)	**0.03**		0.01	0.01	%			01/31/23 12:53	1
Silt (0.00391 to 0.0625mm)	**47.02**		0.01	0.01	%			01/31/23 12:53	1
Total Silt and Clay (0 to 0.0626mm)	**51.31**		0.01	0.01	%			01/31/23 12:53	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/31/23 12:53	1
Very Fine Sand (0.0625 to 0.125 mm)	**27.93**		0.01	0.01	%			01/31/23 12:53	1

Client Sample ID: EPNDSW04_20230104
Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-7
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**11.54**		0.01	0.01	%			01/31/23 13:07	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/31/23 13:07	1
Fine Sand (0.125 to 0.25mm)	**3.50**		0.01	0.01	%			01/31/23 13:07	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/31/23 13:07	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/31/23 13:07	1
Silt (0.00391 to 0.0625mm)	**73.27**		0.01	0.01	%			01/31/23 13:07	1
Total Silt and Clay (0 to 0.0626mm)	**84.81**		0.01	0.01	%			01/31/23 13:07	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/31/23 13:07	1
Very Fine Sand (0.0625 to 0.125 mm)	**11.70**		0.01	0.01	%			01/31/23 13:07	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

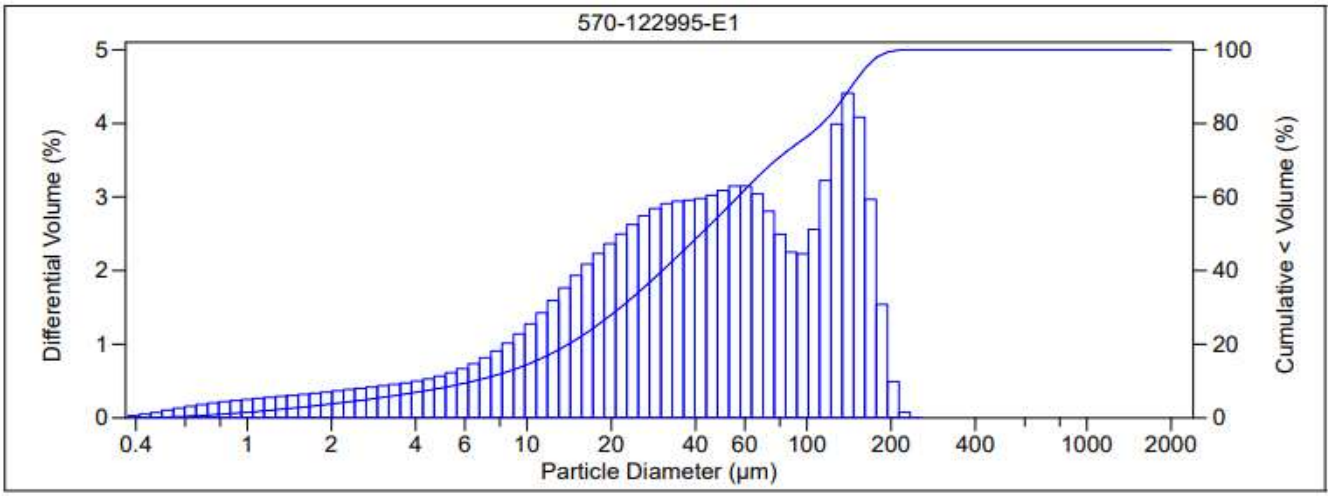
Haley & Aldrich, Inc.

Date Sampled:	01/04/23
Date Received:	01/06/23
Work Order No:	570-122995
Date Analyzed:	01/31/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
A1BMP0002_20230104		Silt	0.060

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	16.51	20.18	56.52	6.80	63.31



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	01/04/23
Date Received:	01/06/23
Work Order No:	570-122995
Date Analyzed:	01/31/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
A1BMP0003_20230104		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

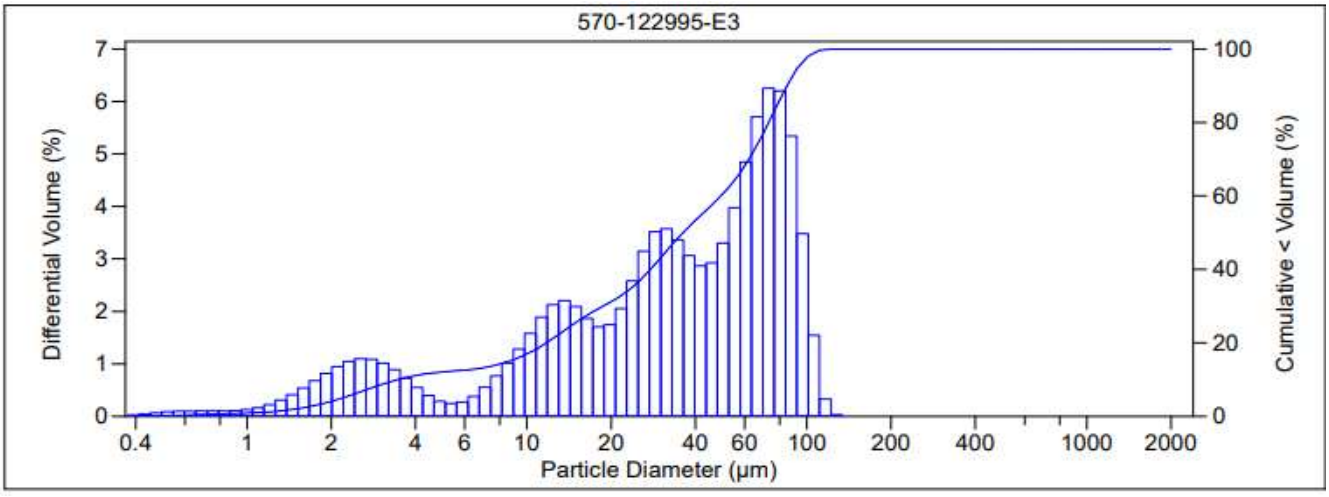
Haley & Aldrich, Inc.

Date Sampled:	01/04/23
Date Received:	01/06/23
Work Order No:	570-122995
Date Analyzed:	01/31/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
B1BMP0009_20230104		Silt	0.042

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.02	29.65	59.34	10.99	70.33



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

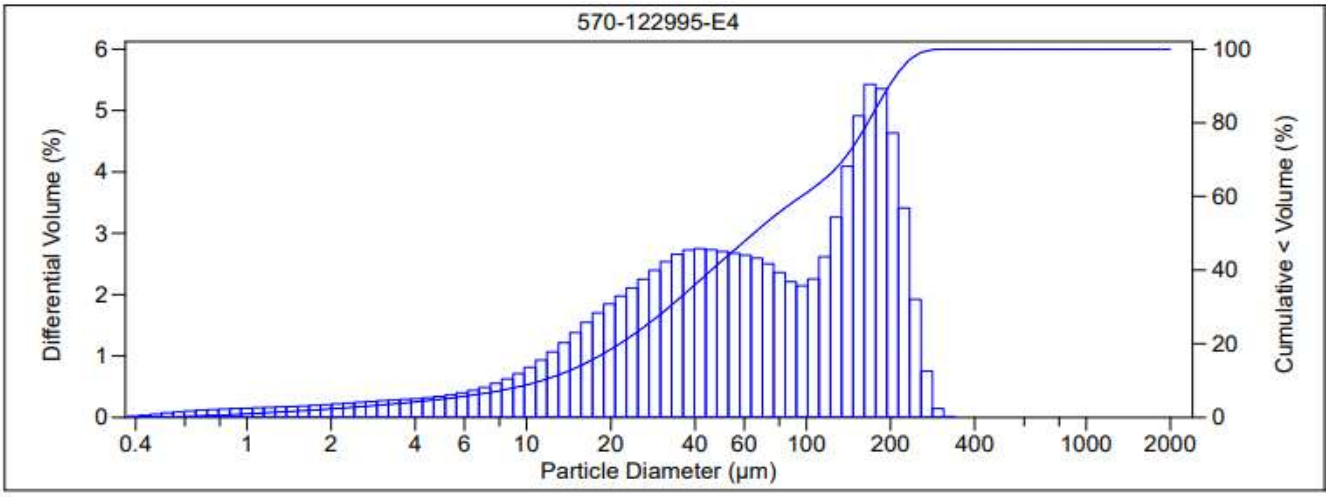
Haley & Aldrich, Inc.

Date Sampled:	01/04/23
Date Received:	01/06/23
Work Order No:	570-122995
Date Analyzed:	01/31/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
B1BMP0010_20230104		Very Fine Sand	0.090

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	1.50	31.56	17.98	44.78	4.17	48.96



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	01/04/23
Date Received:	01/06/23
Work Order No:	570-122995
Date Analyzed:	01/31/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
B1BMP0011_20230104		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

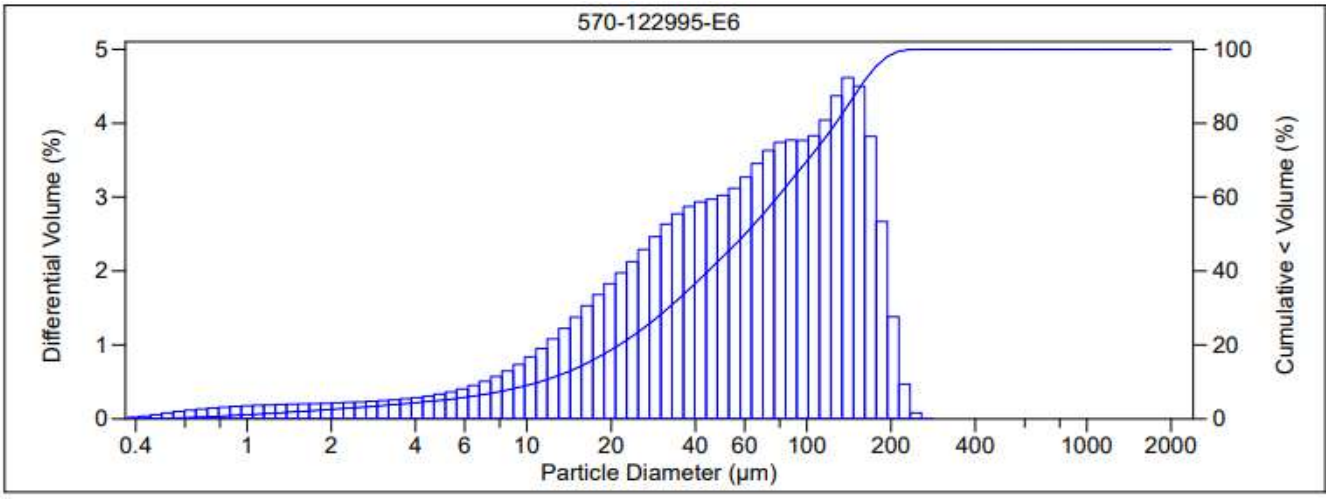
Haley & Aldrich, Inc.

Date Sampled:	01/04/23
Date Received:	01/06/23
Work Order No:	570-122995
Date Analyzed:	01/31/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
ILBMP0002_20230104		Very Fine Sand	0.073

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.03	20.73	27.93	47.02	4.29	51.31



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

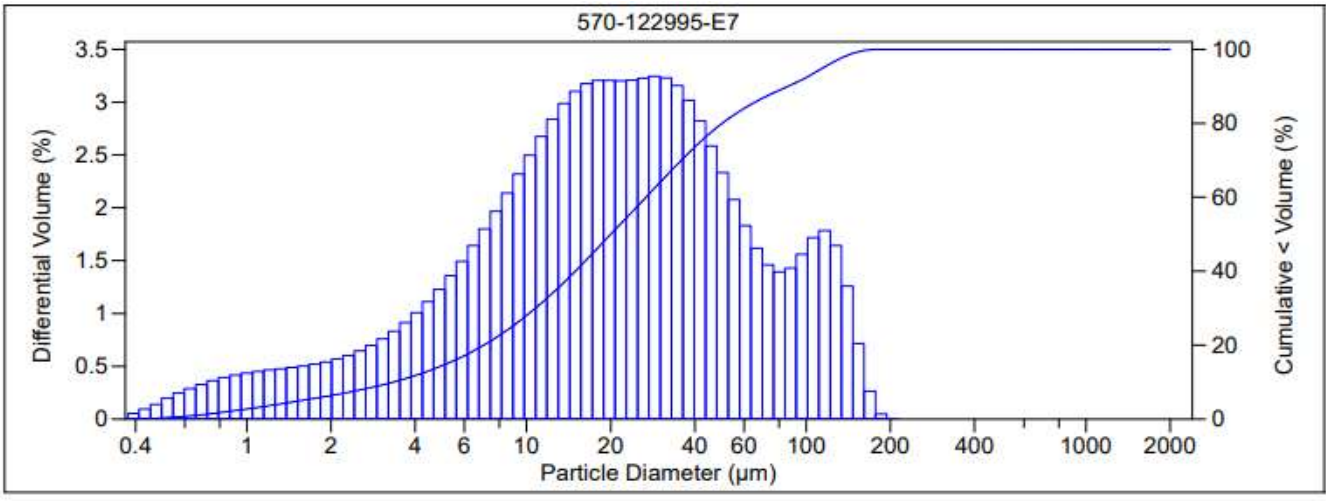
Haley & Aldrich, Inc.

Date Sampled:	01/04/23
Date Received:	01/06/23
Work Order No:	570-122995
Date Analyzed:	01/31/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPNDSW04_20230104		Silt	0.033

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	3.50	11.70	73.27	11.54	84.81



V 3.0

Client: Haley & Aldrich, Inc.
Job ID: 570-122995-3
Project/Site: Boeing SSFL ISRA and BMP

Geotechnical

Analysis Batch: 300043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-1	A1BMP0002_20230104	Total/NA	Water	D4464	
570-122995-2	A1BMP0003_20230104	Total/NA	Water	D4464	
570-122995-3	B1BMP0009_20230104	Total/NA	Water	D4464	
570-122995-4	B1BMP0010_20230104	Total/NA	Water	D4464	
570-122995-5	B1BMP0011_20230104	Total/NA	Water	D4464	
570-122995-6	ILBMP0002_20230104	Total/NA	Water	D4464	
570-122995-7	EPNDSW04_20230104	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-3

Client Sample ID: A1BMP0002_20230104
Lab Sample ID: 570-122995-1
Date Collected: 01/04/23 10:00
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			300043	01/31/23 11:30	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: A1BMP0003_20230104
Lab Sample ID: 570-122995-2
Date Collected: 01/04/23 10:30
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			300043	01/31/23 11:38	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: B1BMP0009_20230104
Lab Sample ID: 570-122995-3
Date Collected: 01/04/23 08:00
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			300043	01/31/23 11:47	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: B1BMP0010_20230104
Lab Sample ID: 570-122995-4
Date Collected: 01/04/23 08:15
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			300043	01/31/23 11:57	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: B1BMP0011_20230104
Lab Sample ID: 570-122995-5
Date Collected: 01/04/23 08:30
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			300043	01/31/23 12:07	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: ILBMP0002_20230104
Lab Sample ID: 570-122995-6
Date Collected: 01/04/23 10:15
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			300043	01/31/23 12:53	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-3

Client Sample ID: EPNDSW04_20230104

Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			300043	01/31/23 13:07	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-3

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-3

Method	Method Description	Protocol	Laboratory
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4

Protocol References:

ASTM = ASTM International

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122995-1	A1BMP0002_20230104	Water	01/04/23 10:00	01/06/23 18:15
570-122995-2	A1BMP0003_20230104	Water	01/04/23 10:30	01/06/23 18:15
570-122995-3	B1BMP0009_20230104	Water	01/04/23 08:00	01/06/23 18:15
570-122995-4	B1BMP0010_20230104	Water	01/04/23 08:15	01/06/23 18:15
570-122995-5	B1BMP0011_20230104	Water	01/04/23 08:30	01/06/23 18:15
570-122995-6	ILBMP0002_20230104	Water	01/04/23 10:15	01/06/23 18:15
570-122995-7	EPNDSW04_20230104	Water	01/04/23 07:30	01/06/23 18:15

122995

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

TestAmerica services under this CoC shall be performed in accordance with the attached Master Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Method 200.8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002_20230104	01/04/23	1000	G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_20230104		1030	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_20230104		0800	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_20230104		0815	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_20230104		0830	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0002_20230104		1015	G	WM	8	Y	Y	X	X	X	X	X	X	X
ILBMP0004			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010			G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_20230104	01/04/23	0730	G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1

570-122995 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C). Obs'd ____ Corr'd: ____ Therm ID No. ____

	Company	Date/Time		Date/Time
Relinquished by	H&A	01/06/23 1300	Received by: EC	1/6/23 1300
Relinquished by	EC	1/6/23 1815	Received by:	Date/Time: 1/6/23 1815
Relinquished by	Company	Date/Time	Received in Laboratory by:	Date/Time

1.7/1.7 2.1/2.1 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

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2/2/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-122995-1
Address: 5755 8th Street East, ,	Due Date Requested. 1/18/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
A1BMP0002_20230104 (570-122995-1)	1/4/23	10 00 Pacific		Water			X	X	2	
A1BMP0003_20230104 (570-122995-2)	1/4/23	10 30 Pacific		Water			X	X	2	
B1BMP0009_20230104 (570-122995-3)	1/4/23	08 00 Pacific		Water			X	X	2	
B1BMP0010_20230104 (570-122995-4)	1/4/23	08 15 Pacific		Water			X	X	2	
B1BMP0011_20230104 (570-122995-5)	1/4/23	08 30 Pacific		Water			X	X	2	
ILBMP0002_20230104 (570-122995-6)	1/4/23	10 15 Pacific		Water			X	X	2	
EPNDSW04_20230104 (570-122995-7)	1/4/23	07 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/19/23 1517	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No.: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122995-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
A1BMP0002_20230104 (570-122995-1)	1/4/23	10 00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
A1BMP0003_20230104 (570-122995-2)	1/4/23	10 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
B1BMP0009_20230104 (570-122995-3)	1/4/23	08 00 Pacific		Water			X	2	See QAS Boeing_w/u to zero
B1BMP0010_20230104 (570-122995-4)	1/4/23	08 15 Pacific		Water			X	2	See QAS Boeing_w/u to zero
B1BMP0011_20230104 (570-122995-5)	1/4/23	08 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
ILBMP0002_20230104 (570-122995-6)	1/4/23	10 15 Pacific		Water			X	2	See QAS Boeing_w/u to zero
EPNDSW04_20230104 (570-122995-7)	1/4/23	07 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122995-3

Login Number: 122995
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122995-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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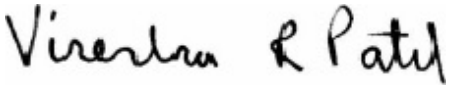
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-4

Job ID: 570-122995-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122995-4

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.1º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-4

Client Sample ID: A1BMP0002_20230104 — Lab Sample ID: 570-122995-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.026		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0049		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: A1BMP0003_20230104 — Lab Sample ID: 570-122995-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.010		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0098		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: B1BMP0009_20230104 — Lab Sample ID: 570-122995-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0035		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0027		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: B1BMP0010_20230104 — Lab Sample ID: 570-122995-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0051		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0035		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: B1BMP0011_20230104 — Lab Sample ID: 570-122995-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0077		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0058		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: ILBMP0002_20230104 — Lab Sample ID: 570-122995-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.019		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.016		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: EPNDSW04_20230104 — Lab Sample ID: 570-122995-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.019		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.016		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.026		0.00050	0.000079	ug/L			01/11/23 16:16	1

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.010		0.00050	0.000079	ug/L			01/11/23 16:20	1

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0035		0.00050	0.000079	ug/L			01/11/23 16:24	1

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0051		0.00050	0.000079	ug/L			01/11/23 16:28	1

Client Sample ID: B1BMP0011_20230104
Date Collected: 01/04/23 08:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0077		0.00050	0.000079	ug/L			01/11/23 16:40	1

Client Sample ID: ILBMP0002_20230104
Date Collected: 01/04/23 10:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.019		0.00050	0.000079	ug/L			01/11/23 17:17	1

Client Sample ID: EPNDSW04_20230104
Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.019		0.00050	0.000079	ug/L			01/11/23 13:30	1

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0049		0.00050	0.000079	ug/L			01/11/23 18:06	1

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0098		0.00050	0.000079	ug/L			01/11/23 18:10	1

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0027		0.00050	0.000079	ug/L			01/11/23 18:15	1

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0035		0.00050	0.000079	ug/L			01/11/23 18:19	1

Client Sample ID: B1BMP0011_20230104
Date Collected: 01/04/23 08:30
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0058		0.00050	0.000079	ug/L			01/11/23 18:48	1

Client Sample ID: ILBMP0002_20230104
Date Collected: 01/04/23 10:15
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.016		0.00050	0.000079	ug/L			01/11/23 18:52	1

Client Sample ID: EPNDSW04_20230104
Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15
Lab Sample ID: 570-122995-7
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.016		0.00050	0.000079	ug/L			01/11/23 18:56	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 500-227819-A-1-A MS
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 414943

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.0014		0.00500	0.00614		ug/L		95	71 - 125

Lab Sample ID: 500-227819-A-1-A MSD
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 414943

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0014		0.00500	0.00609		ug/L		94	71 - 125	1	24

Lab Sample ID: MB 580-415211/15
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/11/23 13:38	1

Lab Sample ID: MB 580-415211/16
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/11/23 13:42	1

Lab Sample ID: MB 580-415211/17
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/11/23 13:46	1

Lab Sample ID: MB 580-415211/18
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/11/23 13:50	1

Lab Sample ID: MB 580-415211/19
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/11/23 13:55	1

Lab Sample ID: MB 580-415211/20
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/11/23 13:59	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: LCS 580-415211/25
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00489		ug/L		98	77 - 123		

Lab Sample ID: LCS 580-415211/27
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00452		ug/L		90	77 - 123		

Lab Sample ID: LCSD 580-415211/26
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00492		ug/L		98	77 - 123	1	24

Lab Sample ID: LCSD 580-415211/28
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00475		ug/L		95	77 - 123	5	24

Lab Sample ID: 570-122514-E-1 MS
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND		0.00500	0.00492		ug/L		98	71 - 125		

Lab Sample ID: 570-122514-E-1 MSD
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND		0.00500	0.00483		ug/L		97	71 - 125	2	24

Lab Sample ID: 570-122995-7 MS
Matrix: Water
Analysis Batch: 415211

Client Sample ID: EPNDSW04_20230104
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.019		0.0300	0.0509		ug/L		107	71 - 125		

Lab Sample ID: 570-122995-7 MSD
Matrix: Water
Analysis Batch: 415211

Client Sample ID: EPNDSW04_20230104
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.019		0.0300	0.0499		ug/L		103	71 - 125	2	24

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-121818-A-1 MS
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00042	J,DX	0.00500	0.00446		ug/L		81	71 - 125		

Lab Sample ID: 580-121818-A-1 MSD
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00042	J,DX	0.00500	0.00442		ug/L		80	71 - 125	1	24

Lab Sample ID: MB 580-414923/1-A
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/11/23 14:15	1

Metals

Filtration Batch: 414923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-1	A1BMP0002_20230104	Dissolved	Water	Filtration	
570-122995-2	A1BMP0003_20230104	Dissolved	Water	Filtration	
570-122995-3	B1BMP0009_20230104	Dissolved	Water	Filtration	
570-122995-4	B1BMP0010_20230104	Dissolved	Water	Filtration	
570-122995-5	B1BMP0011_20230104	Dissolved	Water	Filtration	
570-122995-6	ILBMP0002_20230104	Dissolved	Water	Filtration	
570-122995-7	EPNDSW04_20230104	Dissolved	Water	Filtration	
MB 580-414923/1-A	Method Blank	Dissolved	Water	Filtration	

Prep Batch: 414943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-227819-A-1-A MS	Matrix Spike	Total/NA	Water	1631E	
500-227819-A-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Analysis Batch: 415211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122995-1	A1BMP0002_20230104	Dissolved	Water	1631E	414923
570-122995-1	A1BMP0002_20230104	Total/NA	Water	1631E	
570-122995-2	A1BMP0003_20230104	Dissolved	Water	1631E	414923
570-122995-2	A1BMP0003_20230104	Total/NA	Water	1631E	
570-122995-3	B1BMP0009_20230104	Dissolved	Water	1631E	414923
570-122995-3	B1BMP0009_20230104	Total/NA	Water	1631E	
570-122995-4	B1BMP0010_20230104	Dissolved	Water	1631E	414923
570-122995-4	B1BMP0010_20230104	Total/NA	Water	1631E	
570-122995-5	B1BMP0011_20230104	Dissolved	Water	1631E	414923
570-122995-5	B1BMP0011_20230104	Total/NA	Water	1631E	
570-122995-6	ILBMP0002_20230104	Dissolved	Water	1631E	414923
570-122995-6	ILBMP0002_20230104	Total/NA	Water	1631E	
570-122995-7	EPNDSW04_20230104	Dissolved	Water	1631E	414923
570-122995-7	EPNDSW04_20230104	Total/NA	Water	1631E	
MB 580-414923/1-A	Method Blank	Dissolved	Water	1631E	414923
MB 580-415211/15	Method Blank	Total/NA	Water	1631E	
MB 580-415211/16	Method Blank	Total/NA	Water	1631E	
MB 580-415211/17	Method Blank	Total/NA	Water	1631E	
MB 580-415211/18	Method Blank	Total/NA	Water	1631E	
MB 580-415211/19	Method Blank	Total/NA	Water	1631E	
MB 580-415211/20	Method Blank	Total/NA	Water	1631E	
LCS 580-415211/25	Lab Control Sample	Total/NA	Water	1631E	
LCS 580-415211/27	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-415211/26	Lab Control Sample Dup	Total/NA	Water	1631E	
LCSD 580-415211/28	Lab Control Sample Dup	Total/NA	Water	1631E	
500-227819-A-1-A MS	Matrix Spike	Total/NA	Water	1631E	414943
500-227819-A-1-A MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	414943
570-122514-E-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-122514-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
570-122995-7 MS	EPNDSW04_20230104	Total/NA	Water	1631E	
570-122995-7 MSD	EPNDSW04_20230104	Total/NA	Water	1631E	
580-121818-A-1 MS	Matrix Spike	Total/NA	Water	1631E	
580-121818-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-4

Client Sample ID: A1BMP0002_20230104
Date Collected: 01/04/23 10:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414923	01/10/23 11:50	LEL	EET SEA
Dissolved	Analysis	1631E		1			415211	01/11/23 18:06	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415211	01/11/23 16:16	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: A1BMP0003_20230104
Date Collected: 01/04/23 10:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414923	01/10/23 11:50	LEL	EET SEA
Dissolved	Analysis	1631E		1			415211	01/11/23 18:10	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415211	01/11/23 16:20	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: B1BMP0009_20230104
Date Collected: 01/04/23 08:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414923	01/10/23 11:50	LEL	EET SEA
Dissolved	Analysis	1631E		1			415211	01/11/23 18:15	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415211	01/11/23 16:24	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: B1BMP0010_20230104
Date Collected: 01/04/23 08:15
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122995-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414923	01/10/23 11:50	LEL	EET SEA
Dissolved	Analysis	1631E		1			415211	01/11/23 18:19	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415211	01/11/23 16:28	COW	EET SEA
	Instrument ID: 2600-4									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-4

Client Sample ID: B1BMP0011_20230104

Lab Sample ID: 570-122995-5

Date Collected: 01/04/23 08:30
Date Received: 01/06/23 18:15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414923	01/10/23 11:50	LEL	EET SEA
Dissolved	Analysis	1631E		1			415211	01/11/23 18:48	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415211	01/11/23 16:40	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: ILBMP0002_20230104

Lab Sample ID: 570-122995-6

Date Collected: 01/04/23 10:15
Date Received: 01/06/23 18:15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414923	01/10/23 11:50	LEL	EET SEA
Dissolved	Analysis	1631E		1			415211	01/11/23 18:52	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415211	01/11/23 17:17	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: EPNDSW04_20230104

Lab Sample ID: 570-122995-7

Date Collected: 01/04/23 07:30
Date Received: 01/06/23 18:15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414923	01/10/23 11:50	LEL	EET SEA
Dissolved	Analysis	1631E		1			415211	01/11/23 18:56	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415211	01/11/23 13:30	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122995-4
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-4

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122995-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122995-1	A1BMP0002_20230104	Water	01/04/23 10:00	01/06/23 18:15
570-122995-2	A1BMP0003_20230104	Water	01/04/23 10:30	01/06/23 18:15
570-122995-3	B1BMP0009_20230104	Water	01/04/23 08:00	01/06/23 18:15
570-122995-4	B1BMP0010_20230104	Water	01/04/23 08:15	01/06/23 18:15
570-122995-5	B1BMP0011_20230104	Water	01/04/23 08:30	01/06/23 18:15
570-122995-6	ILBMP0002_20230104	Water	01/04/23 10:15	01/06/23 18:15
570-122995-7	EPNDSW04_20230104	Water	01/04/23 07:30	01/06/23 18:15

122995

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

TestAmerica services under this CoC shall be performed in accordance with the attached Master Services Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	_____ of _____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below _____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Method 200.8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002_20230104	01/04/23	1000	G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_20230104		1030	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_20230104		0800	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_20230104		0815	G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_20230104		0830	G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0002_20230104		1015	G	WM	8	Y	Y	X	X	X	X	X	X	X
ILBMP0004			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010			G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_20230104	01/04/23	0730	G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1

570-122995 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C). Obs'd _____ Corr'd: _____ Therm ID No. _____

	Company	Date/Time		Date/Time
Relinquished by	H&A	01/04/23 1300	Received by EC	1/6/23 1300
Relinquished by EC	EC	1/6/23 1815	Received by	Date/Time: 1/6/23 1815
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

1.7/1.7 2.1/2.1 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

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1/18/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-122995-1
Address: 5755 8th Street East, ,	Due Date Requested. 1/18/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
A1BMP0002_20230104 (570-122995-1)	1/4/23	10 00 Pacific		Water			X	X	2	
A1BMP0003_20230104 (570-122995-2)	1/4/23	10 30 Pacific		Water			X	X	2	
B1BMP0009_20230104 (570-122995-3)	1/4/23	08 00 Pacific		Water			X	X	2	
B1BMP0010_20230104 (570-122995-4)	1/4/23	08 15 Pacific		Water			X	X	2	
B1BMP0011_20230104 (570-122995-5)	1/4/23	08 30 Pacific		Water			X	X	2	
ILBMP0002_20230104 (570-122995-6)	1/4/23	10 15 Pacific		Water			X	X	2	
EPNDSW04_20230104 (570-122995-7)	1/4/23	07 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/19/23 1517	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/18/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No.: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122995-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
A1BMP0002_20230104 (570-122995-1)	1/4/23	10 00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
A1BMP0003_20230104 (570-122995-2)	1/4/23	10 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
B1BMP0009_20230104 (570-122995-3)	1/4/23	08 00 Pacific		Water			X	2	See QAS Boeing_w/u to zero
B1BMP0010_20230104 (570-122995-4)	1/4/23	08 15 Pacific		Water			X	2	See QAS Boeing_w/u to zero
B1BMP0011_20230104 (570-122995-5)	1/4/23	08 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
ILBMP0002_20230104 (570-122995-6)	1/4/23	10 15 Pacific		Water			X	2	See QAS Boeing_w/u to zero
EPNDSW04_20230104 (570-122995-7)	1/4/23	07 30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/9/23 1552	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/18/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122995-4

Login Number: 122995
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122995-4

Login Number: 122995
List Number: 2
Creator: LaCount, Lilly-Anna E

List Source: Eurofins Seattle
List Creation: 01/10/23 11:39 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122999-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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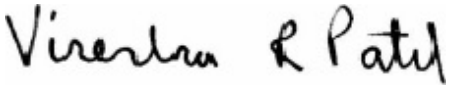
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122999-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122999-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 1/18/2023. The report (revision 1) is being revised due to: The metals reporting was adjusted to report all elements by EPA 200.8..

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.1º C.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-295045 and analytical batch 570-295171 contained Manganese above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The method blank for preparation batch 570-295156 and analytical batch 570-295404 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPSW001IE01_20230104 (570-122999-1) and A1BPSW0001_20230104 (570-122999-2). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-1

Client Sample ID: EPSW001IE01_20230104 — Lab Sample ID: 570-122999-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1.3		1.0	0.24	mg/L	1		300.0	Total/NA
Arsenic	3.6		1.0	0.16	ug/L	1		200.8	Total Recoverable
Cadmium	0.43	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	21		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	23		1.0	0.12	ug/L	1		200.8	Total Recoverable
Selenium	3.1		2.0	0.52	ug/L	1		200.8	Total Recoverable
Iron	30000		20	3.7	ug/L	1		200.8	Total Recoverable
Zinc	120		20	2.8	ug/L	1		200.8	Total Recoverable
Manganese	930	MB	1.0	0.41	ug/L	1		200.8	Total Recoverable
Arsenic	0.78	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	1.5	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.54	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Iron	960	BU	20	3.7	ug/L	1		200.8	Dissolved
Zinc	3.2	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved
Manganese	6.0	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Total Suspended Solids	1400		10	8.3	mg/L	1		SM 2540D	Total/NA

Client Sample ID: A1BPSW0001_20230104 — Lab Sample ID: 570-122999-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	0.74	J,DX	1.0	0.24	mg/L	1		300.0	Total/NA
Arsenic	0.52	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Copper	1.6	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.24	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Iron	400	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	13		1.0	0.41	ug/L	1		200.8	Total Recoverable
Arsenic	0.44	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	1.2	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	24	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	1.2	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Total Suspended Solids	35		2.0	1.7	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.3		1.0	0.24	mg/L			01/16/23 10:49	1

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.74	J,DX	1.0	0.24	mg/L			01/16/23 11:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.6**		1.0	0.16	ug/L		01/11/23 09:50	01/11/23 13:43	1
Cadmium	**0.43**	**J,DX**	1.0	0.13	ug/L		01/11/23 09:50	01/11/23 13:43	1
Copper	**21**		2.0	0.32	ug/L		01/11/23 09:50	01/11/23 13:43	1
Lead	**23**		1.0	0.12	ug/L		01/11/23 09:50	01/11/23 13:43	1
Selenium	**3.1**		2.0	0.52	ug/L		01/11/23 09:50	01/11/23 13:43	1
Iron	**30000**		20	3.7	ug/L		01/11/23 09:50	01/11/23 13:43	1
Zinc	**120**		20	2.8	ug/L		01/11/23 09:50	01/11/23 13:43	1
Manganese	**930**	**MB**	1.0	0.41	ug/L		01/11/23 09:50	01/11/23 13:43	1

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.52**	**J,DX**	1.0	0.16	ug/L		01/11/23 13:58	01/12/23 10:24	1
Cadmium	ND		1.0	0.13	ug/L		01/11/23 13:58	01/12/23 10:24	1
Copper	**1.6**	**J,DX**	2.0	0.32	ug/L		01/11/23 13:58	01/12/23 10:24	1
Lead	**0.24**	**J,DX**	1.0	0.12	ug/L		01/11/23 13:58	01/12/23 10:24	1
Selenium	ND		2.0	0.52	ug/L		01/11/23 13:58	01/12/23 10:24	1
Iron	**400**	**MB**	20	3.7	ug/L		01/11/23 13:58	01/12/23 10:24	1
Zinc	ND		20	2.8	ug/L		01/11/23 13:58	01/12/23 10:24	1
Manganese	**13**		1.0	0.41	ug/L		01/11/23 13:58	01/12/23 10:24	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.78**	**J,DX BU**	1.0	0.16	ug/L			01/10/23 11:59	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/10/23 11:59	1
Copper	**1.5**	**J,DX BU**	2.0	0.32	ug/L			01/10/23 11:59	1
Lead	**0.54**	**J,DX BU**	1.0	0.12	ug/L			01/10/23 11:59	1
Selenium	ND	BU	2.0	0.52	ug/L			01/10/23 11:59	1
Iron	**960**	**BU**	20	3.7	ug/L			01/10/23 11:59	1
Zinc	**3.2**	**J,DX BU**	20	2.8	ug/L			01/10/23 11:59	1
Manganese	**6.0**	**BU**	1.0	0.41	ug/L			01/10/23 11:59	1

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.44**	**J,DX BU**	1.0	0.16	ug/L			01/10/23 11:55	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/10/23 11:55	1
Copper	**1.2**	**J,DX BU**	2.0	0.32	ug/L			01/10/23 11:55	1
Lead	ND	BU	1.0	0.12	ug/L			01/10/23 11:55	1
Selenium	ND	BU	2.0	0.52	ug/L			01/10/23 11:55	1
Iron	**24**	**BU**	20	3.7	ug/L			01/10/23 11:55	1
Zinc	ND	BU	20	2.8	ug/L			01/10/23 11:55	1
Manganese	**1.2**	**BU**	1.0	0.41	ug/L			01/10/23 11:55	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-1

General Chemistry

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	1400		10	8.3	mg/L			01/10/23 11:19	1

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	35		2.0	1.7	mg/L			01/10/23 11:19	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-295976/5
Matrix: Water
Analysis Batch: 295976

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			01/16/23 07:43	1

Lab Sample ID: LCS 570-295976/6
Matrix: Water
Analysis Batch: 295976

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	49.9		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-295976/7
Matrix: Water
Analysis Batch: 295976

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	50.0	49.7		mg/L		99	90 - 110	0	15

Lab Sample ID: 570-124219-A-34 MS
Matrix: Water
Analysis Batch: 295976

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	11		50.0	63.4		mg/L		104	80 - 120

Lab Sample ID: 570-124219-A-34 MSD
Matrix: Water
Analysis Batch: 295976

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	11		50.0	63.6		mg/L		105	80 - 120	0	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-295045/1-A
Matrix: Water
Analysis Batch: 295165

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295045

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L		01/11/23 09:50	01/11/23 13:26	1
Cadmium	ND		1.0	0.13	ug/L		01/11/23 09:50	01/11/23 13:26	1
Copper	ND		2.0	0.32	ug/L		01/11/23 09:50	01/11/23 13:26	1
Lead	ND		1.0	0.12	ug/L		01/11/23 09:50	01/11/23 13:26	1
Selenium	ND		2.0	0.52	ug/L		01/11/23 09:50	01/11/23 13:26	1
Iron	ND		20	3.7	ug/L		01/11/23 09:50	01/11/23 13:26	1
Zinc	ND		20	2.8	ug/L		01/11/23 09:50	01/11/23 13:26	1
Manganese	0.482	J,DX	1.0	0.41	ug/L		01/11/23 09:50	01/11/23 13:26	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-295045/2-A
Matrix: Water
Analysis Batch: 295165

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295045

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	800	773		ug/L		97	85 - 115
Cadmium	800	806		ug/L		101	85 - 115
Copper	800	798		ug/L		100	85 - 115
Lead	800	818		ug/L		102	85 - 115
Selenium	800	739		ug/L		92	85 - 115
Iron	800	830		ug/L		104	85 - 115
Zinc	800	779		ug/L		97	85 - 115
Manganese	800	782		ug/L		98	85 - 115

Lab Sample ID: LCSD 570-295045/3-A
Matrix: Water
Analysis Batch: 295165

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295045

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	800	785		ug/L		98	85 - 115	2	20
Cadmium	800	826		ug/L		103	85 - 115	2	20
Copper	800	818		ug/L		102	85 - 115	2	20
Lead	800	844		ug/L		105	85 - 115	3	20
Selenium	800	749		ug/L		94	85 - 115	1	20
Iron	800	848		ug/L		106	85 - 115	2	20
Zinc	800	784		ug/L		98	85 - 115	1	20
Manganese	800	799		ug/L		100	85 - 115	2	20

Lab Sample ID: 570-122914-A-10-B MS
Matrix: Water
Analysis Batch: 295171

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 295045

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	14		800	847		ug/L		104	80 - 120
Cadmium	ND		800	794		ug/L		99	80 - 120
Copper	5.7		800	675		ug/L		84	80 - 120
Lead	0.25	J,DX	800	723		ug/L		90	80 - 120
Selenium	ND		800	736		ug/L		92	80 - 120
Iron	210		800	903		ug/L		87	80 - 120
Zinc	11	J,DX	800	731		ug/L		90	80 - 120
Manganese	75	MB	800	807		ug/L		91	80 - 120

Lab Sample ID: 570-122914-A-10-C MSD
Matrix: Water
Analysis Batch: 295171

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295045

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	14		800	827		ug/L		102	80 - 120	2	20
Cadmium	ND		800	794		ug/L		99	80 - 120	0	20
Copper	5.7		800	682		ug/L		85	80 - 120	1	20
Lead	0.25	J,DX	800	712		ug/L		89	80 - 120	2	20
Selenium	ND		800	722		ug/L		90	80 - 120	2	20
Iron	210		800	925		ug/L		90	80 - 120	2	20
Zinc	11	J,DX	800	728		ug/L		90	80 - 120	0	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-122914-A-10-C MSD
Matrix: Water
Analysis Batch: 295171

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295045

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	75	MB	800	823		ug/L		93	80 - 120	2	20

Lab Sample ID: MB 570-295156/1-A
Matrix: Water
Analysis Batch: 295404

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295156

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L		01/11/23 13:58	01/12/23 09:35	1
Cadmium	ND		1.0	0.13	ug/L		01/11/23 13:58	01/12/23 09:35	1
Copper	ND		2.0	0.32	ug/L		01/11/23 13:58	01/12/23 09:35	1
Lead	ND		1.0	0.12	ug/L		01/11/23 13:58	01/12/23 09:35	1
Selenium	ND		2.0	0.52	ug/L		01/11/23 13:58	01/12/23 09:35	1
Iron	8.02	J,DX	20	3.7	ug/L		01/11/23 13:58	01/12/23 09:35	1
Zinc	ND		20	2.8	ug/L		01/11/23 13:58	01/12/23 09:35	1
Manganese	ND		1.0	0.41	ug/L		01/11/23 13:58	01/12/23 09:35	1

Lab Sample ID: LCS 570-295156/2-A
Matrix: Water
Analysis Batch: 295404

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295156

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	79.2		ug/L		99	85 - 115
Cadmium	80.0	80.8		ug/L		101	85 - 115
Copper	80.0	80.8		ug/L		101	85 - 115
Lead	80.0	78.3		ug/L		98	85 - 115
Selenium	80.0	77.8		ug/L		97	85 - 115
Iron	800	806		ug/L		101	85 - 115
Zinc	80.0	78.3		ug/L		98	85 - 115
Manganese	80.0	80.9		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-295156/3-A
Matrix: Water
Analysis Batch: 295404

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295156

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	80.0	82.0		ug/L		102	85 - 115	3	20
Cadmium	80.0	84.3		ug/L		105	85 - 115	4	20
Copper	80.0	84.5		ug/L		106	85 - 115	4	20
Lead	80.0	82.6		ug/L		103	85 - 115	5	20
Selenium	80.0	81.8		ug/L		102	85 - 115	5	20
Iron	800	841		ug/L		105	85 - 115	4	20
Zinc	80.0	82.2		ug/L		103	85 - 115	5	20
Manganese	80.0	85.1		ug/L		106	85 - 115	5	20

Lab Sample ID: 570-123555-C-1-B MS
Matrix: Water
Analysis Batch: 295404

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 295156

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	3.0		80.0	82.7		ug/L		100	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-123555-C-1-B MS
Matrix: Water
Analysis Batch: 295404

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 295156

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	1.6		80.0	84.3		ug/L		103	80 - 120
Copper	14		80.0	89.1		ug/L		94	80 - 120
Lead	3.7		80.0	82.5		ug/L		98	80 - 120
Selenium	1.7	J,DX	80.0	76.5		ug/L		93	80 - 120
Iron	10000	MB	800	11500	BB	ug/L		185	80 - 120
Zinc	35		80.0	113		ug/L		97	80 - 120
Manganese	280		80.0	349		ug/L		87	80 - 120

Lab Sample ID: 570-123555-C-1-C MSD
Matrix: Water
Analysis Batch: 295404

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295156

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	3.0		80.0	83.2		ug/L		100	80 - 120	1	20
Cadmium	1.6		80.0	84.9		ug/L		104	80 - 120	1	20
Copper	14		80.0	90.6		ug/L		96	80 - 120	2	20
Lead	3.7		80.0	81.9		ug/L		98	80 - 120	1	20
Selenium	1.7	J,DX	80.0	76.4		ug/L		93	80 - 120	0	20
Iron	10000	MB	800	12300	BB	ug/L		279	80 - 120	6	20
Zinc	35		80.0	115		ug/L		99	80 - 120	2	20
Manganese	280		80.0	358		ug/L		98	80 - 120	2	20

Lab Sample ID: MB 570-294776/1-A
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L			01/10/23 12:07	1
Cadmium	ND		1.0	0.13	ug/L			01/10/23 12:07	1
Copper	ND		2.0	0.32	ug/L			01/10/23 12:07	1
Lead	ND		1.0	0.12	ug/L			01/10/23 12:07	1
Selenium	ND		2.0	0.52	ug/L			01/10/23 12:07	1
Iron	ND		20	3.7	ug/L			01/10/23 12:07	1
Zinc	ND		20	2.8	ug/L			01/10/23 12:07	1
Manganese	ND		1.0	0.41	ug/L			01/10/23 12:07	1

Lab Sample ID: LCS 570-294776/2-A
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	74.1		ug/L		93	85 - 115
Cadmium	80.0	75.9		ug/L		95	85 - 115
Copper	80.0	76.3		ug/L		95	85 - 115
Lead	80.0	76.7		ug/L		96	85 - 115
Selenium	80.0	75.9		ug/L		95	85 - 115
Iron	800	786		ug/L		98	85 - 115
Zinc	80.0	75.0		ug/L		94	85 - 115
Manganese	80.0	76.3		ug/L		95	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-294776/3-A
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			80.0	72.9		ug/L		91	85 - 115	2	20
Cadmium			80.0	75.0		ug/L		94	85 - 115	1	20
Copper			80.0	76.7		ug/L		96	85 - 115	0	20
Lead			80.0	75.5		ug/L		94	85 - 115	2	20
Selenium			80.0	72.7		ug/L		91	85 - 115	4	20
Iron			800	787		ug/L		98	85 - 115	0	20
Zinc			80.0	73.2		ug/L		91	85 - 115	2	20
Manganese			80.0	75.7		ug/L		95	85 - 115	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-294791/1
Matrix: Water
Analysis Batch: 294791

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/10/23 11:19	1

Lab Sample ID: LCS 570-294791/2
Matrix: Water
Analysis Batch: 294791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	110		mg/L		110	77 - 116		

Lab Sample ID: LCSD 570-294791/3
Matrix: Water
Analysis Batch: 294791

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	112		mg/L		112	77 - 116	2	10

Lab Sample ID: 570-122999-2 DU
Matrix: Water
Analysis Batch: 294791

Client Sample ID: A1BPSW0001_20230104
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	35			34.6		mg/L				2	10

HPLC/IC

Analysis Batch: 295976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Total/NA	Water	300.0	
570-122999-2	A1BPSW0001_20230104	Total/NA	Water	300.0	
MB 570-295976/5	Method Blank	Total/NA	Water	300.0	
LCS 570-295976/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-295976/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124219-A-34 MS	Matrix Spike	Total/NA	Water	300.0	
570-124219-A-34 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Filtration Batch: 294776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Dissolved	Water	Filtration	
570-122999-2	A1BPSW0001_20230104	Dissolved	Water	Filtration	
MB 570-294776/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-294776/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294776/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 294822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Dissolved	Water	200.8	294776
570-122999-2	A1BPSW0001_20230104	Dissolved	Water	200.8	294776
MB 570-294776/1-A	Method Blank	Dissolved	Water	200.8	294776
LCS 570-294776/2-A	Lab Control Sample	Dissolved	Water	200.8	294776
LCSD 570-294776/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	294776

Prep Batch: 295045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Total Recoverable	Water	200.8	
MB 570-295045/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-295045/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-295045/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-122914-A-10-B MS	Matrix Spike	Total Recoverable	Water	200.8	
570-122914-A-10-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Prep Batch: 295156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-2	A1BPSW0001_20230104	Total Recoverable	Water	200.8	
MB 570-295156/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-295156/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-295156/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-123555-C-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	
570-123555-C-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 295165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-295045/1-A	Method Blank	Total Recoverable	Water	200.8	295045
LCS 570-295045/2-A	Lab Control Sample	Total Recoverable	Water	200.8	295045
LCSD 570-295045/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	295045

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-1

Metals

Analysis Batch: 295171

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Total Recoverable	Water	200.8	295045
570-122914-A-10-B MS	Matrix Spike	Total Recoverable	Water	200.8	295045
570-122914-A-10-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	295045

Analysis Batch: 295404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-2	A1BPSW0001_20230104	Total Recoverable	Water	200.8	295156
MB 570-295156/1-A	Method Blank	Total Recoverable	Water	200.8	295156
LCS 570-295156/2-A	Lab Control Sample	Total Recoverable	Water	200.8	295156
LCSD 570-295156/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	295156
570-123555-C-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	295156
570-123555-C-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	295156

General Chemistry

Analysis Batch: 294791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Total/NA	Water	SM 2540D	
570-122999-2	A1BPSW0001_20230104	Total/NA	Water	SM 2540D	
MB 570-294791/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-294791/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-294791/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-122999-2 DU	A1BPSW0001_20230104	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-1

Client Sample ID: EPSW001IE01_20230104

Lab Sample ID: 570-122999-1

Date Collected: 01/04/23 11:30
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	295976	01/16/23 10:49	PS	EET CAL 4
	Instrument ID: IC10									
Dissolved	Filtration	Filtration			50 mL	50 mL	294776	01/10/23 11:06	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294822	01/10/23 11:59	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	295045	01/11/23 09:50	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295171	01/11/23 13:43	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	100 mL	1000 mL	294791	01/10/23 11:19	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: A1BPSW0001_20230104

Lab Sample ID: 570-122999-2

Date Collected: 01/04/23 12:00
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	295976	01/16/23 11:06	PS	EET CAL 4
	Instrument ID: IC10									
Dissolved	Filtration	Filtration			50 mL	50 mL	294776	01/10/23 11:06	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294822	01/10/23 11:55	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	295156	01/11/23 13:58	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295404	01/12/23 10:24	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	294791	01/10/23 11:19	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122999-1	EPSW001IE01_20230104	Water	01/04/23 11:30	01/06/23 18:15
570-122999-2	A1BPSW0001_20230104	Water	01/04/23 12:00	01/06/23 18:15

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals BMP Performance

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the BMP Performance program starting from data collected October 1st, 2022.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

122999

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Eurofins Calscience, Inc.

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under the CoC are to be performed in accordance with the T&Cs set forth in Blanket Service Agreement #2019-22 TestAmerica by and between Haley & Aldrich Inc its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As Cd, Cu, Pb Se Method 200.7 Fe, Mn Zn (Total Dissolved)	Method 200.8, As, Cd, Cu Pb, Se Method 200.7 Fe Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trifilum (E906.0)			Sample Specific Notes:
--	--	--			--			2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230104	01/04/23	1130	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
A1BPSW0001_20230104	↓	1200	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
Dup			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
Preservation Used: 1=Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	4	2	1	1			

570-122999 Chain of Custody

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815

Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C) Obs'd:____ Corr'd:____ Therm ID No.:____

	Company	Date/Time		Date/Time
Relinquished by	S+A	01/06/23 1300	Received by: EC	1/6/23 1300
Relinquished by:	EC	1/6/23 1815	Received by:	1/6/23 1815
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.2/2.2, 1.9/1.9 scn

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Page 23 of 28

2/2/2023 (Rev. 1)

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No.: 570-203532 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-122999-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/18/2023			
City: Earth City	TAT Requested (days):			
State Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12.00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	1/9/23 1403				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-122999-2
Address: 5755 8th Street East,	Due Date Requested: 1/24/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	X	2	
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12.00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1517	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122999-3
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	2	See QAS Boeing_w/u to zero
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203532.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-122999-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/18/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	901.1_Cs/FIII_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
Preservation Code:															
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11:30 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12:00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/9/23 1403		FED EX		
2	FED EX				JAN 10 2023 0846	ETATL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122999-1

Login Number: 122999
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/18/2023 5:02:11 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122999-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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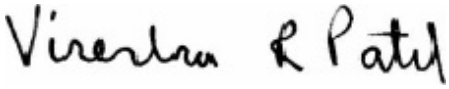
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
1/18/2023 5:02:11 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-2

Job ID: 570-122999-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122999-2

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.1º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-2

Client Sample ID: EPSW001IE01_20230104 — Lab Sample ID: 570-122999-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.039		0.00099	0.00016	ug/L	2		1631E	Total/NA
Mercury	0.0042		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: A1BPSW0001_20230104 — Lab Sample ID: 570-122999-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.011		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0050		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.039		0.00099	0.00016	ug/L			01/11/23 19:42	2

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.011		0.00050	0.000079	ug/L			01/11/23 19:46	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0042		0.00050	0.000079	ug/L			01/11/23 19:33	1

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0050		0.00050	0.000079	ug/L			01/11/23 19:38	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-415211/18
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/11/23 13:50	1

Lab Sample ID: MB 580-415211/19
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/11/23 13:55	1

Lab Sample ID: MB 580-415211/20
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/11/23 13:59	1

Lab Sample ID: LCS 580-415211/27
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00452		ug/L		90	77 - 123		

Lab Sample ID: LCSD 580-415211/28
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00475		ug/L		95	77 - 123	5	24

Lab Sample ID: 570-122995-D-7 MS
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.019		0.0300	0.0509		ug/L		107	71 - 125		

Lab Sample ID: 570-122995-D-7 MSD
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.019		0.0300	0.0499		ug/L		103	71 - 125	2	24

Lab Sample ID: 580-121818-A-1 MS
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00042	J,DX	0.00500	0.00446		ug/L		81	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-121818-A-1 MSD
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00042	J,DX	0.00500	0.00442		ug/L		80	71 - 125	1	24

Lab Sample ID: MB 580-414923/1-A
Matrix: Water
Analysis Batch: 415211

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/11/23 14:15	1

Metals

Filtration Batch: 414923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Dissolved	Water	Filtration	
570-122999-2	A1BPSW0001_20230104	Dissolved	Water	Filtration	
MB 580-414923/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 415211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Dissolved	Water	1631E	414923
570-122999-1	EPSW001IE01_20230104	Total/NA	Water	1631E	
570-122999-2	A1BPSW0001_20230104	Dissolved	Water	1631E	414923
570-122999-2	A1BPSW0001_20230104	Total/NA	Water	1631E	
MB 580-414923/1-A	Method Blank	Dissolved	Water	1631E	414923
MB 580-415211/18	Method Blank	Total/NA	Water	1631E	
MB 580-415211/19	Method Blank	Total/NA	Water	1631E	
MB 580-415211/20	Method Blank	Total/NA	Water	1631E	
LCS 580-415211/27	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-415211/28	Lab Control Sample Dup	Total/NA	Water	1631E	
570-122995-D-7 MS	Matrix Spike	Total/NA	Water	1631E	
570-122995-D-7 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-121818-A-1 MS	Matrix Spike	Total/NA	Water	1631E	
580-121818-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-2

Client Sample ID: EPSW001IE01_20230104

Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414923	01/10/23 11:50	LEL	EET SEA
Dissolved	Analysis	1631E		1			415211	01/11/23 19:33	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		2			415211	01/11/23 19:42	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: A1BPSW0001_20230104

Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	414923	01/10/23 11:50	LEL	EET SEA
Dissolved	Analysis	1631E		1			415211	01/11/23 19:38	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415211	01/11/23 19:46	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122999-2
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122999-1	EPSW001IE01_20230104	Water	01/04/23 11:30	01/06/23 18:15
570-122999-2	A1BPSW0001_20230104	Water	01/04/23 12:00	01/06/23 18:15

122999

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Eurofins Calscience, Inc.

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under the CoC are to be performed in accordance with the T&Cs set forth in Blanket Service Agreement #2019-22 TestAmerica by and between Haley & Aldrich Inc its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As Cd, Cu, Pb Se Method 200.7 Fe, Mn Zn (Total Dissolved)	Method 200.8, As, Cd, Cu Pb, Se Method 200.7 Fe Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trifilum (E906.0)				Sample Specific Notes:
--	--	--	--		--			2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230104	01/04/23	1130	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
A1BPSW0001_20230104	〃	1200	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
~~DUP~~			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1=Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	4	2	1	1				

570-122999 Chain of Custody

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815

Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C) Obs'd:____ Corr'd:____ Therm ID No.:____

	Company	Date/Time		Date/Time
Relinquished by	S+A	01/06/23 1327	Received by: EC	1/6/23 1300
Relinquished by: EC	EC	1/6/23 1815	Received by:	1/6/23 1815
Relinquished by	Company	Date/Time:	Received in Laboratory by	Date/Time:

2.2/2.2, 1.9/1.9 scn

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

Page 16 of 22

1/18/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No.: 570-203532 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-122999-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/18/2023			
City: Earth City	TAT Requested (days):			
State Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12.00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1403				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/18/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-122999-2
Address: 5755 8th Street East,	Due Date Requested: 1/24/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	X	2	
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12.00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1517	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/18/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122999-3
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	2	See QAS Boeing_w/u to zero
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

1/18/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203575.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-122999-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/24/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11:30 Pacific		Water			X	X	2	
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 1/9/23 1517	Company: EC	Received by: [signature]	Date/Time: 1-10-23 0975	Company: EET: NW
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: ~0.1°C w/o CF 0.1°C w/CF		

 EF(7) SC dig 0

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122999-2

Login Number: 122999
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122999-2

Login Number: 122999
List Number: 3
Creator: LaCount, Lilly-Anna E

List Source: Eurofins Seattle
List Creation: 01/10/23 11:39 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122999-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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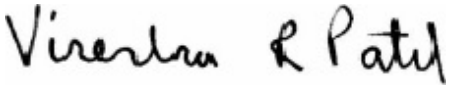
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-3

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122999-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122999-3

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following samples were received with insufficient preservation at a pH of >2 SU: EPSW001IE01_20230104 (570-122999-1) and A1BPSW0001_20230104 (570-122999-2). 570-122999-J-1 and K-2. The samples were preserved to the appropriate pH in the laboratory.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: EPSW001IE01_20230104 (570-122999-1), A1BPSW0001_20230104 (570-122999-2) and (CCV 320-652595/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-3

Client Sample ID: EPSW001IE01_20230104 — Lab Sample ID: 570-122999-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000013	J,DX	0.000050	0.00000049	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000014	J,DX MB q	0.000050	0.00000040	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000013	J,DX	0.000050	0.00000051	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000042	J,DX MB	0.000050	0.00000064	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.000012	J,DX MB	0.000050	0.00000064	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000085	J,DX MB	0.000050	0.00000057	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000098	J,DX MB	0.000050	0.00000096	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.000012	J,DX MB	0.000050	0.00000084	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.000011	J,DX MB	0.000050	0.00000070	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00033	MB	0.000050	0.000010	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00019	MB	0.000050	0.0000029	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000041	J,DX MB	0.000050	0.0000028	ug/L	1		1613B	Total/NA
OCDD	0.0014	MB	0.00010	0.0000090	ug/L	1		1613B	Total/NA
OCDF	0.00011	MB	0.00010	0.00000079	ug/L	1		1613B	Total/NA
Total TCDD	0.0000022	J,DX q	0.000010	0.00000076	ug/L	1		1613B	Total/NA
Total TCDF	0.0000020	J,DX q	0.000010	0.00000028	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000055	J,DX q	0.000050	0.00000049	ug/L	1		1613B	Total/NA
Total PeCDF	0.000026	J,DX MB q	0.000050	0.00000040	ug/L	1		1613B	Total/NA
Total HxCDD	0.00011	J,DX MB q	0.000050	0.00000057	ug/L	1		1613B	Total/NA
Total HxCDF	0.00015	J,DX MB	0.000050	0.00000070	ug/L	1		1613B	Total/NA
Total HpCDD	0.00062	MB	0.000050	0.000010	ug/L	1		1613B	Total/NA
Total HpCDF	0.00027	J,DX MB	0.000050	0.0000028	ug/L	1		1613B	Total/NA

Client Sample ID: A1BPSW0001_20230104 — Lab Sample ID: 570-122999-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000064	J,DX	0.000048	0.00000032	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.00000068	J,DX MB	0.000048	0.00000022	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000053	J,DX q	0.000048	0.00000027	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000024	J,DX MB	0.000048	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000010	J,DX MB q	0.000048	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000072	J,DX MB q	0.000048	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000011	J,DX MB	0.000048	0.00000031	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample ID: A1BPSW0001_20230104 (Continued)

Lab Sample ID: 570-122999-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,6,7,8-HxCDF	0.00000070	J,DX MB q	0.000048	0.00000027	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000047	J,DX MB q	0.000048	0.00000026	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000060	J,DX MB	0.000048	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000089	J,DX MB	0.000048	0.00000054	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000023	J,DX MB q	0.000048	0.00000025	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000045	J,DX MB q	0.000048	0.00000026	ug/L	1		1613B	Total/NA
OCDD	0.000081	J,DX MB	0.000096	0.0000010	ug/L	1		1613B	Total/NA
OCDF	0.0000041	J,DX MB	0.000096	0.00000031	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000064	J,DX	0.000048	0.00000032	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000012	J,DX MB q	0.000048	0.00000022	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000070	J,DX MB q	0.000048	0.00000018	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000028	J,DX MB q	0.000048	0.00000024	ug/L	1		1613B	Total/NA
Total HpCDD	0.000021	J,DX MB	0.000048	0.00000054	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000048	J,DX MB q	0.000048	0.00000025	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000076	ug/L		02/03/23 10:06	02/07/23 17:45	1
1,2,3,7,8-PeCDD	**0.0000013**	**J,DX**	0.000050	0.00000049	ug/L		02/03/23 10:06	02/07/23 17:45	1
1,2,3,7,8-PeCDF	**0.0000014**	**J,DX MB q**	0.000050	0.00000040	ug/L		02/03/23 10:06	02/07/23 17:45	1
2,3,4,7,8-PeCDF	**0.0000013**	**J,DX**	0.000050	0.00000051	ug/L		02/03/23 10:06	02/07/23 17:45	1
1,2,3,4,7,8-HxCDD	**0.0000042**	**J,DX MB**	0.000050	0.00000064	ug/L		02/03/23 10:06	02/07/23 17:45	1
1,2,3,6,7,8-HxCDD	**0.000012**	**J,DX MB**	0.000050	0.00000064	ug/L		02/03/23 10:06	02/07/23 17:45	1
1,2,3,7,8,9-HxCDD	**0.0000085**	**J,DX MB**	0.000050	0.00000057	ug/L		02/03/23 10:06	02/07/23 17:45	1
1,2,3,4,7,8-HxCDF	**0.0000098**	**J,DX MB**	0.000050	0.00000096	ug/L		02/03/23 10:06	02/07/23 17:45	1
1,2,3,6,7,8-HxCDF	**0.000012**	**J,DX MB**	0.000050	0.00000084	ug/L		02/03/23 10:06	02/07/23 17:45	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.00000080	ug/L		02/03/23 10:06	02/07/23 17:45	1
2,3,4,6,7,8-HxCDF	**0.000011**	**J,DX MB**	0.000050	0.00000070	ug/L		02/03/23 10:06	02/07/23 17:45	1
1,2,3,4,6,7,8-HpCDD	**0.00033**	**MB**	0.000050	0.000010	ug/L		02/03/23 10:06	02/07/23 17:45	1
1,2,3,4,6,7,8-HpCDF	**0.00019**	**MB**	0.000050	0.0000029	ug/L		02/03/23 10:06	02/07/23 17:45	1
1,2,3,4,7,8,9-HpCDF	**0.0000041**	**J,DX MB**	0.000050	0.0000028	ug/L		02/03/23 10:06	02/07/23 17:45	1
OCDD	**0.0014**	**MB**	0.00010	0.0000090	ug/L		02/03/23 10:06	02/07/23 17:45	1
OCDF	**0.00011**	**MB**	0.00010	0.00000079	ug/L		02/03/23 10:06	02/07/23 17:45	1
Total TCDD	**0.0000022**	**J,DX q**	0.000010	0.00000076	ug/L		02/03/23 10:06	02/07/23 17:45	1
Total TCDF	**0.0000020**	**J,DX q**	0.000010	0.00000028	ug/L		02/03/23 10:06	02/07/23 17:45	1
Total PeCDD	**0.0000055**	**J,DX q**	0.000050	0.00000049	ug/L		02/03/23 10:06	02/07/23 17:45	1
Total PeCDF	**0.000026**	**J,DX MB q**	0.000050	0.00000040	ug/L		02/03/23 10:06	02/07/23 17:45	1
Total HxCDD	**0.00011**	**J,DX MB q**	0.000050	0.00000057	ug/L		02/03/23 10:06	02/07/23 17:45	1
Total HxCDF	**0.00015**	**J,DX MB**	0.000050	0.00000070	ug/L		02/03/23 10:06	02/07/23 17:45	1
Total HpCDD	**0.00062**	**MB**	0.000050	0.000010	ug/L		02/03/23 10:06	02/07/23 17:45	1
Total HpCDF	**0.00027**	**J,DX MB**	0.000050	0.0000028	ug/L		02/03/23 10:06	02/07/23 17:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*66*		*25 - 164*	*02/03/23 10:06*	*02/07/23 17:45*	*1*
13C-2,3,7,8-TCDF	*66*		*24 - 169*	*02/03/23 10:06*	*02/07/23 17:45*	*1*
13C-1,2,3,7,8-PeCDD	*68*		*25 - 181*	*02/03/23 10:06*	*02/07/23 17:45*	*1*
13C-1,2,3,7,8-PeCDF	*68*		*24 - 185*	*02/03/23 10:06*	*02/07/23 17:45*	*1*
13C-2,3,4,7,8-PeCDF	*61*		*21 - 178*	*02/03/23 10:06*	*02/07/23 17:45*	*1*
13C-1,2,3,4,7,8-HxCDD	*60*		*32 - 141*	*02/03/23 10:06*	*02/07/23 17:45*	*1*
13C-1,2,3,6,7,8-HxCDD	*65*		*28 - 130*	*02/03/23 10:06*	*02/07/23 17:45*	*1*
13C-1,2,3,4,7,8-HxCDF	*55*		*26 - 152*	*02/03/23 10:06*	*02/07/23 17:45*	*1*
13C-1,2,3,6,7,8-HxCDF	*64*		*26 - 123*	*02/03/23 10:06*	*02/07/23 17:45*	*1*
13C-1,2,3,7,8,9-HxCDF	*74*		*29 - 147*	*02/03/23 10:06*	*02/07/23 17:45*	*1*
13C-2,3,4,6,7,8-HxCDF	*73*		*28 - 136*	*02/03/23 10:06*	*02/07/23 17:45*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,4,6,7,8-HpCDD	69		23 - 140	02/03/23 10:06	02/07/23 17:45	1
13C-1,2,3,4,6,7,8-HpCDF	59		28 - 143	02/03/23 10:06	02/07/23 17:45	1
13C-1,2,3,4,7,8,9-HpCDF	70		26 - 138	02/03/23 10:06	02/07/23 17:45	1
13C-OCDD	70		17 - 157	02/03/23 10:06	02/07/23 17:45	1
13C-OCDF	69		17 - 157	02/03/23 10:06	02/07/23 17:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	88		35 - 197	02/03/23 10:06	02/07/23 17:45	1

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000096	0.0000013	ug/L		02/03/23 10:06	02/07/23 18:32	1
2,3,7,8-TCDF	ND		0.0000096	0.0000007 7	ug/L		02/03/23 10:06	02/07/23 18:32	1
1,2,3,7,8-PeCDD	**0.00000064**	**J,DX**	0.000048	0.0000003 2	ug/L		02/03/23 10:06	02/07/23 18:32	1
1,2,3,7,8-PeCDF	**0.00000068**	**J,DX MB**	0.000048	0.0000002 2	ug/L		02/03/23 10:06	02/07/23 18:32	1
2,3,4,7,8-PeCDF	**0.00000053**	**J,DX q**	0.000048	0.0000002 7	ug/L		02/03/23 10:06	02/07/23 18:32	1
1,2,3,4,7,8-HxCDD	**0.0000024**	**J,DX MB**	0.000048	0.0000002 1	ug/L		02/03/23 10:06	02/07/23 18:32	1
1,2,3,6,7,8-HxCDD	**0.0000010**	**J,DX MB q**	0.000048	0.0000002 1	ug/L		02/03/23 10:06	02/07/23 18:32	1
1,2,3,7,8,9-HxCDD	**0.00000072**	**J,DX MB q**	0.000048	0.0000001 8	ug/L		02/03/23 10:06	02/07/23 18:32	1
1,2,3,4,7,8-HxCDF	**0.0000011**	**J,DX MB**	0.000048	0.0000003 1	ug/L		02/03/23 10:06	02/07/23 18:32	1
1,2,3,6,7,8-HxCDF	**0.00000070**	**J,DX MB q**	0.000048	0.0000002 7	ug/L		02/03/23 10:06	02/07/23 18:32	1
1,2,3,7,8,9-HxCDF	**0.00000047**	**J,DX MB q**	0.000048	0.0000002 6	ug/L		02/03/23 10:06	02/07/23 18:32	1
2,3,4,6,7,8-HxCDF	**0.00000060**	**J,DX MB**	0.000048	0.0000002 4	ug/L		02/03/23 10:06	02/07/23 18:32	1
1,2,3,4,6,7,8-HpCDD	**0.0000089**	**J,DX MB**	0.000048	0.0000005 4	ug/L		02/03/23 10:06	02/07/23 18:32	1
1,2,3,4,6,7,8-HpCDF	**0.0000023**	**J,DX MB q**	0.000048	0.0000002 5	ug/L		02/03/23 10:06	02/07/23 18:32	1
1,2,3,4,7,8,9-HpCDF	**0.00000045**	**J,DX MB q**	0.000048	0.0000002 6	ug/L		02/03/23 10:06	02/07/23 18:32	1
OCDD	**0.000081**	**J,DX MB**	0.000096	0.0000010	ug/L		02/03/23 10:06	02/07/23 18:32	1
OCDF	**0.0000041**	**J,DX MB**	0.000096	0.0000003 1	ug/L		02/03/23 10:06	02/07/23 18:32	1
Total TCDD	ND		0.0000096	0.0000013	ug/L		02/03/23 10:06	02/07/23 18:32	1
Total TCDF	ND		0.0000096	0.0000007 7	ug/L		02/03/23 10:06	02/07/23 18:32	1
Total PeCDD	**0.00000064**	**J,DX**	0.000048	0.0000003 2	ug/L		02/03/23 10:06	02/07/23 18:32	1
Total PeCDF	**0.0000012**	**J,DX MB q**	0.000048	0.0000002 2	ug/L		02/03/23 10:06	02/07/23 18:32	1
Total HxCDD	**0.0000070**	**J,DX MB q**	0.000048	0.0000001 8	ug/L		02/03/23 10:06	02/07/23 18:32	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HxCDF	0.0000028	J,DX MB q	0.000048	0.00000024	ug/L		02/03/23 10:06	02/07/23 18:32	1
Total HpCDD	0.000021	J,DX MB	0.000048	0.00000054	ug/L		02/03/23 10:06	02/07/23 18:32	1
Total HpCDF	0.0000048	J,DX MB q	0.000048	0.00000025	ug/L		02/03/23 10:06	02/07/23 18:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*75*		*25 - 164*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-2,3,7,8-TCDF	*73*		*24 - 169*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-1,2,3,7,8-PeCDD	*75*		*25 - 181*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-1,2,3,7,8-PeCDF	*75*		*24 - 185*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-2,3,4,7,8-PeCDF	*68*		*21 - 178*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-1,2,3,4,7,8-HxCDD	*67*		*32 - 141*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-1,2,3,6,7,8-HxCDD	*74*		*28 - 130*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-1,2,3,4,7,8-HxCDF	*62*		*26 - 152*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-1,2,3,6,7,8-HxCDF	*73*		*26 - 123*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-1,2,3,7,8,9-HxCDF	*82*		*29 - 147*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-2,3,4,6,7,8-HxCDF	*80*		*28 - 136*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*75*		*23 - 140*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*66*		*28 - 143*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*76*		*26 - 138*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-OCDD	*76*		*17 - 157*	*02/03/23 10:06*	*02/07/23 18:32*	*1*
13C-OCDF	*74*		*17 - 157*	*02/03/23 10:06*	*02/07/23 18:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*90*		*35 - 197*	*02/03/23 10:06*	*02/07/23 18:32*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-3

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.00000038	ug/L		02/03/23 10:06	02/08/23 19:56	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*63*		*24 - 169*	*02/03/23 10:06*	*02/08/23 19:56*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*102*		*35 - 197*	*02/03/23 10:06*	*02/08/23 19:56*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	37TCDD (35-197)							
570-122999-1	EPSW001IE01_20230104	88							
570-122999-1 - RA	EPSW001IE01_20230104	102							
570-122999-2	A1BPSW0001_20230104	90							
MB 320-651610/1-A	Method Blank	91							

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	37TCDD (31-191)							
LCS 320-651610/2-A	Lab Control Sample	89							
LCSD 320-651610/3-A	Lab Control Sample Dup	91							

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-122999-1	EPSW001IE01_20230104	66	66	68	68	61	60	65	55
570-122999-1 - RA	EPSW001IE01_20230104		63						
570-122999-2	A1BPSW0001_20230104	75	73	75	75	68	67	74	62
MB 320-651610/1-A	Method Blank	71	69	72	72	65	65	69	58

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-122999-1	EPSW001IE01_20230104	64	74	73	69	59	70	70	69
570-122999-1 - RA	EPSW001IE01_20230104								
570-122999-2	A1BPSW0001_20230104	73	82	80	75	66	76	76	74
MB 320-651610/1-A	Method Blank	70	78	78	71	64	72	71	70

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-651610/2-A	Lab Control Sample	67	66	70	69	68	67	72	62
LCSD 320-651610/3-A	Lab Control Sample Dup	71	69	74	73	69	65	74	62

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-651610/2-A	Lab Control Sample	71	75	74	69	66	70	71	70
LCSD 320-651610/3-A	Lab Control Sample Dup	73	78	78	73	67	74	76	74

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122999-3
Project/Site: Boeing SSFL ISRA and BMP

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-651610/1-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651610

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000011	ug/L		02/03/23 10:06	02/07/23 14:39	1
2,3,7,8-TCDF	ND		0.000010	0.00000026	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000047	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8-PeCDF	0.000000524	J,DX	0.000050	0.00000024	ug/L		02/03/23 10:06	02/07/23 14:39	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000029	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,7,8-HxCDD	0.00000235	J,DX	0.000050	0.00000035	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,6,7,8-HxCDD	0.000000472	J,DX	0.000050	0.00000034	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8,9-HxCDD	0.000000555	J,DX q	0.000050	0.00000031	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,7,8-HxCDF	0.000000363	J,DX q	0.000050	0.00000022	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,6,7,8-HxCDF	0.000000299	J,DX q	0.000050	0.00000020	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,7,8,9-HxCDF	0.000000640	J,DX	0.000050	0.00000019	ug/L		02/03/23 10:06	02/07/23 14:39	1
2,3,4,6,7,8-HxCDF	0.000000315	J,DX q	0.000050	0.00000017	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,6,7,8-HpCDD	0.00000160	J,DX	0.000050	0.00000018	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,6,7,8-HpCDF	0.00000125	J,DX q	0.000050	0.00000023	ug/L		02/03/23 10:06	02/07/23 14:39	1
1,2,3,4,7,8,9-HpCDF	0.000000762	J,DX	0.000050	0.00000024	ug/L		02/03/23 10:06	02/07/23 14:39	1
OCDD	0.00000491	J,DX	0.00010	0.00000033	ug/L		02/03/23 10:06	02/07/23 14:39	1
OCDF	0.00000107	J,DX q	0.00010	0.00000052	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total TCDD	ND		0.000010	0.0000011	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total TCDF	ND		0.000010	0.00000026	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total PeCDD	ND		0.000050	0.00000047	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total PeCDF	0.000000524	J,DX	0.000050	0.00000024	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HxCDD	0.00000337	J,DX q	0.000050	0.00000031	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HxCDF	0.00000162	J,DX q	0.000050	0.00000017	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HpCDD	0.00000368	J,DX	0.000050	0.00000018	ug/L		02/03/23 10:06	02/07/23 14:39	1
Total HpCDF	0.00000201	J,DX q	0.000050	0.00000023	ug/L		02/03/23 10:06	02/07/23 14:39	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*02/03/23 10:06*	*02/07/23 14:39*	*1*
13C-2,3,7,8-TCDF	*69*		*24 - 169*	*02/03/23 10:06*	*02/07/23 14:39*	*1*
13C-1,2,3,7,8-PeCDD	*72*		*25 - 181*	*02/03/23 10:06*	*02/07/23 14:39*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 185*	*02/03/23 10:06*	*02/07/23 14:39*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-651610/1-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651610

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	65		21 - 178	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,7,8-HxCDD	65		32 - 141	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,6,7,8-HxCDD	69		28 - 130	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,7,8-HxCDF	58		26 - 152	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,6,7,8-HxCDF	70		26 - 123	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,7,8,9-HxCDF	78		29 - 147	02/03/23 10:06	02/07/23 14:39	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,6,7,8-HpCDD	71		23 - 140	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,6,7,8-HpCDF	64		28 - 143	02/03/23 10:06	02/07/23 14:39	1
13C-1,2,3,4,7,8,9-HpCDF	72		26 - 138	02/03/23 10:06	02/07/23 14:39	1
13C-OCDD	71		17 - 157	02/03/23 10:06	02/07/23 14:39	1
13C-OCDF	70		17 - 157	02/03/23 10:06	02/07/23 14:39	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	02/03/23 10:06	02/07/23 14:39	1

Lab Sample ID: LCS 320-651610/2-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651610

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000219		ug/L		110	67 - 158		
2,3,7,8-TCDF			0.000200	0.000226		ug/L		113	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.00106		ug/L		106	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.00107	MB	ug/L		107	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.00107		ug/L		107	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.00104	MB	ug/L		104	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00110	MB	ug/L		110	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.00109	MB	ug/L		109	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.00107	MB	ug/L		107	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.00108	MB	ug/L		108	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.00108	MB	ug/L		108	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00110	MB	ug/L		110	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.00109	MB	ug/L		109	78 - 138		
OCDD			0.00200	0.00214	MB	ug/L		107	78 - 144		
OCDF			0.00200	0.00227	MB	ug/L		113	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	67		20 - 175
13C-2,3,7,8-TCDF	66		22 - 152
13C-1,2,3,7,8-PeCDD	70		21 - 227
13C-1,2,3,7,8-PeCDF	69		21 - 192
13C-2,3,4,7,8-PeCDF	68		13 - 328
13C-1,2,3,4,7,8-HxCDD	67		21 - 193
13C-1,2,3,6,7,8-HxCDD	72		25 - 163
13C-1,2,3,4,7,8-HxCDF	62		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-651610/2-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651610

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	71		21 - 159
13C-1,2,3,7,8,9-HxCDF	75		17 - 205
13C-2,3,4,6,7,8-HxCDF	74		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	69		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	66		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	70		20 - 186
13C-OCDD	71		13 - 199
13C-OCDF	70		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	89		31 - 191

Lab Sample ID: LCSD 320-651610/3-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651610

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000220		ug/L		110	67 - 158	1	50
2,3,7,8-TCDF			0.000200	0.000235		ug/L		117	75 - 158	4	50
1,2,3,7,8-PeCDD			0.00100	0.00109		ug/L		109	70 - 142	3	50
1,2,3,7,8-PeCDF			0.00100	0.00111	MB	ug/L		111	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.00111		ug/L		111	68 - 160	3	50
1,2,3,4,7,8-HxCDD			0.00100	0.00115	MB	ug/L		115	70 - 164	10	50
1,2,3,6,7,8-HxCDD			0.00100	0.00108	MB	ug/L		108	76 - 134	1	50
1,2,3,7,8,9-HxCDD			0.00100	0.00118	MB	ug/L		118	64 - 162	8	50
1,2,3,4,7,8-HxCDF			0.00100	0.00114	MB	ug/L		114	72 - 134	6	50
1,2,3,6,7,8-HxCDF			0.00100	0.00111	MB	ug/L		111	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00111	MB	ug/L		111	78 - 130	3	50
2,3,4,6,7,8-HxCDF			0.00100	0.00112	MB	ug/L		112	70 - 156	3	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00112	MB	ug/L		112	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00114	MB	ug/L		114	82 - 122	3	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00112	MB	ug/L		112	78 - 138	3	50
OCDD			0.00200	0.00221	MB	ug/L		111	78 - 144	3	50
OCDF			0.00200	0.00234	MB	ug/L		117	63 - 170	3	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	71		20 - 175
13C-2,3,7,8-TCDF	69		22 - 152
13C-1,2,3,7,8-PeCDD	74		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 192
13C-2,3,4,7,8-PeCDF	69		13 - 328
13C-1,2,3,4,7,8-HxCDD	65		21 - 193
13C-1,2,3,6,7,8-HxCDD	74		25 - 163
13C-1,2,3,4,7,8-HxCDF	62		19 - 202
13C-1,2,3,6,7,8-HxCDF	73		21 - 159
13C-1,2,3,7,8,9-HxCDF	78		17 - 205
13C-2,3,4,6,7,8-HxCDF	78		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	73		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-651610/3-A
Matrix: Water
Analysis Batch: 652417

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651610

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	67		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	74		20 - 186
13C-OCDD	76		13 - 199
13C-OCDF	74		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	91		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-3

Specialty Organics

Prep Batch: 651610

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1 - RA	EPSW001IE01_20230104	Total/NA	Water	1613B	
570-122999-1	EPSW001IE01_20230104	Total/NA	Water	1613B	
570-122999-2	A1BPSW0001_20230104	Total/NA	Water	1613B	
MB 320-651610/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-651610/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-651610/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 652417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Total/NA	Water	1613B	651610
570-122999-2	A1BPSW0001_20230104	Total/NA	Water	1613B	651610
MB 320-651610/1-A	Method Blank	Total/NA	Water	1613B	651610
LCS 320-651610/2-A	Lab Control Sample	Total/NA	Water	1613B	651610
LCSD 320-651610/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	651610

Analysis Batch: 652595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1 - RA	EPSW001IE01_20230104	Total/NA	Water	1613B	651610

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-3

Client Sample ID: EPSW001IE01_20230104

Lab Sample ID: 570-122999-1

Date Collected: 01/04/23 11:30
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		993.2 mL	20.0 uL	651610	02/03/23 10:06	CGB	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	652595	02/08/23 19:56	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			993.2 mL	20.0 uL	651610	02/03/23 10:06	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	652417	02/07/23 17:45	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: A1BPSW0001_20230104

Lab Sample ID: 570-122999-2

Date Collected: 01/04/23 12:00
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1043.5 mL	20.0 uL	651610	02/03/23 10:06	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	652417	02/07/23 18:32	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-3

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-3

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122999-1	EPSW001IE01_20230104	Water	01/04/23 11:30	01/06/23 18:15
570-122999-2	A1BPSW0001_20230104	Water	01/04/23 12:00	01/06/23 18:15

122999

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Eurofins Calscience, Inc.

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under the CoC are to be performed in accordance with the T&Cs set forth in Blanket Service Agreement #2019-22 TestAmerica by and between Haley & Aldrich Inc its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As Cd, Cu, Pb Se Method 200.7 Fe, Mn Zn (Total Dissolved)	Method 200.8, As, Cd, Cu Pb, Se Method 200.7 Fe Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trifilum (E906.0)	Sample Specific Notes:
--	--	--	--		--			2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber	Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230104	01/04/23	1130	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x	
A1BPSW0001_20230104	↓	1200	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x	
Dup			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x	
Preservation Used: 1=Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	4	2	1	1	

570-122999 Chain of Custody

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C) Obs'd:____ Corr'd:____ Therm ID No.:____

	Company	Date/Time		Date/Time
Relinquished by	H+A	01/06/23 1727	Received by: EC	1/6/23 1300
Relinquished by: EC	EC	1/6/23 1815	Received by:	1/6/23 1815
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.2/2.2, 1.9/1.9 scn

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2/13/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No.: 570-203532 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-122999-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/18/2023			
City: Earth City	TAT Requested (days):			
State Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12.00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1403				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-122999-2
Address: 5755 8th Street East,	Due Date Requested: 1/24/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	X	2	
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12.00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1517	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122999-3
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	2	See QAS Boeing_w/u to zero
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/9/23 1552	Company EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203580.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122999-3
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 1/4/23 1552	Company EC	Received by: Date/Time: 1/10/23 1000 Company GSW
Relinquished by:	Date/Time:	Company	Received by: Date/Time: Company
Relinquished by:	Date/Time:	Company	Received by: Date/Time: Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal		Cooler Temperature(s) °C and Other Remarks: 2.4c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122999-3

Login Number: 122999
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122999-3

Login Number: 122999
List Number: 4
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 01/10/23 04:14 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4c 1.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/13/2023 2:08:24 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-122999-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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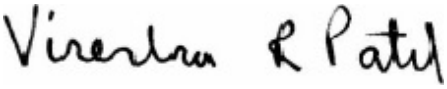
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-4

Qualifiers

Rad

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-4

Job ID: 570-122999-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122999-4

Comments
No additional comments.

Receipt
The samples were received on 1/6/2023 6:15 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following samples were received with insufficient preservation at a pH of >2 SU: EPSW001IE01_20230104 (570-122999-1) and A1BPSW0001_20230104 (570-122999-2). 570-122999-J-1 and K-2. The samples were preserved to the appropriate pH in the laboratory.

RAD
Method 900.0: Gross Alpha Gross Beta batch 596518
The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass: EPSW001IE01_20230104 (570-122999-1). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha Gross Beta batch 596518
Although the sample was prepped at full volume the detection goal was not met for the sample duplicate. However the purpose of the DUP is to demonstrate batch precision. The precision was within control limits demonstrating no adverse effect from the discrepancy.

(160-48520-A-2-G DU)

Method 900.0: Gross Alpha Gross Beta batch 596518
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20230104 (570-122999-1), A1BPSW0001_20230104 (570-122999-2), (LCS 160-596518/2-A), (LCSB 160-596518/3-A), (MB 160-596518/1-A), (160-48520-A-2-B), (160-48520-A-2-G DU), (160-48520-A-2-E MS) and (160-48520-A-2-F MSBT)

Method 900.0: Gross Alpha Beta prep batch 160-597281:

The matrix spike (MS) recoveries for gross alpha were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits. (570-123038-A-2-E MS)

Method 900.0: Gross Alpha Beta prep batch 160-597281:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPSW001IE01_20230104 (570-122999-1), A1BPSW0001_20230104 (570-122999-2), (LCS 160-597281/2-A), (LCSB 160-597281/3-A), (MB 160-597281/1-A), (570-123038-A-2-D), (570-123038-A-2-G DU), (570-123038-A-2-E MS) and (570-123038-A-2-F MSBT)

Method 901.1: Gamma Prep Batch 160-596761
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234

Job ID: 570-122999-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_20230104 (570-122999-1), A1BPSW0001_20230104 (570-122999-2), (570-122687-U-1-D) and (570-122687-U-1-J DU)

Method 901.1: Gamma Prep Batch 160-597241
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is

Job ID: 570-122999-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_20230104 (570-122999-1), A1BPSW0001_20230104 (570-122999-2), (570-123234-AI-1-D) and (570-123234-AI-1-E DU)

Method 906.0: Tritium 597258
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPSW001IE01_20230104 (570-122999-1), A1BPSW0001_20230104 (570-122999-2), (LCS 160-597258/2-A), (MB 160-597258/1-A), (160-48493-A-2-A), (160-48493-A-2-B MS), (160-48582-A-1-A) and (160-48582-A-1-C DU)

Method A-01-R: Isotopic Uranium batch 597259
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20230104 (570-122999-1), A1BPSW0001_20230104 (570-122999-2), (LCS 160-597259/2-A), (MB 160-597259/1-A), (570-123038-A-2-B) and (570-123038-A-2-C DU)

Methods A-01-R, U-02-RC: Isotopic Uranium batch 597538
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20230104 (570-122999-1), A1BPSW0001_20230104 (570-122999-2), (LCS 160-597538/2-A), (MB 160-597538/1-A), (570-123671-T-2-E) and (570-123671-T-2-F DU)

Method ExtChrom: Uranium Prep Batch 160-597259

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPSW001IE01_20230104 (570-122999-1).

Method ExtChrom: Uranium Prep Batch 160-597538

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPSW001IE01_20230104 (570-122999-1).

Method LSC_Dist_Susp:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-4

Client Sample ID: EPSW001IE01_20230104 — Lab Sample ID: 570-122999-1

No Detections.

Client Sample ID: A1BPSW0001_20230104 — Lab Sample ID: 570-122999-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-4

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	25.1	G	6.26	6.89	3.00	6.62	pCi/L	01/11/23 13:31	01/18/23 13:09	1
Gross Beta	20.2		2.60	3.29	4.00	2.36	pCi/L	01/11/23 13:31	01/18/23 13:09	1

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	2.23		1.11	1.14	3.00	1.45	pCi/L	01/11/23 13:31	01/18/23 13:09	1
Gross Beta	3.35		0.813	0.880	4.00	0.955	pCi/L	01/11/23 13:31	01/18/23 13:09	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPSW001IE01_20230104
Lab Sample ID: 570-122999-1
Date Collected: 01/04/23 11:30
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**4.20**		1.32	1.40	3.00	1.33	pCi/L	01/18/23 10:03	02/01/23 19:05	1
Gross Beta	**3.26**		0.907	0.964	4.00	1.15	pCi/L	01/18/23 10:03	02/01/23 19:05	1

Client Sample ID: A1BPSW0001_20230104
Lab Sample ID: 570-122999-2
Date Collected: 01/04/23 12:00
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.0713	U	0.585	0.585	3.00	1.16	pCi/L	01/18/23 10:03	02/01/23 19:05	1
Gross Beta	0.593	U	0.520	0.523	4.00	0.830	pCi/L	01/18/23 10:03	02/01/23 19:05	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.255	U	8.12	8.12	20.0	9.60	pCi/L	01/12/23 14:04	01/27/23 15:15	1
Potassium-40	-37.5	U	84.4	84.5		120	pCi/L	01/12/23 14:04	01/27/23 15:15	1

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.73	U	6.59	6.60	20.0	8.02	pCi/L	01/12/23 14:04	02/02/23 20:50	1
Potassium-40	64.6	U	71.6	72.0		93.7	pCi/L	01/12/23 14:04	02/02/23 20:50	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPSW001IE01_20230104
Lab Sample ID: 570-122999-1
Date Collected: 01/04/23 11:30
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-7.63	U	14.0	14.0	20.0	16.6	pCi/L	01/17/23 13:49	02/07/23 01:24	1
Potassium-40	-43.0	U	147	147		165	pCi/L	01/17/23 13:49	02/07/23 01:24	1

Client Sample ID: A1BPSW0001_20230104
Lab Sample ID: 570-122999-2
Date Collected: 01/04/23 12:00
Matrix: Water
Date Received: 01/06/23 18:15

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.766	U	8.16	8.16	20.0	9.60	pCi/L	01/17/23 13:49	02/07/23 01:24	1
Potassium-40	**85.9**		69.4	70.1		67.4	pCi/L	01/17/23 13:49	02/07/23 01:24	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-4

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-14.4	U	155	155	500	290	pCi/L	01/17/23 15:44	01/20/23 19:30	1

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-77.5	U	145	145	500	288	pCi/L	01/17/23 16:35	01/20/23 19:47	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	1.82		0.930	0.935	1.00	0.600	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*89.7*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.156		0.1270	0.1273	1.00	0.126	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*82.3*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPSW001IE01_20230104
Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.0862	U	0.257	0.257	1.00	0.511	pCi/L	01/19/23 14:12	01/30/23 21:45	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*54.5*		*30 - 110*	*01/19/23 14:12*	*01/30/23 21:45*	*1*

Client Sample ID: A1BPSW0001_20230104
Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	**0.211**		0.174	0.174	1.00	0.195	pCi/L	01/19/23 14:12	01/30/23 21:45	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*79.2*		*30 - 110*	*01/19/23 14:12*	*01/30/23 21:45*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-4

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	U-232 (30-110)
570-122999-1	EPSW001IE01_20230104	89.7
570-122999-2	A1BPSW0001_20230104	82.3
570-123038-A-2-C DU	Duplicate	86.2
570-123671-T-2-F DU	Duplicate	92.9
LCS 160-597259/2-A	Lab Control Sample	87.1
LCS 160-597538/2-A	Lab Control Sample	80.5
MB 160-597259/1-A	Method Blank	85.3
MB 160-597538/1-A	Method Blank	80.4

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	U-232 (30-110)
570-122999-1	EPSW001IE01_20230104	54.5
570-122999-2	A1BPSW0001_20230104	79.2

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-596518/1-A
Matrix: Water
Analysis Batch: 597272

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596518

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.3354	U	0.434	0.436	3.00	0.978	pCi/L	01/11/23 13:31	01/18/23 08:05	1
Gross Beta	0.7887	U	0.563	0.569	4.00	0.878	pCi/L	01/11/23 13:31	01/18/23 08:05	1

Lab Sample ID: LCS 160-596518/2-A
Matrix: Water
Analysis Batch: 597272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596518

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	53.64		7.82	3.00	1.86	pCi/L	106	75 - 125

Lab Sample ID: LCSB 160-596518/3-A
Matrix: Water
Analysis Batch: 597272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596518

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.8	71.83		7.72	4.00	1.02	pCi/L	97	75 - 125

Lab Sample ID: 160-48520-A-2-E MS
Matrix: Water
Analysis Batch: 597446

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 596518

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	0.625	U	50.5	41.39		7.02	3.00	3.04	pCi/L	81	60 - 140

Lab Sample ID: 160-48520-A-2-F MSBT
Matrix: Water
Analysis Batch: 597446

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 596518

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	2.71		73.8	81.58		8.72	4.00	1.13	pCi/L	107	60 - 140

Lab Sample ID: 160-48520-A-2-G DU
Matrix: Water
Analysis Batch: 597446

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596518

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	0.625	U	2.483	U G	2.56	3.00	4.11	pCi/L	0.46	1
Gross Beta	2.71		3.300		0.937	4.00	1.08	pCi/L	0.35	1

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued)

Lab Sample ID: MB 160-597281/1-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597281

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.3178	U	0.498	0.499	3.00	0.856	pCi/L	01/18/23 10:03	02/01/23 19:04	1
Gross Beta	-0.4920	U	0.450	0.452	4.00	0.892	pCi/L	01/18/23 10:03	02/01/23 19:04	1

Lab Sample ID: LCS 160-597281/2-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	47.50		7.10	3.00	2.60	pCi/L	94	75 - 125

Lab Sample ID: LCSB 160-597281/3-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	65.09		7.04	4.00	0.936	pCi/L	88	75 - 125

Lab Sample ID: 570-123038-A-2-E MS
Matrix: Water
Analysis Batch: 599058

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	1.45	U	50.5	20.83	F1	3.86	3.00	1.88	pCi/L	38	60 - 140

Lab Sample ID: 570-123038-A-2-F MSBT
Matrix: Water
Analysis Batch: 599058

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	2.09		73.7	68.81		7.42	4.00	0.924	pCi/L	91	60 - 140

Lab Sample ID: 570-123038-A-2-G DU
Matrix: Water
Analysis Batch: 599058

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597281

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	1.45	U	1.117	U	1.34	3.00	2.19	pCi/L	0.12	1
Gross Beta	2.09		2.039		0.737	4.00	0.937	pCi/L	0.03	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-596761/1-A
Matrix: Water
Analysis Batch: 598464

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596761

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.3405	U	6.22	6.22	20.0	7.49	pCi/L	01/12/23 14:04	01/27/23 09:19	1
Potassium-40	-26.73	U	74.0	74.1		112	pCi/L	01/12/23 14:04	01/27/23 09:19	1

Lab Sample ID: LCS 160-596761/2-A
Matrix: Water
Analysis Batch: 598468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596761

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135600		15900		323	pCi/L	100	75 - 125
Cesium-137	41000	41980		4940	20.0	82.6	pCi/L	102	75 - 125
Cobalt-60	18200	18860		2220		68.1	pCi/L	104	75 - 125

Lab Sample ID: 570-122687-U-1-J DU
Matrix: Water
Analysis Batch: 598468

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596761

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	2.96	U	4.522	U	4.76	20.0	5.51	pCi/L	0.15	1
Potassium-40	-80.4	U	23.29	U	81.8		108	pCi/L	0.54	1

Lab Sample ID: MB 160-597241/1-A
Matrix: Water
Analysis Batch: 599334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597241

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.826	U	8.51	8.52	20.0	10.3	pCi/L	01/17/23 13:03	02/03/23 22:10	1
Potassium-40	-36.61	U	86.6	86.7		115	pCi/L	01/17/23 13:03	02/03/23 22:10	1

Lab Sample ID: LCS 160-597241/2-A
Matrix: Water
Analysis Batch: 599336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597241

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	138000		16400		297	pCi/L	102	75 - 125
Cesium-137	41000	42160		5020	20.0	79.9	pCi/L	103	75 - 125
Cobalt-60	18200	18990		2260		44.3	pCi/L	105	75 - 125

Lab Sample ID: 570-123234-AI-1-E DU
Matrix: Water
Analysis Batch: 599354

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597241

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-5.12	U	-0.5107	U	7.06	20.0	8.40	pCi/L	0.29	1
Potassium-40	-33.9	U	67.97		68.0		67.4	pCi/L	0.58	1

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-597258/1-A
Matrix: Water
Analysis Batch: 597783

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597258

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-17.12	U	159	159	500	299	pCi/L	01/17/23 15:44	01/20/23 13:46	1

Lab Sample ID: LCS 160-597258/2-A
Matrix: Water
Analysis Batch: 597783

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597258

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2120	1984		385	500	299	pCi/L	94	75 - 125		

Lab Sample ID: 160-48493-A-2-B MS
Matrix: Water
Analysis Batch: 597783

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597258

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	1.80	U	2110	1844		381	500	316	pCi/L	87	60 - 140		

Lab Sample ID: 160-48582-A-1-C DU
Matrix: Water
Analysis Batch: 597783

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597258

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	-57.2	U		35.14	U	162	500	289	pCi/L			0.30	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-597259/1-A
Matrix: Water
Analysis Batch: 598217

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597259

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.05873	U	0.09433	0.09455	1.00	0.172	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*85.3*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Lab Sample ID: LCS 160-597259/2-A
Matrix: Water
Analysis Batch: 598218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597259

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.19		1.46	1.00	0.151	pCi/L	96	75 - 125		
Uranium-238			13.0	13.33		1.56	1.00	0.135	pCi/L	102	75 - 125		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-597259/2-A
Matrix: Water
Analysis Batch: 598218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597259

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	87.1		30 - 110

Lab Sample ID: 570-123038-A-2-C DU
Matrix: Water
Analysis Batch: 598230

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597259

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	0.128			0.07847	U	0.1118	1.00	0.163	pCi/L			0.22	1

Tracer	DU %Yield	DU Qualifier	Limits
Uranium-232	86.2		30 - 110

Lab Sample ID: MB 160-597538/1-A
Matrix: Water
Analysis Batch: 598766

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597538

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.08454	U	0.1204	0.1205	1.00	0.175	pCi/L	01/19/23 14:12	01/30/23 21:45	1

Tracer	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	80.4		30 - 110	01/19/23 14:12	01/30/23 21:45	1

Lab Sample ID: LCS 160-597538/2-A
Matrix: Water
Analysis Batch: 598767

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597538

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.89		1.52	1.00	0.204	pCi/L	101	75 - 125		
Uranium-238			13.0	12.29		1.47	1.00	0.135	pCi/L	94	75 - 125		

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	80.5		30 - 110

Lab Sample ID: 570-123671-T-2-F DU
Matrix: Water
Analysis Batch: 598726

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597538

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	1.09			1.050		0.326	1.00	0.143	pCi/L			0.06	1

Tracer	DU %Yield	DU Qualifier	Limits
Uranium-232	92.9		30 - 110

Rad

Filtration Batch: 596502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Dissolved	Water	Filtration	
570-122999-1	EPSW001IE01_20230104	Dissolved	Water	Filtration	
570-122999-1	EPSW001IE01_20230104	Dissolved	Water	Filtration	
570-122999-2	A1BPSW0001_20230104	Dissolved	Water	Filtration	
570-122999-2	A1BPSW0001_20230104	Dissolved	Water	Filtration	
570-122999-2	A1BPSW0001_20230104	Dissolved	Water	Filtration	

Prep Batch: 596518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Total/NA	Water	Evaporation	
570-122999-2	A1BPSW0001_20230104	Total/NA	Water	Evaporation	
MB 160-596518/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-596518/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-596518/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
160-48520-A-2-E MS	Matrix Spike	Total/NA	Water	Evaporation	
160-48520-A-2-F MSBT	Matrix Spike	Total/NA	Water	Evaporation	
160-48520-A-2-G DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 596761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Total/NA	Water	Fill_Geo-0	
570-122999-2	A1BPSW0001_20230104	Total/NA	Water	Fill_Geo-0	
MB 160-596761/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-596761/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-122687-U-1-J DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Dissolved	Water	Fill_Geo-0	596502
570-122999-2	A1BPSW0001_20230104	Dissolved	Water	Fill_Geo-0	596502
MB 160-597241/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597241/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123234-AI-1-E DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597258

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Total/NA	Water	LSC_Dist_Susp	
570-122999-2	A1BPSW0001_20230104	Total/NA	Water	LSC_Dist_Susp	
MB 160-597258/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-597258/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
160-48493-A-2-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
160-48582-A-1-C DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 597259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Total/NA	Water	ExtChrom	
570-122999-2	A1BPSW0001_20230104	Total/NA	Water	ExtChrom	
MB 160-597259/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597259/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123038-A-2-C DU	Duplicate	Total/NA	Water	ExtChrom	

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-4

Rad

Prep Batch: 597281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Dissolved	Water	Evaporation	596502
570-122999-2	A1BPSW0001_20230104	Dissolved	Water	Evaporation	596502
MB 160-597281/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-597281/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-597281/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123038-A-2-E MS	Matrix Spike	Total/NA	Water	Evaporation	
570-123038-A-2-F MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-123038-A-2-G DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 597538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122999-1	EPSW001IE01_20230104	Dissolved	Water	ExtChrom	596502
570-122999-2	A1BPSW0001_20230104	Dissolved	Water	ExtChrom	596502
MB 160-597538/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597538/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123671-T-2-F DU	Duplicate	Total/NA	Water	ExtChrom	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-4

Client Sample ID: EPSW001IE01_20230104

Date Collected: 01/04/23 11:30
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1000 mL	1000 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	Evaporation			199.99 mL	1.0 g	597281	01/18/23 10:03	MST	EET SL
Dissolved	Analysis	900.0		1			598871	02/01/23 19:05	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Evaporation			100.005 mL	1.0 g	596518	01/11/23 13:31	ASG	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	597446	01/18/23 13:09	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597241	01/17/23 13:49	JML	EET SL
Dissolved	Analysis	901.1		1			599502	02/07/23 01:24	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	596761	01/12/23 14:04	SAC	EET SL
Total/NA	Analysis	901.1		1			598464	01/27/23 15:15	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	LSC_Dist_Susp			97.09 mL	1.0 g	597258	01/17/23 15:44	SEH	EET SL
Total/NA	Analysis	906.0		1			597783	01/20/23 19:30	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	ExtChrom			250.21 mL	1.0 mL	597538	01/19/23 14:12	SAC	EET SL
Dissolved	Analysis	A-01-R		1			598773	01/30/23 21:45	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			100.23 mL	1.0 mL	597259	01/17/23 16:09	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598222	01/25/23 14:42	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client Sample ID: A1BPSW0001_20230104

Date Collected: 01/04/23 12:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-122999-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			700 mL	700 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	Evaporation			200.01 mL	1.0 g	597281	01/18/23 10:03	MST	EET SL
Dissolved	Analysis	900.0		1			598871	02/01/23 19:05	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Evaporation			199.99 mL	1.0 g	596518	01/11/23 13:31	ASG	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	597446	01/18/23 13:09	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597241	01/17/23 13:49	JML	EET SL
Dissolved	Analysis	901.1		1			599497	02/07/23 01:24	SCB	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	596761	01/12/23 14:04	SAC	EET SL
Total/NA	Analysis	901.1		1			599055	02/02/23 20:50	CAH	EET SL
	Instrument ID: GAMMAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-122999-4
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: A1BPSW0001_20230104
Lab Sample ID: 570-122999-2
Date Collected: 01/04/23 12:00
Matrix: Water
Date Received: 01/06/23 18:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	LSC_Dist_Susp			98.25 mL	1.0 g	597258	01/17/23 16:35	SEH	EET SL
Total/NA	Analysis	906.0		1			597783	01/20/23 19:47	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	ExtChrom			500.86 mL	1.0 mL	597538	01/19/23 14:12	SAC	EET SL
Dissolved	Analysis	A-01-R		1			598774	01/30/23 21:45	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			501.62 mL	1.0 mL	597259	01/17/23 16:09	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598223	01/25/23 14:42	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-122999-4
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	02-09-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-4

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-122999-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122999-1	EPSW001IE01_20230104	Water	01/04/23 11:30	01/06/23 18:15
570-122999-2	A1BPSW0001_20230104	Water	01/04/23 12:00	01/06/23 18:15

122999

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Eurofins Calscience, Inc.

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under the CoC are to be performed in accordance with the T&Cs set forth in Blanket Service Agreement #2019-22 TestAmerica by and between Haley & Aldrich Inc its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As Cd, Cu, Pb Se Method 200.7 Fe, Mn Zn (Total Dissolved)	Method 200.8, As, Cd, Cu Pb, Se Method 200.7 Fe Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trifilum (E906.0)				Sample Specific Notes:
--	--	--			--			2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230104	01/04/23	1130	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
A1BPSW0001_20230104	↓	1200	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Dup			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1=Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	4	2	1	1				

570-122999 Chain of Custody

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments. **ECI #44009815**

Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C) Obs'd:____ Corr'd:____ Therm ID No.:____

	Company	Date/Time		Date/Time
Relinquished by	H+A	01/06/23 1727	Received by: EC	1/6/23 1300
Relinquished by: EC	EC	1/6/23 1815	Received by:	1/6/23 1815
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.2/2.2, 1.9/1.9 scn

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2/13/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No.: 570-203532 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-122999-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/18/2023			
City: Earth City	TAT Requested (days):			
State Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12.00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1403				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/13/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-122999-2
Address: 5755 8th Street East,	Due Date Requested: 1/24/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	X	2	
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12.00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/9/23 1517	Company EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-122999-3
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230104 (570-122999-1)	1/4/23	11 30 Pacific		Water			X	2	See QAS Boeing_w/u to zero
A1BPSW0001_20230104 (570-122999-2)	1/4/23	12:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122999-4

Login Number: 122999
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-122999-4

Login Number: 122999
List Number: 2
Creator: Bohlmann, Jessica M

List Source: Eurofins St. Louis
List Creation: 01/10/23 12:51 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	570-122999-J-1 and K-2 were received with a pH >2 SU.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/6/2023 3:39:35 PM Revision 1

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123009-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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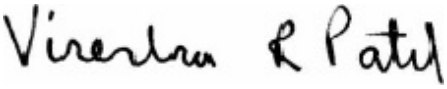
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired

Metals

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123009-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123009-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 1/18/2023. The report (revision 1) is being revised due to: The metals reporting was adjusted to report all elements by EPA 200.8..

Receipt
The sample was received on 1/6/2023 6:15 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.8º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-294711. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following sample was received and analyzed outside of holding time: BGBMP0003_20230104 (570-123009-1).

Method 218.6: The following sample was received, filtered and analyzed outside of holding time: BGBMP0003_20230104 (570-123009-1).

Method 300.0: Due to the high concentration of Fluoride, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-294668 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 300.0: Dilutions were performed for the following samples due to sample matrix properties: BGBMP0003_20230104 (570-123009-1).

Method 300.0: The following sample was received outside of holding time: BGBMP0003_20230104 (570-123009-1).

Method 300.0: Dilutions were performed for the following samples due to sample matrix properties: BGBMP0003_20230104 (570-123009-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-295281 and analytical batch 570-295467 contained Copper and Lead above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-295281 and analytical batch 570-295467 were outside control limits for Manganese and Iron. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 200.8: The method blank for preparation batch 570-295281 and analytical batch 570-295467 contained Boron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Job ID: 570-123009-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: BGBMP0003_20230104 (570-123009-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: BGBMP0003_20230104 (570-123009-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-295105. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Client Sample ID: BGBMP0003_20230104 — Lab Sample ID: 570-123009-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	2.4	BU BV	0.50	0.098	mg/L	5		300.0	Total/NA
Sulfate	2.7		2.0	0.47	mg/L	2		300.0	Total/NA
Boron	30	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	30	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Silver	0.29	J,DX	1.0	0.23	ug/L	1		200.8	Total Recoverable
Arsenic	0.45	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	16		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	0.52	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	3.8	MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	110		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	3.1		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	1.2	J,DX	2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	3.1	MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	0.45	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Selenium	0.55	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Aluminum	94		15	8.6	ug/L	1		200.8	Total Recoverable
Zinc	10	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Arsenic	0.36	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	14	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.33	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	1.8	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	36	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	1.3	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.1	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Aluminum	38	BU	15	8.6	ug/L	1		200.8	Dissolved
Total Suspended Solids	4.0		1.0	0.83	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/10/23 17:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*60 - 140*		*01/10/23 17:57*	*1*
4-Bromofluorobenzene (Surr)	*86*		*60 - 140*		*01/10/23 17:57*	*1*
Dibromofluoromethane	*110*		*60 - 140*		*01/10/23 17:57*	*1*
Toluene-d8 (Surr)	*96*		*60 - 140*		*01/10/23 17:57*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		4.9	3.5	ug/L		01/11/23 12:19	01/12/23 17:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*71*		*28 - 127*	*01/11/23 12:19*	*01/12/23 17:03*	*1*
2-Fluorobiphenyl (Surr)	*55*		*31 - 120*	*01/11/23 12:19*	*01/12/23 17:03*	*1*
2-Fluorophenol (Surr)	*28*		*17 - 120*	*01/11/23 12:19*	*01/12/23 17:03*	*1*
Nitrobenzene-d5 (Surr)	*61*		*27 - 120*	*01/11/23 12:19*	*01/12/23 17:03*	*1*
Phenol-d6 (Surr)	*19*		*10 - 120*	*01/11/23 12:19*	*01/12/23 17:03*	*1*
p-Terphenyl-d14 (Surr)	*67*		*45 - 120*	*01/11/23 12:19*	*01/12/23 17:03*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			01/09/23 05:41	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			01/09/23 06:53	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.20	0.092	mg/L			01/10/23 11:06	2
Nitrite as N	ND	BU BV	0.50	0.22	mg/L			01/07/23 18:08	5
Nitrate as N	**2.4**	**BU BV**	0.50	0.098	mg/L			01/07/23 18:08	5
Sulfate	**2.7**		2.0	0.47	mg/L			01/10/23 11:06	2

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/09/23 17:50	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	30	J,DX	500	3.5	ug/L		01/12/23 06:20	01/12/23 15:09	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	30	J,DX BU	500	3.5	ug/L			01/11/23 09:31	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	**0.29**	**J,DX**	1.0	0.23	ug/L		01/12/23 00:28	01/12/23 12:46	1
Arsenic	**0.45**	**J,DX**	1.0	0.16	ug/L		01/12/23 00:28	01/12/23 12:46	1
Barium	**16**		1.0	0.17	ug/L		01/12/23 00:28	01/12/23 12:46	1
Beryllium	ND		0.50	0.26	ug/L		01/12/23 00:28	01/12/23 12:46	1
Cadmium	ND		1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:46	1
Chromium	**0.52**	**J,DX**	2.0	0.14	ug/L		01/12/23 00:28	01/12/23 12:46	1
Copper	**3.8**	**MB**	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:46	1
Iron	**110**		20	3.7	ug/L		01/12/23 00:28	01/12/23 12:46	1
Manganese	**3.1**		1.0	0.41	ug/L		01/12/23 00:28	01/12/23 12:46	1
Nickel	**1.2**	**J,DX**	2.0	0.17	ug/L		01/12/23 00:28	01/12/23 12:46	1
Lead	**3.1**	**MB**	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:46	1
Antimony	**0.45**	**J,DX**	2.0	0.36	ug/L		01/12/23 00:28	01/12/23 12:46	1
Selenium	**0.55**	**J,DX**	2.0	0.52	ug/L		01/12/23 00:28	01/12/23 12:46	1
Thallium	ND		1.0	0.11	ug/L		01/12/23 00:28	01/12/23 12:46	1
Aluminum	**94**		15	8.6	ug/L		01/12/23 00:28	01/12/23 12:46	1
Zinc	**10**	**J,DX**	20	2.8	ug/L		01/12/23 00:28	01/12/23 12:46	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/10/23 12:16	1
Arsenic	**0.36**	**J,DX BU**	1.0	0.16	ug/L			01/10/23 12:16	1
Barium	**14**	**BU**	1.0	0.17	ug/L			01/10/23 12:16	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/10/23 12:16	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/10/23 12:16	1
Chromium	**0.33**	**J,DX BU**	2.0	0.14	ug/L			01/10/23 12:16	1
Copper	**1.8**	**J,DX BU**	2.0	0.32	ug/L			01/10/23 12:16	1
Iron	**36**	**BU**	20	3.7	ug/L			01/10/23 12:16	1
Manganese	**1.3**	**BU**	1.0	0.41	ug/L			01/10/23 12:16	1
Nickel	**1.1**	**J,DX BU**	2.0	0.17	ug/L			01/10/23 12:16	1
Lead	ND	BU	1.0	0.12	ug/L			01/10/23 12:16	1
Antimony	ND	BU	2.0	0.36	ug/L			01/10/23 12:16	1
Selenium	ND	BU	2.0	0.52	ug/L			01/10/23 12:16	1
Aluminum	**38**	**BU**	15	8.6	ug/L			01/10/23 12:16	1
Zinc	ND	BU	20	2.8	ug/L			01/10/23 12:16	1

General Chemistry

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			01/16/23 11:45	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/11/23 14:55	1
Total Suspended Solids (SM 2540D)	**4.0**		1.0	0.83	mg/L			01/10/23 11:19	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-123009-1	BGBMP0003_20230104	101	86	110	96
LCS 570-294711/7	Lab Control Sample	97	97	100	98
LCSD 570-294711/8	Lab Control Sample Dup	97	101	99	96
MB 570-294711/12	Method Blank	100	87	107	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-123009-1	BGBMP0003_20230104	71	55	28	61	19	67
LCS 570-295105/2-A	Lab Control Sample	93	83	53	79	37	95
LCSD 570-295105/3-A	Lab Control Sample Dup	90	81	57	79	38	92
MB 570-295105/1-A	Method Blank	73	58	36	71	24	81

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-294711/12
Matrix: Water
Analysis Batch: 294711

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/10/23 14:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*60 - 140*		*01/10/23 14:01*	*1*
4-Bromofluorobenzene (Surr)	*87*		*60 - 140*		*01/10/23 14:01*	*1*
Dibromofluoromethane	*107*		*60 - 140*		*01/10/23 14:01*	*1*
Toluene-d8 (Surr)	*96*		*60 - 140*		*01/10/23 14:01*	*1*

Lab Sample ID: LCS 570-294711/7
Matrix: Water
Analysis Batch: 294711

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	21.3		ug/L		106	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*60 - 140*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*
Dibromofluoromethane	*100*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*

Lab Sample ID: LCSD 570-294711/8
Matrix: Water
Analysis Batch: 294711

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene			20.0	19.9		ug/L		99	65 - 135	7	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*60 - 140*
4-Bromofluorobenzene (Surr)	*101*		*60 - 140*
Dibromofluoromethane	*99*		*60 - 140*
Toluene-d8 (Surr)	*96*		*60 - 140*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-295105/1-A
Matrix: Water
Analysis Batch: 295345

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295105

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/11/23 12:19	01/12/23 15:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*73*		*28 - 127*	*01/11/23 12:19*	*01/12/23 15:17*	*1*
2-Fluorobiphenyl (Surr)	*58*		*31 - 120*	*01/11/23 12:19*	*01/12/23 15:17*	*1*
2-Fluorophenol (Surr)	*36*		*17 - 120*	*01/11/23 12:19*	*01/12/23 15:17*	*1*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-295105/1-A
Matrix: Water
Analysis Batch: 295345

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295105

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	71		27 - 120	01/11/23 12:19	01/12/23 15:17	1
Phenol-d6 (Surr)	24		10 - 120	01/11/23 12:19	01/12/23 15:17	1
p-Terphenyl-d14 (Surr)	81		45 - 120	01/11/23 12:19	01/12/23 15:17	1

Lab Sample ID: LCS 570-295105/2-A
Matrix: Water
Analysis Batch: 295345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295105

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bis(2-ethylhexyl) phthalate			20.0	18.5		ug/L		92	29 - 137		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	93		28 - 127
2-Fluorobiphenyl (Surr)	83		31 - 120
2-Fluorophenol (Surr)	53		17 - 120
Nitrobenzene-d5 (Surr)	79		27 - 120
Phenol-d6 (Surr)	37		10 - 120
p-Terphenyl-d14 (Surr)	95		45 - 120

Lab Sample ID: LCSD 570-295105/3-A
Matrix: Water
Analysis Batch: 295345

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295105

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate			20.0	18.0		ug/L		90	29 - 137	3	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	90		28 - 127
2-Fluorobiphenyl (Surr)	81		31 - 120
2-Fluorophenol (Surr)	57		17 - 120
Nitrobenzene-d5 (Surr)	79		27 - 120
Phenol-d6 (Surr)	38		10 - 120
p-Terphenyl-d14 (Surr)	92		45 - 120

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-294364/4
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/09/23 03:42	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: LCS 570-294364/5
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	49.4		ug/L		99	95 - 107		

Lab Sample ID: LCSD 570-294364/6
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	49.7		ug/L		99	95 - 107	1	20

Lab Sample ID: 570-123038-J-2 MS
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	0.22		50.1	50.3		ug/L		100	85 - 121		

Lab Sample ID: 570-123038-J-2 MSD
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.22		50.1	49.9		ug/L		99	85 - 121	1	25

Lab Sample ID: MB 570-294368/1-A
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/09/23 06:17	1

Lab Sample ID: LCS 570-294368/2-A
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.0		ug/L		100	95 - 107		

Lab Sample ID: LCSD 570-294368/3-A
Matrix: Water
Analysis Batch: 294364

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.1		ug/L		100	95 - 107	0	20

Lab Sample ID: 570-123009-1 MS
Matrix: Water
Analysis Batch: 294364

Client Sample ID: BGBMP0003_20230104
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	ND	BU BV	50.1	54.6		ug/L		109	85 - 121		

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: 570-123009-1 MSD
Matrix: Water
Analysis Batch: 294364

Client Sample ID: BGBMP0003_20230104
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	ND	BU BV	50.1	55.0		ug/L		110	85 - 121	1	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-294330/5
Matrix: Water
Analysis Batch: 294330

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/07/23 14:35	1
Nitrate as N	ND		0.10	0.020	mg/L			01/07/23 14:35	1

Lab Sample ID: LCS 570-294330/6
Matrix: Water
Analysis Batch: 294330

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.52		mg/L		101	90 - 110
Nitrate as N	5.00	4.85		mg/L		97	90 - 110

Lab Sample ID: LCSD 570-294330/7
Matrix: Water
Analysis Batch: 294330

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.53		mg/L		101	90 - 110	0	15
Nitrate as N	5.00	4.87		mg/L		97	90 - 110	0	15

Lab Sample ID: MB 570-294668/5
Matrix: Water
Analysis Batch: 294668

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			01/10/23 06:20	1
Sulfate	ND		1.0	0.24	mg/L			01/10/23 06:20	1

Lab Sample ID: LCS 570-294668/6
Matrix: Water
Analysis Batch: 294668

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.50	2.44		mg/L		98	90 - 110
Sulfate	50.0	49.2		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-294668/7
Matrix: Water
Analysis Batch: 294668

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	2.50	2.43		mg/L		97	90 - 110	0	15

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 570-294668/7
Matrix: Water
Analysis Batch: 294668

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate			50.0	49.4		mg/L		99	90 - 110	0	15

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 570-122943-A-1 MS
Matrix: Water
Analysis Batch: 294668

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride - DL	13		2.50	15.1	BB	mg/L		94	80 - 120		
Sulfate - DL	ND		50.0	45.7		mg/L		91	80 - 120		

Lab Sample ID: 570-122943-A-1 MSD
Matrix: Water
Analysis Batch: 294668

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride - DL	13		2.50	14.2	BB	mg/L		60	80 - 120	6	20
Sulfate - DL	ND		50.0	45.5		mg/L		91	80 - 120	0	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-294424/7
Matrix: Water
Analysis Batch: 294424

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/09/23 12:57	1

Lab Sample ID: LCS 570-294424/8
Matrix: Water
Analysis Batch: 294424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	24.3		ug/L		97	85 - 115		

Lab Sample ID: LCSD 570-294424/9
Matrix: Water
Analysis Batch: 294424

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.2		ug/L		97	85 - 115	1	15

Lab Sample ID: 570-122945-B-1 MS
Matrix: Water
Analysis Batch: 294424

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	1.3	J,DX	50.0	52.3		ug/L		102	80 - 120		

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 570-122945-B-1 MSD
Matrix: Water
Analysis Batch: 294424

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	1.3	J,DX	50.0	52.6		ug/L		103	80 - 120	0	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-295271/1-A
Matrix: Water
Analysis Batch: 295537

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295271

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		01/12/23 06:20	01/12/23 14:54	1

Lab Sample ID: LCS 570-295271/2-A
Matrix: Water
Analysis Batch: 295537

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295271

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	487	J,DX	ug/L		97	85 - 115

Lab Sample ID: LCSD 570-295271/3-A
Matrix: Water
Analysis Batch: 295537

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295271

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	484	J,DX	ug/L		97	85 - 115	1	20

Lab Sample ID: 570-123346-A-1-C MS
Matrix: Water
Analysis Batch: 295537

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 295271

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	15	J,DX	500	511		ug/L		99	80 - 120

Lab Sample ID: 570-123346-A-1-D MSD
Matrix: Water
Analysis Batch: 295537

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295271

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	15	J,DX	500	507		ug/L		98	80 - 120	1	20

Lab Sample ID: MB 570-294801/1-A
Matrix: Water
Analysis Batch: 295098

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			01/11/23 09:15	1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 570-294801/2-A
Matrix: Water
Analysis Batch: 295098

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	475	J,DX	ug/L		95	85 - 115		

Lab Sample ID: LCSD 570-294801/3-A
Matrix: Water
Analysis Batch: 295098

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	453	J,DX	ug/L		91	85 - 115	5	20

Lab Sample ID: 570-122945-H-2-E MS
Matrix: Water
Analysis Batch: 295098

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	78	J,DX	500	532		ug/L		91	80 - 120		

Lab Sample ID: 570-122945-H-2-F MSD
Matrix: Water
Analysis Batch: 295098

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	78	J,DX	500	549		ug/L		94	80 - 120	3	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-295281/1-A
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/12/23 00:28	01/12/23 12:28	1
Arsenic	ND		1.0	0.16	ug/L		01/12/23 00:28	01/12/23 12:28	1
Barium	ND		1.0	0.17	ug/L		01/12/23 00:28	01/12/23 12:28	1
Beryllium	ND		0.50	0.26	ug/L		01/12/23 00:28	01/12/23 12:28	1
Cadmium	ND		1.0	0.13	ug/L		01/12/23 00:28	01/12/23 12:28	1
Chromium	ND		2.0	0.14	ug/L		01/12/23 00:28	01/12/23 12:28	1
Copper	0.329	J,DX	2.0	0.32	ug/L		01/12/23 00:28	01/12/23 12:28	1
Iron	ND		20	3.7	ug/L		01/12/23 00:28	01/12/23 12:28	1
Manganese	ND		1.0	0.41	ug/L		01/12/23 00:28	01/12/23 12:28	1
Nickel	ND		2.0	0.17	ug/L		01/12/23 00:28	01/12/23 12:28	1
Lead	0.510	J,DX	1.0	0.12	ug/L		01/12/23 00:28	01/12/23 12:28	1
Antimony	ND		2.0	0.36	ug/L		01/12/23 00:28	01/12/23 12:28	1
Selenium	ND		2.0	0.52	ug/L		01/12/23 00:28	01/12/23 12:28	1
Thallium	ND		1.0	0.11	ug/L		01/12/23 00:28	01/12/23 12:28	1
Aluminum	ND		15	8.6	ug/L		01/12/23 00:28	01/12/23 12:28	1
Zinc	ND		20	2.8	ug/L		01/12/23 00:28	01/12/23 12:28	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-295281/2-A
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Silver			80.0	82.0		ug/L		103	85 - 115		
Arsenic			80.0	83.5		ug/L		104	85 - 115		
Barium			80.0	83.4		ug/L		104	85 - 115		
Beryllium			80.0	89.5		ug/L		112	85 - 115		
Cadmium			80.0	84.7		ug/L		106	85 - 115		
Chromium			80.0	82.7		ug/L		103	85 - 115		
Copper			80.0	81.9		ug/L		102	85 - 115		
Iron			800	831		ug/L		104	85 - 115		
Manganese			80.0	84.1		ug/L		105	85 - 115		
Nickel			80.0	81.9		ug/L		102	85 - 115		
Lead			80.0	82.2		ug/L		103	85 - 115		
Antimony			80.0	84.1		ug/L		105	85 - 115		
Selenium			80.0	84.6		ug/L		106	85 - 115		
Thallium			80.0	84.6		ug/L		106	85 - 115		
Aluminum			80.0	86.6		ug/L		108	85 - 115		
Zinc			80.0	83.6		ug/L		104	85 - 115		

Lab Sample ID: LCSD 570-295281/3-A
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver			80.0	82.2		ug/L		103	85 - 115	0	20
Arsenic			80.0	82.8		ug/L		103	85 - 115	1	20
Barium			80.0	83.9		ug/L		105	85 - 115	1	20
Beryllium			80.0	89.0		ug/L		111	85 - 115	1	20
Cadmium			80.0	85.5		ug/L		107	85 - 115	1	20
Chromium			80.0	83.8		ug/L		105	85 - 115	1	20
Copper			80.0	85.8		ug/L		107	85 - 115	5	20
Iron			800	835		ug/L		104	85 - 115	0	20
Manganese			80.0	84.0		ug/L		105	85 - 115	0	20
Nickel			80.0	82.6		ug/L		103	85 - 115	1	20
Lead			80.0	81.9		ug/L		102	85 - 115	0	20
Antimony			80.0	86.1		ug/L		108	85 - 115	2	20
Selenium			80.0	84.4		ug/L		105	85 - 115	0	20
Thallium			80.0	83.8		ug/L		105	85 - 115	1	20
Aluminum			80.0	85.9		ug/L		107	85 - 115	1	20
Zinc			80.0	86.3		ug/L		108	85 - 115	3	20

Lab Sample ID: 570-122995-B-7-B MS
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Silver	ND		80.0	81.2		ug/L		101	80 - 120		
Arsenic	1.1		80.0	80.0		ug/L		99	80 - 120		
Barium	49		80.0	135		ug/L		107	80 - 120		
Beryllium	ND		80.0	86.3		ug/L		108	80 - 120		
Cadmium	ND		80.0	84.8		ug/L		106	80 - 120		

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-122995-B-7-B MS
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium	4.2		80.0	86.1		ug/L		102	80 - 120
Copper	7.2	MB	80.0	87.7		ug/L		101	80 - 120
Iron	2700		800	4200	LM	ug/L		184	80 - 120
Manganese	92		80.0	190	LM	ug/L		122	80 - 120
Nickel	4.6		80.0	85.1		ug/L		101	80 - 120
Lead	5.5	MB	80.0	86.8		ug/L		102	80 - 120
Antimony	0.56	J,DX	80.0	76.9		ug/L		95	80 - 120
Selenium	ND		80.0	78.2		ug/L		98	80 - 120
Thallium	ND		80.0	83.2		ug/L		104	80 - 120
Aluminum	2100		80.0	2950	BB	ug/L		1126	80 - 120
Zinc	19	J,DX	80.0	98.6		ug/L		100	80 - 120

Lab Sample ID: 570-122995-B-7-C MSD
Matrix: Water
Analysis Batch: 295467

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295281

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	ND		80.0	81.2		ug/L		102	80 - 120	0	20
Arsenic	1.1		80.0	79.3		ug/L		98	80 - 120	1	20
Barium	49		80.0	133		ug/L		105	80 - 120	1	20
Beryllium	ND		80.0	84.8		ug/L		106	80 - 120	2	20
Cadmium	ND		80.0	84.0		ug/L		105	80 - 120	1	20
Chromium	4.2		80.0	84.7		ug/L		101	80 - 120	2	20
Copper	7.2	MB	80.0	86.2		ug/L		99	80 - 120	2	20
Iron	2700		800	4130	LM	ug/L		175	80 - 120	2	20
Manganese	92		80.0	185		ug/L		116	80 - 120	3	20
Nickel	4.6		80.0	83.8		ug/L		99	80 - 120	2	20
Lead	5.5	MB	80.0	85.5		ug/L		100	80 - 120	1	20
Antimony	0.56	J,DX	80.0	75.9		ug/L		94	80 - 120	1	20
Selenium	ND		80.0	77.8		ug/L		97	80 - 120	1	20
Thallium	ND		80.0	81.6		ug/L		102	80 - 120	2	20
Aluminum	2100		80.0	2840	BB	ug/L		977	80 - 120	4	20
Zinc	19	J,DX	80.0	101		ug/L		103	80 - 120	2	20

Lab Sample ID: MB 570-294776/1-A
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L			01/10/23 12:07	1
Arsenic	ND		1.0	0.16	ug/L			01/10/23 12:07	1
Barium	ND		1.0	0.17	ug/L			01/10/23 12:07	1
Beryllium	ND		0.50	0.26	ug/L			01/10/23 12:07	1
Cadmium	ND		1.0	0.13	ug/L			01/10/23 12:07	1
Chromium	ND		2.0	0.14	ug/L			01/10/23 12:07	1
Copper	ND		2.0	0.32	ug/L			01/10/23 12:07	1
Iron	ND		20	3.7	ug/L			01/10/23 12:07	1
Manganese	ND		1.0	0.41	ug/L			01/10/23 12:07	1
Nickel	ND		2.0	0.17	ug/L			01/10/23 12:07	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-294776/1-A
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.0	0.12	ug/L			01/10/23 12:07	1
Antimony	ND		2.0	0.36	ug/L			01/10/23 12:07	1
Selenium	ND		2.0	0.52	ug/L			01/10/23 12:07	1
Aluminum	ND		15	8.6	ug/L			01/10/23 12:07	1
Zinc	ND		20	2.8	ug/L			01/10/23 12:07	1

Lab Sample ID: LCS 570-294776/2-A
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Silver			80.0	76.2		ug/L		95	85 - 115		
Arsenic			80.0	74.1		ug/L		93	85 - 115		
Barium			80.0	75.7		ug/L		95	85 - 115		
Beryllium			80.0	81.7		ug/L		102	85 - 115		
Cadmium			80.0	75.9		ug/L		95	85 - 115		
Chromium			80.0	76.3		ug/L		95	85 - 115		
Copper			80.0	76.3		ug/L		95	85 - 115		
Iron			800	786		ug/L		98	85 - 115		
Manganese			80.0	76.3		ug/L		95	85 - 115		
Nickel			80.0	75.6		ug/L		95	85 - 115		
Lead			80.0	76.7		ug/L		96	85 - 115		
Antimony			80.0	76.9		ug/L		96	85 - 115		
Selenium			80.0	75.9		ug/L		95	85 - 115		
Aluminum			80.0	77.0		ug/L		96	85 - 115		
Zinc			80.0	75.0		ug/L		94	85 - 115		

Lab Sample ID: LCSD 570-294776/3-A
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver			80.0	76.2		ug/L		95	85 - 115	0	20
Arsenic			80.0	72.9		ug/L		91	85 - 115	2	20
Barium			80.0	74.8		ug/L		94	85 - 115	1	20
Beryllium			80.0	80.0		ug/L		100	85 - 115	2	20
Cadmium			80.0	75.0		ug/L		94	85 - 115	1	20
Chromium			80.0	76.3		ug/L		95	85 - 115	0	20
Copper			80.0	76.7		ug/L		96	85 - 115	0	20
Iron			800	787		ug/L		98	85 - 115	0	20
Manganese			80.0	75.7		ug/L		95	85 - 115	1	20
Nickel			80.0	76.3		ug/L		95	85 - 115	1	20
Lead			80.0	75.5		ug/L		94	85 - 115	2	20
Antimony			80.0	76.1		ug/L		95	85 - 115	1	20
Selenium			80.0	72.7		ug/L		91	85 - 115	4	20
Aluminum			80.0	74.9		ug/L		94	85 - 115	3	20
Zinc			80.0	73.2		ug/L		91	85 - 115	2	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-295446/11
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/11/23 14:55	1

Lab Sample ID: LCS 570-295446/12
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	255		ug/L		102	90 - 110

Lab Sample ID: LCSD 570-295446/18
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	233		ug/L		93	90 - 110	9	20

Lab Sample ID: MRL 570-295446/10
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.11	J,DX	ug/L		82	50 - 150

Lab Sample ID: 570-122475-D-1 MS
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	8.7		250	226		ug/L		87	70 - 130

Lab Sample ID: 570-122475-D-1 MSD
Matrix: Water
Analysis Batch: 295446

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	8.7		250	266		ug/L		103	70 - 130	16	30

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-294791/1
Matrix: Water
Analysis Batch: 294791

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/10/23 11:19	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 570-294791/2
Matrix: Water
Analysis Batch: 294791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	110		mg/L		110	77 - 116		

Lab Sample ID: LCSD 570-294791/3
Matrix: Water
Analysis Batch: 294791

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	112		mg/L		112	77 - 116	2	10

Lab Sample ID: 570-122999-G-2 DU
Matrix: Water
Analysis Batch: 294791

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	35			34.6		mg/L				2	10

GC/MS VOA

Analysis Batch: 294711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	624.1	
MB 570-294711/12	Method Blank	Total/NA	Water	624.1	
LCS 570-294711/7	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-294711/8	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 295105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	625	
MB 570-295105/1-A	Method Blank	Total/NA	Water	625	
LCS 570-295105/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-295105/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 295345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	625.1 SIM	295105
MB 570-295105/1-A	Method Blank	Total/NA	Water	625.1 SIM	295105
LCS 570-295105/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	295105
LCSD 570-295105/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	295105

HPLC/IC

Analysis Batch: 294330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	300.0	
MB 570-294330/5	Method Blank	Total/NA	Water	300.0	
LCS 570-294330/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-294330/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 294364

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	218.6	294368
570-123009-1	BGBMP0003_20230104	Total/NA	Water	218.6	
MB 570-294364/4	Method Blank	Total/NA	Water	218.6	
MB 570-294368/1-A	Method Blank	Dissolved	Water	218.6	294368
LCS 570-294364/5	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-294368/2-A	Lab Control Sample	Dissolved	Water	218.6	294368
LCSD 570-294364/6	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-294368/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	294368
570-123009-1 MS	BGBMP0003_20230104	Dissolved	Water	218.6	294368
570-123009-1 MSD	BGBMP0003_20230104	Dissolved	Water	218.6	294368
570-123038-J-2 MS	Matrix Spike	Total/NA	Water	218.6	
570-123038-J-2 MSD	Matrix Spike Duplicate	Total/NA	Water	218.6	

Filtration Batch: 294368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	Filtration	
MB 570-294368/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-294368/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294368/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123009-1 MS	BGBMP0003_20230104	Dissolved	Water	Filtration	

HPLC/IC (Continued)

Filtration Batch: 294368 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1 MSD	BGBMP0003_20230104	Dissolved	Water	Filtration	

Analysis Batch: 294424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	314.0	
MB 570-294424/7	Method Blank	Total/NA	Water	314.0	
LCS 570-294424/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-294424/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-122945-B-1 MS	Matrix Spike	Total/NA	Water	314.0	
570-122945-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 294668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	300.0	
MB 570-294668/5	Method Blank	Total/NA	Water	300.0	
LCS 570-294668/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-294668/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-122943-A-1 MS - DL	Matrix Spike	Total/NA	Water	300.0	
570-122943-A-1 MSD - DL	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Filtration Batch: 294776

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	Filtration	
MB 570-294776/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-294776/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294776/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Filtration Batch: 294801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	Filtration	
MB 570-294801/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-294801/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294801/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-122945-H-2-E MS	Matrix Spike	Dissolved	Water	Filtration	
570-122945-H-2-F MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 294822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	200.8	294776
MB 570-294776/1-A	Method Blank	Dissolved	Water	200.8	294776
LCS 570-294776/2-A	Lab Control Sample	Dissolved	Water	200.8	294776
LCSD 570-294776/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	294776

Analysis Batch: 295098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	200.7 Rev 4.4	294801
MB 570-294801/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	294801
LCS 570-294801/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	294801
LCSD 570-294801/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	294801

Metals (Continued)

Analysis Batch: 295098 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122945-H-2-E MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	294801
570-122945-H-2-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	294801

Prep Batch: 295271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total Recoverable	Water	200.7	
MB 570-295271/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-295271/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-295271/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-123346-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.7	
570-123346-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Prep Batch: 295281

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total Recoverable	Water	200.8	
MB 570-295281/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-295281/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-295281/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-122995-B-7-B MS	Matrix Spike	Total Recoverable	Water	200.8	
570-122995-B-7-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 295467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total Recoverable	Water	200.8	295281
MB 570-295281/1-A	Method Blank	Total Recoverable	Water	200.8	295281
LCS 570-295281/2-A	Lab Control Sample	Total Recoverable	Water	200.8	295281
LCSD 570-295281/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	295281
570-122995-B-7-B MS	Matrix Spike	Total Recoverable	Water	200.8	295281
570-122995-B-7-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	295281

Analysis Batch: 295537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total Recoverable	Water	200.7 Rev 4.4	295271
MB 570-295271/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	295271
LCS 570-295271/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	295271
LCSD 570-295271/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	295271
570-123346-A-1-C MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	295271
570-123346-A-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	295271

General Chemistry

Analysis Batch: 294791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	SM 2540D	
MB 570-294791/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-294791/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-294791/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-122999-G-2 DU	Duplicate	Total/NA	Water	SM 2540D	

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

General Chemistry

Analysis Batch: 295446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	Kelada 01	
MB 570-295446/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-295446/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-295446/18	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-295446/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-122475-D-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-122475-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 296119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	218.6 CR3	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Client Sample ID: BGBMP0003_20230104

Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	5 mL	5 mL	294711	01/10/23 17:57	OH1	EET CAL 4
	Instrument ID: GCMSPP									
Total/NA	Prep	625			1030.6 mL	2 mL	295105	01/11/23 12:19	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	295345	01/12/23 17:03	ULLI	EET CAL 4
	Instrument ID: GCMSEEE									
Dissolved	Filtration	Filtration			100 mL	100 mL	294368	01/09/23 03:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	294364	01/09/23 06:53	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	294364	01/09/23 05:41	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		5	4 mL	4 mL	294330	01/07/23 18:08	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	300.0		2	4 mL	4 mL	294668	01/10/23 11:06	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	314.0		1	4 mL	4 mL	294424	01/09/23 17:50	PS	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	294801	01/10/23 11:45	ECX6	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			295098	01/11/23 09:31	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	295271	01/12/23 06:20	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			295537	01/12/23 15:09	P1R	EET CAL 4
	Instrument ID: ICP10									
Dissolved	Filtration	Filtration			50 mL	50 mL	294776	01/10/23 11:06	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294822	01/10/23 12:16	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	295281	01/12/23 00:28	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295467	01/12/23 12:46	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	218.6 CR3		1			296119	01/16/23 11:45	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	295446	01/11/23 14:55	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	294791	01/10/23 11:19	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123009-1	BGBMP0003_20230104	Water	01/04/23 07:00	01/06/23 18:15

123009

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program | | DW | | NPDES | | RCRA ☐ Other

TestAmerica services ind- oC be performed corr &C thin Blanket er Agreement# 2019-22-TestAmerica b, and between Haley & A dr nc ub ar ff T stAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich Inc.	Tel/Fax: (620) 289-8606	Lab Contact: Virendra Patel (714) 896-6494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☐ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904 E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, CS-137 (E901.0 or E901.1) Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904, E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Trifium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni Pb Se Sb Tl- Method 200.7 B, Zn (Total Dissolved)	Method 200.8 Ag, Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni, Pb, Se Sb, Tl; Method 200.7, B, Zn (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1 250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fi TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fi half of 500mL Bottles that are sized up based on inventory availabi ity only need to be partially filled to meet the volume requirement as stated here
BGSMP0003_20230104	01/04/23	0700	G	WM	21	Y	N		x	x	x	x	x	x	x	x	x	x			x	x	x	x	
TB_			TB	WM	3	N	N															x				
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4; 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6		

570-123009 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
| | Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd. ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: SHA	Date/Time: 01/06/23 1800	Received by: EC
Relinquished by:	Company: EC	Date/Time: 1/6/23 1815	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:

Date/Time:
1/6/23 1300
1/6/23 1815
Date/Time:

1.8/1.8 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/6/2023 (Rev. 1)

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203538 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123009-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/8/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903 0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested. I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 1/9/23 1410	Company	Received by:	Date/Time.	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123009-3
Address: 5755 8th Street East,	Due Date Requested: 1/24/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X			X	
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1517	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s).	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123009-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days)			
State, Zip: CA, 95605	PO #:			
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	2	See QAS Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals BMP Performance

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the BMP Performance program starting from data collected October 1st, 2022.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123009-1

Login Number: 123009
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/6/2023 3:40:25 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123009-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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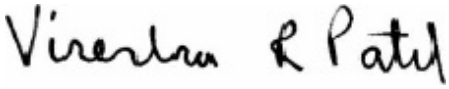
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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2/6/2023 3:40:25 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123009-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123009-2

Comments
No additional comments.

Receipt
The sample was received on 1/6/2023 6:15 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.8º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: BGBMP0003_20230104 (570-123009-1), (CCV 320-651542/2) and (MB 320-646691/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

l ient H: a yin& A dir oh, . It hP
j co/nhl-Sh: g one: F BBLRIBMd yt r g3 j

Job ID: 570-12900C-2

Client Sample ID: BGBMP0003_20230104 — Lab Sample ID: 570-123009-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1.2.9.7.8-j nl DD	0P000000T8	J.DX 3 g q	0P0000T7	0P00000017	4FSR	1		1619g	uoHyiSNd
1.2.9.7.8-j nl DL	0P0000010	J.DX 3 g q	0P0000T7	0P00000019	4FSR	1		1619g	uoHyiSNd
2.9.T.7.8-j nl DL	0P0000009C	J.DX 3 g q	0P0000T7	0P00000017	4FSR	1		1619g	uoHyiSNd
1.2.9.T.7.8-a xl DD	0P000002T	J.DX 3 g q	0P0000T7	0P0000002C	4FSR	1		1619g	uoHyiSNd
1.2.9.6.7.8-a xl DD	0P00000099	J.DX 3 g q	0P0000T7	0P00000025	4FSR	1		1619g	uoHyiSNd
1.2.9.7.8.C-a xl DD	0P0000008T	J.DX 3 g	0P0000T7	0P0000002T	4FSR	1		1619g	uoHyiSNd
1.2.9.T.7.8-a xl DL	0P000000T8	J.DX 3 g q	0P0000T7	0P00000020	4FSR	1		1619g	uoHyiSNd
1.2.9.6.7.8-a xl DL	0P0000005T	J.DX 3 g q	0P0000T7	0P00000017	4FSR	1		1619g	uoHyiSNd
1.2.9.7.8.C-a xl DL	0P0000029	J.DX 3 g	0P0000T7	0P00000011	4FSR	1		1619g	uoHyiSNd
2.9.T.6.7.8-a xl DL	0P00000051	J.DX 3 g	0P0000T7	0P00000010	4FSR	1		1619g	uoHyiSNd
1.2.9.T.6.7.8-a pl DD	0P0000017	J.DX 3 g	0P0000T7	0P0000001T	4FSR	1		1619g	uoHyiSNd
1.2.9.T.6.7.8-a pl DL	0P0000010	J.DX 3 g	0P0000T7	0P0000001C	4FSR	1		1619g	uoHyiSNd
1.2.9.T.7.8.C-a pl DL	0P00000061	J.DX 3 g q	0P0000T7	0P00000016	4FSR	1		1619g	uoHyiSNd
Ol DD	0P000008C	J.DX 3 g	0P0000C5	0P00000057	4FSR	1		1619g	uoHyiSNd
Ol DL	0P0000015	J.DX 3 g q	0P0000C5	0P00000055	4FSR	1		1619g	uoHyiSNd
uoHyi ul DD	0P00000025	J.DX q	0P00000C5	0P00000017	4FSR	1		1619g	uoHyiSNd
uoHyi ul DL	0P00000025	J.DX 3 g q	0P00000C5	0P0000000076	4FSR	1		1619g	uoHyiSNd
uoHyi j nl DD	0P0000010	J.DX 3 g q	0P0000T7	0P00000017	4FSR	1		1619g	uoHyiSNd
uoHyi j nl DL	0P000001T	J.DX 3 g q	0P0000T7	0P00000019	4FSR	1		1619g	uoHyiSNd
uoHyi a xl DD	0P0000095	J.DX 3 g q	0P0000T7	0P0000002T	4FSR	1		1619g	uoHyiSNd
uoHyi a xl DL	0P0000098	J.DX 3 g q	0P0000T7	0P00000010	4FSR	1		1619g	uoHyiSNd
uoHyi a pl DD	0P0000097	J.DX 3 g	0P0000T7	0P0000001T	4FSR	1		1619g	uoHyiSNd
uoHyi a pl DL	0P0000017	J.DX 3 g q	0P0000T7	0P00000016	4FSR	1		1619g	uoHyiSNd

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000017	ug/L		01/13/23 05:53	01/28/23 06:57	1
1,2,3,7,8-PeCDD	0.00000048	J,DX MB q	0.000047	0.00000017	ug/L		01/13/23 05:53	01/28/23 06:57	1
1,2,3,7,8-PeCDF	0.0000010	J,DX MB q	0.000047	0.00000013	ug/L		01/13/23 05:53	01/28/23 06:57	1
2,3,4,7,8-PeCDF	0.00000039	J,DX MB q	0.000047	0.00000017	ug/L		01/13/23 05:53	01/28/23 06:57	1
1,2,3,4,7,8-HxCDD	0.0000024	J,DX MB q	0.000047	0.00000029	ug/L		01/13/23 05:53	01/28/23 06:57	1
1,2,3,6,7,8-HxCDD	0.00000033	J,DX MB q	0.000047	0.00000025	ug/L		01/13/23 05:53	01/28/23 06:57	1
1,2,3,7,8,9-HxCDD	0.00000084	J,DX MB	0.000047	0.00000024	ug/L		01/13/23 05:53	01/28/23 06:57	1
1,2,3,4,7,8-HxCDF	0.00000048	J,DX MB q	0.000047	0.00000020	ug/L		01/13/23 05:53	01/28/23 06:57	1
1,2,3,6,7,8-HxCDF	0.00000054	J,DX MB q	0.000047	0.00000017	ug/L		01/13/23 05:53	01/28/23 06:57	1
1,2,3,7,8,9-HxCDF	0.0000023	J,DX MB	0.000047	0.00000011	ug/L		01/13/23 05:53	01/28/23 06:57	1
2,3,4,6,7,8-HxCDF	0.00000051	J,DX MB	0.000047	0.00000010	ug/L		01/13/23 05:53	01/28/23 06:57	1
1,2,3,4,6,7,8-HpCDD	0.0000017	J,DX MB	0.000047	0.00000014	ug/L		01/13/23 05:53	01/28/23 06:57	1
1,2,3,4,6,7,8-HpCDF	0.0000010	J,DX MB	0.000047	0.00000019	ug/L		01/13/23 05:53	01/28/23 06:57	1
1,2,3,4,7,8,9-HpCDF	0.00000061	J,DX MB q	0.000047	0.00000016	ug/L		01/13/23 05:53	01/28/23 06:57	1
OCDD	0.0000089	J,DX MB	0.000095	0.00000057	ug/L		01/13/23 05:53	01/28/23 06:57	1
OCDF	0.0000015	J,DX MB q	0.000095	0.00000055	ug/L		01/13/23 05:53	01/28/23 06:57	1
Total TCDD	0.00000025	J,DX q	0.0000095	0.00000017	ug/L		01/13/23 05:53	01/28/23 06:57	1
Total TCDF	0.00000025	J,DX MB q	0.0000095	0.0000000076	ug/L		01/13/23 05:53	01/28/23 06:57	1
Total PeCDD	0.0000010	J,DX MB q	0.000047	0.00000017	ug/L		01/13/23 05:53	01/28/23 06:57	1
Total PeCDF	0.0000014	J,DX MB q	0.000047	0.00000013	ug/L		01/13/23 05:53	01/28/23 06:57	1
Total HxCDD	0.0000035	J,DX MB q	0.000047	0.00000024	ug/L		01/13/23 05:53	01/28/23 06:57	1
Total HxCDF	0.0000038	J,DX MB q	0.000047	0.00000010	ug/L		01/13/23 05:53	01/28/23 06:57	1
Total HpCDD	0.0000037	J,DX MB	0.000047	0.00000014	ug/L		01/13/23 05:53	01/28/23 06:57	1
Total HpCDF	0.0000017	J,DX MB q	0.000047	0.00000016	ug/L		01/13/23 05:53	01/28/23 06:57	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 106*	*41/13/23 45:53*	*41/28/23 40:57*	*1*
13C-2,3,7,8-TCDF	*81*		*26 - 109*	*41/13/23 45:53*	*41/28/23 40:57*	*1*
13C-1,2,3,7,8-PeCDD	*06*		*25 - 181*	*41/13/23 45:53*	*41/28/23 40:57*	*1*
13C-1,2,3,7,8-PeCDF	*74*		*26 - 185*	*41/13/23 45:53*	*41/28/23 40:57*	*1*
13C-2,3,6,7,8-PeCDF	*04*		*21 - 178*	*41/13/23 45:53*	*41/28/23 40:57*	*1*
13C-1,2,3,6,7,8-HxCDD	*67*		*32 - 161*	*41/13/23 45:53*	*41/28/23 40:57*	*1*
13C-1,2,3,0,7,8-HxCDD	*59*		*28 - 134*	*41/13/23 45:53*	*41/28/23 40:57*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDF	64		20 - 152	41/13/23 45:53	41/28/23 40:57	1
13C-1,2,3,0,7,8-HxCDF	54		20 - 123	41/13/23 45:53	41/28/23 40:57	1
13C-1,2,3,7,8,9-HxCDF	81		29 - 167	41/13/23 45:53	41/28/23 40:57	1
13C-2,3,6,0,7,8-HxCDF	79		28 - 130	41/13/23 45:53	41/28/23 40:57	1
13C-1,2,3,6,0,7,8-HpCDD	74		23 - 164	41/13/23 45:53	41/28/23 40:57	1
13C-1,2,3,6,0,7,8-HpCDF	53		28 - 163	41/13/23 45:53	41/28/23 40:57	1
13C-1,2,3,6,7,8,9-HpCDF	70		20 - 138	41/13/23 45:53	41/28/23 40:57	1
13C-OCDD	87		17 - 157	41/13/23 45:53	41/28/23 40:57	1
13C-OCDF	81		17 - 157	41/13/23 45:53	41/28/23 40:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	94		35 - 197	41/13/23 45:53	41/28/23 40:57	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-2

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000095	0.00000066	ug/L		01/13/23 05:53	02/03/23 11:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*77*		*26 - 109*	*41/13/23 45:53*	*42/43/23 11:28*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*147*		*35 - 197*	*41/13/23 45:53*	*42/43/23 11:28*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-123009-1	BGBMP0003_20230104	90
570-123009-1 - RA	BGBMP0003_20230104	107
MB 320-646691/1-A	Method Blank	90
MB 320-646691/1-A - RA	Method Blank	109

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-646691/2-A	Lab Control Sample	91
LCSD 320-646691/3-A	Lab Control Sample Dup	93

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water | **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-123009-1	BGBMP0003_20230104	76	81	64	70	60	47	59	40
570-123009-1 - RA	BGBMP0003_20230104		77						
MB 320-646691/1-A	Method Blank	74	76	56	61	52	41	51	35
MB 320-646691/1-A - RA	Method Blank		69						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-123009-1	BGBMP0003_20230104	50	81	79	70	53	76	87	81
570-123009-1 - RA	BGBMP0003_20230104								
MB 320-646691/1-A	Method Blank	45	78	72	65	46	72	85	77
MB 320-646691/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water | **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-646691/2-A	Lab Control Sample	75	78	61	65	56	45	56	41
LCSD 320-646691/3-A	Lab Control Sample Dup	79	82	65	68	61	51	60	44

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-646691/2-A	Lab Control Sample	48	80	75	69	52	75	90	83
LCSD 320-646691/3-A	Lab Control Sample Dup	53	85	81	73	56	79	96	87

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123009-2
Project/Site: Boeing SSFL ISRA and BMP

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-646691/1-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 646691

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000027	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8-PeCDD	0.00000109	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8-PeCDF	0.00000239	J,DX	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1
2,3,4,7,8-PeCDF	0.00000133	J,DX	0.000050	0.00000028	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,7,8-HxCDD	0.00000338	J,DX	0.000050	0.00000053	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,6,7,8-HxCDD	0.00000160	J,DX	0.000050	0.00000045	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8,9-HxCDD	0.00000210	J,DX	0.000050	0.00000043	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,7,8-HxCDF	0.00000258	J,DX	0.000050	0.00000034	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,6,7,8-HxCDF	0.00000147	J,DX	0.000050	0.00000028	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,7,8,9-HxCDF	0.00000327	J,DX	0.000050	0.00000017	ug/L		01/13/23 05:53	01/28/23 03:52	1
2,3,4,6,7,8-HxCDF	0.000000951	J,DX	0.000050	0.00000017	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,6,7,8-HpCDD	0.00000236	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,6,7,8-HpCDF	0.00000235	J,DX q	0.000050	0.00000030	ug/L		01/13/23 05:53	01/28/23 03:52	1
1,2,3,4,7,8,9-HpCDF	0.00000153	J,DX	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1
OCDD	0.00000763	J,DX	0.00010	0.00000023	ug/L		01/13/23 05:53	01/28/23 03:52	1
OCDF	0.00000335	J,DX	0.00010	0.00000020	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total TCDD	ND		0.000010	0.00000027	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total TCDF	0.00000123	J,DX q	0.000010	0.00000013	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total PeCDD	0.00000109	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total PeCDF	0.00000405	J,DX q	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HxCDD	0.00000708	J,DX	0.000050	0.00000043	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HxCDF	0.00000931	J,DX	0.000050	0.00000017	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HpCDD	0.00000448	J,DX	0.000050	0.00000025	ug/L		01/13/23 05:53	01/28/23 03:52	1
Total HpCDF	0.00000388	J,DX q	0.000050	0.00000022	ug/L		01/13/23 05:53	01/28/23 03:52	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*25 - 164*	*01/13/23 05:53*	*01/28/23 03:52*	*1*
13C-2,3,7,8-TCDF	*76*		*24 - 169*	*01/13/23 05:53*	*01/28/23 03:52*	*1*
13C-1,2,3,7,8-PeCDD	*56*		*25 - 181*	*01/13/23 05:53*	*01/28/23 03:52*	*1*
13C-1,2,3,7,8-PeCDF	*61*		*24 - 185*	*01/13/23 05:53*	*01/28/23 03:52*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-646691/1-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 646691

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	52		21 - 178	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,7,8-HxCDD	41		32 - 141	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,6,7,8-HxCDD	51		28 - 130	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,7,8-HxCDF	35		26 - 152	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,6,7,8-HxCDF	45		26 - 123	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,7,8,9-HxCDF	78		29 - 147	01/13/23 05:53	01/28/23 03:52	1
13C-2,3,4,6,7,8-HxCDF	72		28 - 136	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,6,7,8-HpCDD	65		23 - 140	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,6,7,8-HpCDF	46		28 - 143	01/13/23 05:53	01/28/23 03:52	1
13C-1,2,3,4,7,8,9-HpCDF	72		26 - 138	01/13/23 05:53	01/28/23 03:52	1
13C-OCDD	85		17 - 157	01/13/23 05:53	01/28/23 03:52	1
13C-OCDF	77		17 - 157	01/13/23 05:53	01/28/23 03:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	90		35 - 197	01/13/23 05:53	01/28/23 03:52	1

Lab Sample ID: LCS 320-646691/2-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 646691

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000214		ug/L		107	67 - 158		
2,3,7,8-TCDF			0.000200	0.000217	MB	ug/L		109	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.00111	MB	ug/L		111	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.00111	MB	ug/L		111	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.00114	MB	ug/L		114	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.00107	MB	ug/L		107	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00104	MB	ug/L		104	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.00153	MB	ug/L		153	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.00111	MB	ug/L		111	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.00108	MB	ug/L		108	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00109	MB	ug/L		109	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.00109	MB	ug/L		109	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00105	MB	ug/L		105	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.00111	MB	ug/L		111	78 - 138		
OCDD			0.00200	0.00201	MB	ug/L		100	78 - 144		
OCDF			0.00200	0.00225	MB	ug/L		113	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	75		20 - 175
13C-2,3,7,8-TCDF	78		22 - 152
13C-1,2,3,7,8-PeCDD	61		21 - 227
13C-1,2,3,7,8-PeCDF	65		21 - 192
13C-2,3,4,7,8-PeCDF	56		13 - 328
13C-1,2,3,4,7,8-HxCDD	45		21 - 193
13C-1,2,3,6,7,8-HxCDD	56		25 - 163
13C-1,2,3,4,7,8-HxCDF	41		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-646691/2-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 646691

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	48		21 - 159
13C-1,2,3,7,8,9-HxCDF	80		17 - 205
13C-2,3,4,6,7,8-HxCDF	75		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	69		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	52		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	75		20 - 186
13C-OCDD	90		13 - 199
13C-OCDF	83		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	91		31 - 191

Lab Sample ID: LCSD 320-646691/3-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 646691

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000211		ug/L		105	67 - 158	1	50
2,3,7,8-TCDF			0.000200	0.000216	MB	ug/L		108	75 - 158	1	50
1,2,3,7,8-PeCDD			0.00100	0.00109	MB	ug/L		109	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.00110	MB	ug/L		110	80 - 134	1	50
2,3,4,7,8-PeCDF			0.00100	0.00112	MB	ug/L		112	68 - 160	2	50
1,2,3,4,7,8-HxCDD			0.00100	0.00105	MB	ug/L		105	70 - 164	1	50
1,2,3,6,7,8-HxCDD			0.00100	0.00103	MB	ug/L		103	76 - 134	2	50
1,2,3,7,8,9-HxCDD			0.00100	0.00145	MB	ug/L		145	64 - 162	5	50
1,2,3,4,7,8-HxCDF			0.00100	0.00108	MB	ug/L		108	72 - 134	1	50
1,2,3,6,7,8-HxCDF			0.00100	0.00110	MB	ug/L		110	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00107	MB	ug/L		107	78 - 130	1	50
2,3,4,6,7,8-HxCDF			0.00100	0.00108	MB	ug/L		108	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00107	MB	ug/L		107	70 - 140	2	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00104	MB	ug/L		104	82 - 122	0	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00109	MB	ug/L		109	78 - 138	2	50
OCDD			0.00200	0.00196	MB	ug/L		98	78 - 144	2	50
OCDF			0.00200	0.00222	MB	ug/L		111	63 - 170	1	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	79		20 - 175
13C-2,3,7,8-TCDF	82		22 - 152
13C-1,2,3,7,8-PeCDD	65		21 - 227
13C-1,2,3,7,8-PeCDF	68		21 - 192
13C-2,3,4,7,8-PeCDF	61		13 - 328
13C-1,2,3,4,7,8-HxCDD	51		21 - 193
13C-1,2,3,6,7,8-HxCDD	60		25 - 163
13C-1,2,3,4,7,8-HxCDF	44		19 - 202
13C-1,2,3,6,7,8-HxCDF	53		21 - 159
13C-1,2,3,7,8,9-HxCDF	85		17 - 205
13C-2,3,4,6,7,8-HxCDF	81		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	73		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-646691/3-A
Matrix: Water
Analysis Batch: 650041

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 646691

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	56		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	96		13 - 199
13C-OCDF	87		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	93		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-646691/1-A
Matrix: Water
Analysis Batch: 651542

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 646691

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000046	ug/L		01/13/23 05:53	02/03/23 08:59	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	69		24 - 169	01/13/23 05:53	02/03/23 08:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	109		35 - 197	01/13/23 05:53	02/03/23 08:59	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-2

Specialty Organics

Prep Batch: 646691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1 - RA	BGBMP0003_20230104	Total/NA	Water	1613B	
570-123009-1	BGBMP0003_20230104	Total/NA	Water	1613B	
MB 320-646691/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-646691/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-646691/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-646691/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 650041

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	1613B	646691
MB 320-646691/1-A	Method Blank	Total/NA	Water	1613B	646691
LCS 320-646691/2-A	Lab Control Sample	Total/NA	Water	1613B	646691
LCSD 320-646691/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	646691

Analysis Batch: 651542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1 - RA	BGBMP0003_20230104	Total/NA	Water	1613B	646691
MB 320-646691/1-A - RA	Method Blank	Total/NA	Water	1613B	646691

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-2

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1057.8 mL	20.0 uL	646691	01/13/23 05:53	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651542	02/03/23 11:28	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1057.8 mL	20.0 uL	646691	01/13/23 05:53	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650041	01/28/23 06:57	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-2

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123009-1	BGBMP0003_20230104	Water	01/04/23 07:00	01/06/23 18:15

123009

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program | | DW | | NPDES | | RCRA ☐ Other

TestAmerica services ind- oC be performed corr &C thin Blanket er Agreement# 2019-22-TestAmerica b, and between Haley & A dr nc ub ar ff T stAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich Inc.	Tel/Fax: (620) 289-8606	Lab Contact: Virendra Patel (714) 896-6494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☐ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904 E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1) Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904, E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Trifium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni Pb Se Sb Tl- Method 200.7 B, Zn (Total Dissolved)	Method 200.8 Ag, Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni, Pb, Se Sb, Tl; Method 200.7, B, Zn (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1 250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fi TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fi half of 500mL Bottles that are sized up based on inventory availabi ity only need to be partially filled to meet the volume requirement as stated here
BGSMP0003_20230104	01/04/23	0700	G	WM	21	Y	N		x	x	x	x	x	x	x	x	x	x			x	x	x	x	
TB_			TB	WM	3	N	N															x				
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4; 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6	

570-123009 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
| | Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C): Obs'd. ____ Corr'd: ____ Therm ID No.: ____

	Company	Date/Time		Date/Time
Relinquished by	SHA	01/06/23 1800	Received by	1/6/23 1300
Relinquished by	EC	1/6/23 1815	Received by	1/6/23 1815
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

1.8/1.8 Sc11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Page 22 of 28

2/6/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203538 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123009-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/8/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903 0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested. I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/9/23 1410				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time.	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123009-3
Address: 5755 8th Street East,	Due Date Requested: 1/24/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1517	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s).	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123009-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days)			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	2	See QAS Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins
Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203580.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123009-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGBMP0003_20230104 (570-123009-1)	1/4/23	07:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/9/23 1552	EC		1.10.23 1000	CALSCI
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 2.4c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123009-2

Login Number: 123009
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123009-2

Login Number: 123009
List Number: 4
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 01/10/23 04:14 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4c 1.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/19/2023 4:04:44 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123900-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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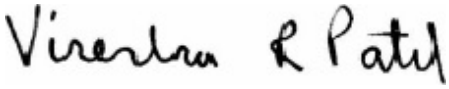
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Job ID: 570-123900-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123900-3

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.3º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Client Sample ID: LXBMP0010_20230110 — Lab Sample ID: 570-123900-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0049		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0024		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: LXBMP0012_20230110 — Lab Sample ID: 570-123900-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.021		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.019		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: LXBMP0010_20230110
Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0049		0.00050	0.000079	ug/L			01/17/23 18:31	1

Client Sample ID: LXBMP0012_20230110
Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.021		0.00050	0.000079	ug/L			01/17/23 18:35	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: LXBMP0010_20230110
Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0024		0.00050	0.000079	ug/L			01/17/23 18:48	1

Client Sample ID: LXBMP0012_20230110
Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.019		0.00050	0.000079	ug/L			01/17/23 18:52	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-415709/18
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 14:43	1

Lab Sample ID: MB 580-415709/19
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 14:47	1

Lab Sample ID: MB 580-415709/20
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 14:51	1

Lab Sample ID: LCS 580-415709/26
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00460		ug/L		92	77 - 123		

Lab Sample ID: LCSD 580-415709/27
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00468		ug/L		94	77 - 123	2	24

Lab Sample ID: 570-123916-E-1 MS
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00080		0.00500	0.00551		ug/L		94	71 - 125		

Lab Sample ID: 570-123916-E-1 MSD
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00080		0.00500	0.00544		ug/L		93	71 - 125	1	24

Lab Sample ID: 580-122215-A-1 MS
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00054		0.00500	0.00539		ug/L		97	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-122215-A-1 MSD
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00054		0.00500	0.00530		ug/L		95	71 - 125	2	24

Lab Sample ID: MB 580-415460/1-A
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 18:23	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Metals

Filtration Batch: 415460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1	LXBMP0010_20230110	Dissolved	Water	Filtration	
570-123900-2	LXBMP0012_20230110	Dissolved	Water	Filtration	
MB 580-415460/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 415709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1	LXBMP0010_20230110	Dissolved	Water	1631E	415460
570-123900-1	LXBMP0010_20230110	Total/NA	Water	1631E	
570-123900-2	LXBMP0012_20230110	Dissolved	Water	1631E	415460
570-123900-2	LXBMP0012_20230110	Total/NA	Water	1631E	
MB 580-415460/1-A	Method Blank	Dissolved	Water	1631E	415460
MB 580-415709/18	Method Blank	Total/NA	Water	1631E	
MB 580-415709/19	Method Blank	Total/NA	Water	1631E	
MB 580-415709/20	Method Blank	Total/NA	Water	1631E	
LCS 580-415709/26	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-415709/27	Lab Control Sample Dup	Total/NA	Water	1631E	
570-123916-E-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-123916-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-122215-A-1 MS	Matrix Spike	Total/NA	Water	1631E	
580-122215-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Client Sample ID: LXBMP0010_20230110

Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415460	01/16/23 10:41	DRM	EET SEA
Dissolved	Analysis	1631E		1			415709	01/17/23 18:48	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415709	01/17/23 18:31	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: LXBMP0012_20230110

Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415460	01/16/23 10:41	DRM	EET SEA
Dissolved	Analysis	1631E		1			415709	01/17/23 18:52	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415709	01/17/23 18:35	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123900-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123900-1	LXBMP0010_20230110	Water	01/10/23 09:30	01/12/23 17:55
570-123900-2	LXBMP0012_20230110	Water	01/10/23 09:00	01/12/23 17:55

2310C

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other

Eurofins Calscience, Inc.

TestAmerica s services under this CoC shal be performed accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc. its subsidiaries and affil ates, and TestAmerica Laboratories Inc

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	▪ 2 weeks			
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002 009 and/or 011 Watersheds	▫ 2 days			
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200 8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0002_			G	WM	8	Y	Y	X	X	X	X	X	X	X
ILBMP0004_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010_20230110	01/10/23	0930	G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_20230110	01/10/23	0900	G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X
								4	1	2	1	1	1	1

570-123900 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ▫ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.	
Relinquished by:	Company: SHA	Date/Time: ~~01/11/23 1135~~	Received by: FC	Date/Time: 1/12/23 1050
Relinquished by: FC	Company: 1/12/23/1755	Date/Time: 1/12/23/1050	Received by	Date/Time: 1/13/23 17..
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

19/1.9 2 3/2 3 5C12 VM
5c11

Form No. CA-C-WI-045 Rev 1.2, dated 1/8/2016

1/19/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204079.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123900-3
Address: 5755 8th Street East, ,	Due Date Requested: 1/30/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0010_20230110 (570-123900-1)	1/10/23	09:30 Pacific		Water			X	X	2	
LXBMP0012_20230110 (570-123900-2)	1/10/23	09:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		6/13/23 13:20	EC		1/4/23 925	EDN
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123900-3

Login Number: 123900
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123900-3

Login Number: 123900
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/16/23 10:37 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123009-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

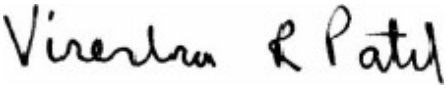
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123009-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123009-4

Comments
No additional comments.

Receipt
The sample was received on 1/6/2023 6:15 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.8º C.

Organic Prep
Method D4464: The sample duplicate precision for the following sample associated with analytical batch 570-300043 was flagged as being outside control limits due to a L.I.M.S. limitation: (570-123303-A-1) and (570-123303-A-1 DU). The mean grain size for the sample and sample duplicate were within RPD acceptance criteria. Method D4464.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-4

Client Sample ID: BGBMP0003_20230104

Lab Sample ID: 570-123009-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	8.78		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	86.76		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	95.54		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	4.46		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-4

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**8.78**		0.01	0.01	%			01/31/23 13:15	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/31/23 13:15	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			01/31/23 13:15	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/31/23 13:15	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/31/23 13:15	1
Silt (0.00391 to 0.0625mm)	**86.76**		0.01	0.01	%			01/31/23 13:15	1
Total Silt and Clay (0 to 0.0626mm)	**95.54**		0.01	0.01	%			01/31/23 13:15	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/31/23 13:15	1
Very Fine Sand (0.0625 to 0.125 mm)	**4.46**		0.01	0.01	%			01/31/23 13:15	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

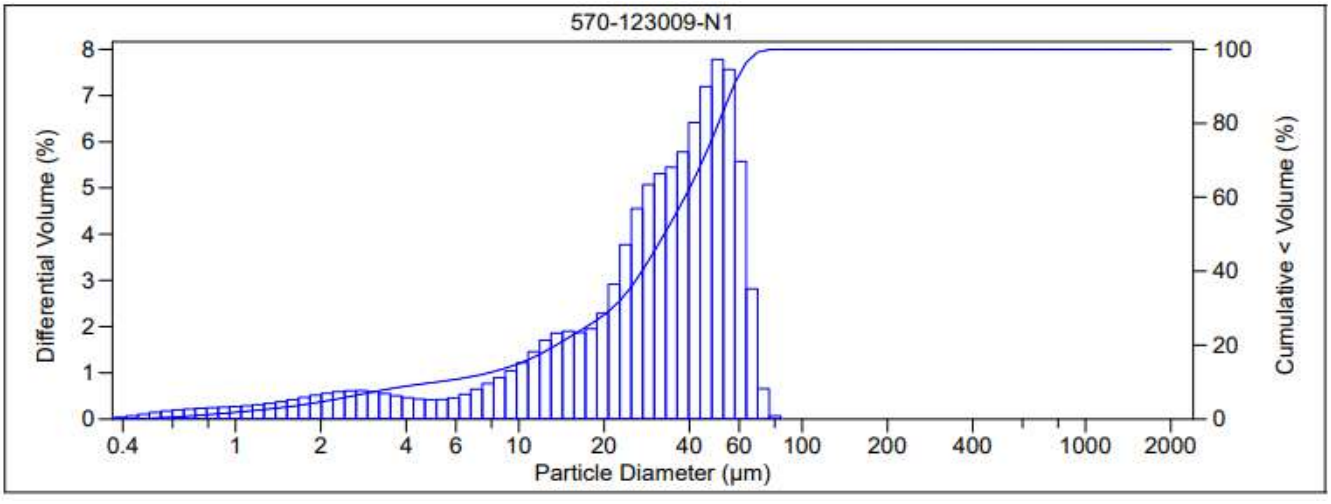
Haley & Aldrich, Inc.

Date Sampled:	01/04/23
Date Received:	01/06/23
Work Order No:	570-123009
Date Analyzed:	01/31/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
BGBMP0003_20230104		Silt	0.032

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.00	4.46	86.76	8.78	95.54



Geotechnical

Analysis Batch: 300043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-4

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			300043	01/31/23 13:15	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
j ro/ectSBite: goeinF BBLRIBMA and gs j

Job ID: 570-129003-P

Laboratory: Eurofins Calscience

All accreditationf Sertin Nationf held by thif laboratory are lif ted. p ot all accreditationf Sertin Nationf are azzlicable to thif rezort.

Authority	Program	Identification Number	Expiration Date
AriZona	Btate	A80690	11-1u-29
CaliNornia	Rof AnFelef CoQnty Banitation Dif trictf	10103	07-91-29
CaliNornia	BCAv s D RAj	17RA0313	11-90-29
CaliNornia	Btate	9062	07-91-29
p eQada	Btate	CA00111	06-01-29
E reFon	p 4 RAj	P175	02-02-29
UBDA	UB Lederal j roFramf	j 990-22-00053	05-2P-29
Waf hinFton	Btate	C31u-16	10-11-29

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-4

Method	Method Description	Protocol	Laboratory
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4

Protocol References:

ASTM = ASTM International

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123009-1	BGBMP0003_20230104	Water	01/04/23 07:00	01/06/23 18:15

123009

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program | | DW | | NPDES | | RCRA ☐ Other

TestAmerica services ind- oC be performed corr &C thin Blanket er Agreement# 2019-22-TestAmerica b, and between Haley & A dr nc ub ar ff T stAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich Inc.	Tel/Fax: (620) 289-8606	Lab Contact: Virendra Patel (714) 896-6494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☐ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904 E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, CS-137 (E901.0 or E901.1) Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904, E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Trifium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni Pb Se Sb Tl- Method 200.7 B, Zn (Total Dissolved)	Method 200.8 Ag, Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni, Pb, Se Sb, Tl; Method 200.7, B, Zn (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1 250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fi TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fi half of 500mL Bottles that are sized up based on inventory availabi ity only need to be partially filled to meet the volume requirement as stated here
BGSMP0003_20230104	01/04/23	0700	G	WM	21	Y	N		x	x	x	x	x	x	x	x	x	x			x	x	x	x	
TB_			TB	WM	3	N	N															x				
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4; 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6	

570-123009 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
| | Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd. ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: SHA	Date/Time: 01/06/23 1800	Received by: EC
Relinquished by:	Company: EC	Date/Time: 1/6/23 1815	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:

Date/Time: 1/6/23 1300
Date/Time: 1/6/23 1815
Date/Time:

1.8/1.8 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Page 14 of 18

2/2/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203538 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123009-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/8/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903 0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested. I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 1/9/23 1410	Company	Received by:	Date/Time.	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123009-3
Address: 5755 8th Street East,	Due Date Requested: 1/24/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X			X	
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1517	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/2/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s).	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123009-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days)			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	2	See QAS Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123009-4

Login Number: 123009
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/13/2023 2:12:04 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123009-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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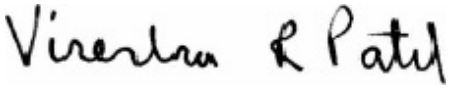
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123009-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123009-5

Comments
No additional comments.

Receipt
The sample was received on 1/6/2023 6:15 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.8º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following sample was received with insufficient preservation at a pH of >2 SU: BGBMP0003_20230104 (570-123009-1). 570-123009-T-1. The sample was preserved to the appropriate pH in the laboratory.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 597777
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230104 (570-123009-1), (LCS 160-597777/2-A), (LCSB 160-597777/3-A), (MB 160-597777/1-A), (570-123670-K-1-F), (570-123670-K-1-I DU), (570-123670-K-1-G MS) and (570-123670-K-1-H MSBT)

Method 900.0: Gross Alpha Beta prep batch 160-598084:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230104 (570-123009-1), (LCS 160-598084/2-A), (LCSB 160-598084/3-A), (MB 160-598084/1-A), (570-123902-K-2-E), (570-123902-K-2-H DU), (570-123902-K-2-F MS) and (570-123902-K-2-G MSBT)

Method 901.1: Gamma Prep Batch 160-596826
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211

Job ID: 570-123009-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Bi-214 Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20230104 (570-123009-1) and (570-123009-T-1-I DU)

Method 901.1: Gamma Prep Batch 160-597762
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230104 (570-123009-1), (LCS 160-597762/2-A), (MB 160-597762/1-A) and (570-123009-U-1-L DU)

Methods 903.0, 9315: Radium-226 batch 596421
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230104 (570-123009-1), (LCS 160-596421/2-A), (LCSD 160-596421/3-A) and (MB 160-596421/1-A)

Method 903.0: Radium-226 prep batch 160-596814:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230104 (570-123009-1), (LCS 160-596814/2-A), (MB 160-596814/1-A), (280-171142-A-1-A) and (280-171142-B-1-B DU)

Job ID: 570-123009-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 904.0: Radium-228 prep batch 160-596818:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230104 (570-123009-1), (LCS 160-596818/2-A), (MB 160-596818/1-A), (280-171142-A-1-B) and (280-171142-B-1-C DU)

Methods 904.0, 9320: Radium-228 prep batch 160-596471:

The Ra-228 laboratory control sample (LCS) associated with the following samples recovered at 128%: (LCS 160-596471/2-A). The limits in our LIMS system at (75-125%) reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS is within criteria and no further action is required.

Method 904.0: Radium-228 prep batch 160-596471:

The following sample(s) did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interference. During preparation the analyst visually noted matrix effects. The data have been reported with this narrative.

BGBMP0003_20230104 (570-123009-1)

Methods 904.0, 9320: Radium-228 prep batch 160-596471:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230104 (570-123009-1), (LCS 160-596471/2-A), (LCSD 160-596471/3-A) and (MB 160-596471/1-A)

Method 905: Strontium-90 Batch 597060
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230104 (570-123009-1), (LCS 160-597060/2-A), (LCSD 160-597060/3-A) and (MB 160-597060/1-A)

Method 905: Strontium-90 prep batch 160-596746:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230104 (570-123009-1), (LCS 160-596746/2-A), (LCSD 160-596746/3-A), (MB 160-596746/1-A) and (570-122687-U-1-C)

Method 906.0: Tritium 597488
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230104 (570-123009-1), (LCS 160-597488/2-A), (MB 160-597488/1-A), (570-123038-U-2-B), (570-123038-U-2-C DU), (570-123414-Q-1-B) and (570-123414-Q-1-C MS)

Method A-01-R: Isotopic Uranium batch 597259
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230104 (570-123009-1), (LCS 160-597259/2-A), (MB 160-597259/1-A), (570-123038-A-2-B) and (570-123038-A-2-C DU)

Method A-01-R: Isotopic Uranium batch 598867

Job ID: 570-123009-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230104 (570-123009-1), (LCS 160-597806/2-A), (MB 160-597806/1-A), (570-123902-K-2-B) and (570-123902-K-2-C DU)

Method ExtChrom: Uranium Prep Batch 160-597806:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: BGBMP0003_20230104 (570-123009-1).

Method ExtChrom: Uranium Prep Batch 160-597259

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: BGBMP0003_20230104 (570-123009-1).

Method PrecSep_0: Radium-228 Prep Batch 160-596471

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230104 (570-123009-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0:

Method PrecSep-21: Radium-226 Prep Batch 160-596421

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230104 (570-123009-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21:

Method PrecSep-7: Strontium 90 Prep Batch 160-596746

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230104 (570-123009-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-597060

Insufficient sample volume was available to perform a sample duplicate for the following samples: BGBMP0003_20230104 (570-123009-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-597060

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230104 (570-123009-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Client Sample ID: BGBMP0003_20230104 **Lab Sample ID: 570-123009-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**1.22**		0.841	0.853	3.00	1.22	pCi/L	01/23/23 11:47	01/30/23 19:04	1
Gross Beta	0.622	U	0.507	0.511	4.00	0.769	pCi/L	01/23/23 11:47	01/30/23 19:04	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.906	U	0.791	0.797	3.00	1.21	pCi/L	01/24/23 13:25	02/03/23 18:55	1
Gross Beta	**1.45**		0.627	0.644	4.00	0.867	pCi/L	01/24/23 13:25	02/03/23 18:55	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.70	U	7.34	7.34	20.0	8.99	pCi/L	01/13/23 11:41	02/03/23 17:41	1
Potassium-40	-51.2	U	96.2	96.4		124	pCi/L	01/13/23 11:41	02/03/23 17:41	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-4.40	U	7.92	7.93	20.0	9.05	pCi/L	01/23/23 09:10	02/03/23 19:56	1
Potassium-40	**79.5**		68.7	69.3		65.8	pCi/L	01/23/23 09:10	02/03/23 19:56	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0220	U	0.0889	0.0889	1.00	0.170	pCi/L	01/11/23 09:34	02/02/23 09:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.0*		*40 - 110*	*01/11/23 09:34*	*02/02/23 09:47*	*1*

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0628	U	0.0650	0.0652	1.00	0.101	pCi/L	01/13/23 09:48	02/06/23 09:57	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.7*		*40 - 110*	*01/13/23 09:48*	*02/06/23 09:57*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.304	U G	0.620	0.620	1.00	1.24	pCi/L	01/11/23 10:20	01/20/23 12:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.0*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:15*	*1*
Y Carrier	*68.8*		*40 - 110*	*01/11/23 10:20*	*01/20/23 12:15*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.215	U	0.380	0.380	1.00	0.774	pCi/L	01/13/23 10:13	01/20/23 12:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.7*		*40 - 110*	*01/13/23 10:13*	*01/20/23 12:22*	*1*
Y Carrier	*80.4*		*40 - 110*	*01/13/23 10:13*	*01/20/23 12:22*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.0643	U	0.360	0.360	3.00	0.635	pCi/L	01/12/23 11:13	01/27/23 18:51	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.8*		*40 - 110*	*01/12/23 11:13*	*01/27/23 18:51*	*1*
Y Carrier	*88.6*		*40 - 110*	*01/12/23 11:13*	*01/27/23 18:51*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.324	U	0.394	0.395	3.00	0.652	pCi/L	01/16/23 10:20	01/26/23 17:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*85.2*		*40 - 110*	*01/16/23 10:20*	*01/26/23 17:38*	*1*
Y Carrier	*78.5*		*40 - 110*	*01/16/23 10:20*	*01/26/23 17:38*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	30.6	U	177	177	500	319	pCi/L	01/19/23 12:02	01/20/23 22:05	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.214	U	0.229	0.230	1.00	0.279	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*80.2*		*30 - 110*	*01/17/23 16:09*	*01/25/23 14:42*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: BGBMP0003_20230104
Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.251		0.229	0.229	1.00	0.226	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*76.4*		*30 - 110*	*01/23/23 13:17*	*01/27/23 11:32*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
280-171142-B-1-B DU	Duplicate	89.1
570-123009-1	BGBMP0003_20230104	69.0
LCS 160-596421/2-A	Lab Control Sample	91.6
LCS 160-596814/2-A	Lab Control Sample	95.0
LCSD 160-596421/3-A	Lab Control Sample Dup	99.4
MB 160-596421/1-A	Method Blank	97.5
MB 160-596814/1-A	Method Blank	96.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
570-123009-1	BGBMP0003_20230104	92.7

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
280-171142-B-1-C DU	Duplicate	89.1	86.4
570-123009-1	BGBMP0003_20230104	69.0	68.8
LCS 160-596471/2-A	Lab Control Sample	91.6	77.0
LCS 160-596818/2-A	Lab Control Sample	95.0	85.2
LCSD 160-596471/3-A	Lab Control Sample Dup	99.4	84.1
MB 160-596471/1-A	Method Blank	97.5	82.6
MB 160-596818/1-A	Method Blank	96.6	87.1

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
570-123009-1	BGBMP0003_20230104	92.7	80.4

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123009-5
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123009-1	BGBMP0003_20230104	87.8	88.6
LCS 160-596746/2-A	Lab Control Sample	88.4	89.0
LCS 160-597060/2-A	Lab Control Sample	84.7	70.7
LCSD 160-596746/3-A	Lab Control Sample Dup	85.9	91.6
LCSD 160-597060/3-A	Lab Control Sample Dup	79.1	74.8
MB 160-596746/1-A	Method Blank	87.7	74.4
MB 160-597060/1-A	Method Blank	77.0	68.0

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123009-1	BGBMP0003_20230104	85.2	78.5

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-123009-1	BGBMP0003_20230104	80.2
570-123038-A-2-C DU	Duplicate	86.2
LCS 160-597259/2-A	Lab Control Sample	87.1
LCS 160-597806/2-A	Lab Control Sample	84.6
MB 160-597259/1-A	Method Blank	85.3
MB 160-597806/1-A	Method Blank	88.9

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-123009-1	BGBMP0003_20230104	76.4
570-123902-K-2-C DU	Duplicate	85.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-597777/1-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597777

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.08001	U	0.636	0.636	3.00	1.19	pCi/L	01/23/23 11:47	01/30/23 19:04	1
Gross Beta	-0.2904	U	0.420	0.421	4.00	0.816	pCi/L	01/23/23 11:47	01/30/23 19:04	1

Lab Sample ID: LCS 160-597777/2-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.22		7.48	3.00	2.46	pCi/L	101	75 - 125

Lab Sample ID: LCSB 160-597777/3-A
Matrix: Water
Analysis Batch: 598614

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	67.77		7.31	4.00	0.875	pCi/L	92	75 - 125

Lab Sample ID: 570-123670-K-1-G MS
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	0.308	U	50.5	50.97		7.16	3.00	1.38	pCi/L	100	60 - 140

Lab Sample ID: 570-123670-K-1-H MSBT
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	2.89		73.7	75.66		8.09	4.00	0.820	pCi/L	99	60 - 140

Lab Sample ID: 570-123670-K-1-I DU
Matrix: Water
Analysis Batch: 598850

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597777

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	0.308	U	1.179	U	0.892	3.00	1.28	pCi/L	0.51	1
Gross Beta	2.89		2.634		0.775	4.00	0.892	pCi/L	0.16	1

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued)

Lab Sample ID: MB 160-598084/1-A
Matrix: Water
Analysis Batch: 599319

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598084

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.8575	U	0.757	0.763	3.00	1.18	pCi/L	01/24/23 13:25	02/03/23 18:50	1
Gross Beta	0.05759	U	0.427	0.427	4.00	0.742	pCi/L	01/24/23 13:25	02/03/23 18:50	1

Lab Sample ID: LCS 160-598084/2-A
Matrix: Water
Analysis Batch: 599319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598084

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	56.66		7.91	3.00	1.84	pCi/L	112	75 - 125

Lab Sample ID: LCSB 160-598084/3-A
Matrix: Water
Analysis Batch: 599319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598084

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	65.34		7.07	4.00	1.00	pCi/L	89	75 - 125

Lab Sample ID: 570-123902-K-2-F MS
Matrix: Water
Analysis Batch: 599293

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 598084

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	0.346	U	50.5	38.32		5.25	3.00	0.860	pCi/L	75	60 - 140

Lab Sample ID: 570-123902-K-2-G MSBT
Matrix: Water
Analysis Batch: 599293

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 598084

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	1.02		73.7	67.59		7.27	4.00	0.875	pCi/L	90	60 - 140

Lab Sample ID: 570-123902-K-2-H DU
Matrix: Water
Analysis Batch: 599293

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 598084

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	0.346	U	0.1532	U	0.473	3.00	0.881	pCi/L	0.17	1
Gross Beta	1.02		0.4396	U	0.516	4.00	0.843	pCi/L	0.51	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-596826/1-A
Matrix: Water
Analysis Batch: 599329

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596826

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.907	U	10.1	10.1	20.0	12.5	pCi/L	01/13/23 11:41	02/03/23 17:39	1
Potassium-40	20.39	U	126	126		145	pCi/L	01/13/23 11:41	02/03/23 17:39	1

Lab Sample ID: LCS 160-596826/2-A
Matrix: Water
Analysis Batch: 599336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596826

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	137200		16300		297	pCi/L	102	75 - 125
Cesium-137	41000	42260		5030	20.0	72.1	pCi/L	103	75 - 125
Cobalt-60	18200	19050		2270		38.2	pCi/L	105	75 - 125

Lab Sample ID: 570-123009-1 DU
Matrix: Water
Analysis Batch: 599502

Client Sample ID: BGBMP0003_20230104
Prep Type: Total/NA
Prep Batch: 596826

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-1.70	U	3.961	U	9.55	20.0	11.7	pCi/L	0.33	1
Potassium-40	-51.2	U	-72.50	U	166		182	pCi/L	0.08	1

Lab Sample ID: MB 160-597762/1-A
Matrix: Water
Analysis Batch: 599334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597762

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.2826	U	7.23	7.23	20.0	8.99	pCi/L	01/23/23 09:10	02/03/23 19:56	1
Potassium-40	-27.29	U	98.1	98.2		124	pCi/L	01/23/23 09:10	02/03/23 19:56	1

Lab Sample ID: LCS 160-597762/2-A
Matrix: Water
Analysis Batch: 599336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597762

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	136300		16200		315	pCi/L	101	75 - 125
Cesium-137	41000	41970		5000	20.0	76.7	pCi/L	102	75 - 125
Cobalt-60	18200	18940		2260		46.2	pCi/L	104	75 - 125

Lab Sample ID: 570-123009-1 DU
Matrix: Water
Analysis Batch: 599329

Client Sample ID: BGBMP0003_20230104
Prep Type: Dissolved
Prep Batch: 597762

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-4.40	U	1.760	U	9.33	20.0	11.7	pCi/L	0.36	1
Potassium-40	79.5		-6.796	U	124		145	pCi/L	0.45	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-596421/1-A
Matrix: Water
Analysis Batch: 599059

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596421

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02900	U	0.0421	0.0422	1.00	0.0719	pCi/L	01/11/23 09:34	02/02/23 09:40	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*97.5*		*40 - 110*	*01/11/23 09:34*	*02/02/23 09:40*	*1*

Lab Sample ID: LCS 160-596421/2-A
Matrix: Water
Analysis Batch: 599059

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596421

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.48		1.08	1.00	0.0823	pCi/L	92	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*91.6*		*40 - 110*

Lab Sample ID: LCSD 160-596421/3-A
Matrix: Water
Analysis Batch: 599059

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 596421

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.98		1.12	1.00	0.0883	pCi/L	97	75 - 125	0.23	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*

Lab Sample ID: MB 160-596814/1-A
Matrix: Water
Analysis Batch: 599338

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596814

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04849	U	0.0600	0.0602	1.00	0.0992	pCi/L	01/13/23 09:48	02/06/23 09:56	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.6*		*40 - 110*	*01/13/23 09:48*	*02/06/23 09:56*	*1*

Lab Sample ID: LCS 160-596814/2-A
Matrix: Water
Analysis Batch: 599338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596814

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	11.60		1.17	1.00	0.0769	pCi/L	102	75 - 125		

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-596814/2-A
Matrix: Water
Analysis Batch: 599338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596814

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.0		40 - 110

Lab Sample ID: 280-171142-B-1-B DU
Matrix: Water
Analysis Batch: 599338

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596814

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.243			0.2352		0.0928	1.00	0.0938	pCi/L			0.04	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	89.1		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-596471/1-A
Matrix: Water
Analysis Batch: 597712

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596471

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.04645	U	0.259	0.259	1.00	0.502	pCi/L	01/11/23 10:20	01/20/23 12:06	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	97.5		40 - 110	01/11/23 10:20	01/20/23 12:06	1
Y Carrier	82.6		40 - 110	01/11/23 10:20	01/20/23 12:06	1

Lab Sample ID: LCS 160-596471/2-A
Matrix: Water
Analysis Batch: 597712

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596471

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.26	10.58		1.44	1.00	0.643	pCi/L	128	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	91.6		40 - 110
Y Carrier	77.0		40 - 110

Lab Sample ID: LCSD 160-596471/3-A
Matrix: Water
Analysis Batch: 597712

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 596471

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.26	9.293		1.25	1.00	0.462	pCi/L	112	75 - 125	0.48	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-596471/3-A
Matrix: Water
Analysis Batch: 597712

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 596471

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*99.4*		*40 - 110*
Y Carrier	*84.1*		*40 - 110*

Lab Sample ID: MB 160-596818/1-A
Matrix: Water
Analysis Batch: 597614

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596818

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.5270	U	0.399	0.402	1.00	0.623	pCi/L	01/13/23 10:13	01/20/23 12:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*96.6*		*40 - 110*	*01/13/23 10:13*	*01/20/23 12:10*	*1*
Y Carrier	*87.1*		*40 - 110*	*01/13/23 10:13*	*01/20/23 12:10*	*1*

Lab Sample ID: LCS 160-596818/2-A
Matrix: Water
Analysis Batch: 597613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 596818

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.26	9.450		1.28	1.00	0.590	pCi/L	114	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*95.0*		*40 - 110*
Y Carrier	*85.2*		*40 - 110*

Lab Sample ID: 280-171142-B-1-C DU
Matrix: Water
Analysis Batch: 597613

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 596818

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.200	U		0.4563	U	0.367	1.00	0.567	pCi/L			0.37	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*89.1*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-596746/1-A
Matrix: Water
Analysis Batch: 598557

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 596746

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1133	U	0.196	0.196	3.00	0.373	pCi/L	01/12/23 11:13	01/27/23 18:47	1

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	87.7		40 - 110	01/12/23 11:13	01/27/23 18:47	1
Y Carrier	74.4		40 - 110	01/12/23 11:13	01/27/23 18:47	1

Lab Sample ID: LCS 160-596746/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 598557 — **Prep Batch: 596746**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.38	7.183		0.793	3.00	0.290	pCi/L	97	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	88.4		40 - 110
Y Carrier	89.0		40 - 110

Lab Sample ID: LCSD 160-596746/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 598557 — **Prep Batch: 596746**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.38	6.876		0.769	3.00	0.301	pCi/L	93	75 - 125	0.20	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	85.9		40 - 110
Y Carrier	91.6		40 - 110

Lab Sample ID: MB 160-597060/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 598291 — **Prep Batch: 597060**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1985	U	0.247	0.248	3.00	0.478	pCi/L	01/16/23 10:20	01/26/23 17:35	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	77.0		40 - 110	01/16/23 10:20	01/26/23 17:35	1
Y Carrier	68.0		40 - 110	01/16/23 10:20	01/26/23 17:35	1

Lab Sample ID: LCS 160-597060/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 598291 — **Prep Batch: 597060**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.38	7.381		0.866	3.00	0.408	pCi/L	100	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	84.7		40 - 110
Y Carrier	70.7		40 - 110

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCSD 160-597060/3-A
Matrix: Water
Analysis Batch: 598291

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597060

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.38	6.740		0.814	3.00	0.392	pCi/L	91	75 - 125	0.38	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*79.1*		*40 - 110*
Y Carrier	*74.8*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-597488/1-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597488

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-84.68	U	164	165	500	326	pCi/L	01/19/23 12:02	01/20/23 20:22	1

Lab Sample ID: LCS 160-597488/2-A
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597488

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2120	1848		381	500	324	pCi/L	87	75 - 125		

Lab Sample ID: 570-123414-Q-1-C MS
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	-26.1	U	2120	1947		376	500	297	pCi/L	92	60 - 140		

Lab Sample ID: 570-123038-U-2-C DU
Matrix: Water
Analysis Batch: 597784

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597488

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	-83.3	U		-97.75	U	162	500	324	pCi/L			0.05	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-597259/1-A
Matrix: Water
Analysis Batch: 598217

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597259

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.05873	U	0.09433	0.09455	1.00	0.172	pCi/L	01/17/23 16:09	01/25/23 14:42	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Tracer	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	85.3		30 - 110	01/17/23 16:09	01/25/23 14:42	1

Lab Sample ID: LCS 160-597259/2-A
Matrix: Water
Analysis Batch: 598218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597259

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.19		1.46	1.00	0.151	pCi/L	96	75 - 125		
Uranium-238			13.0	13.33		1.56	1.00	0.135	pCi/L	102	75 - 125		

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	87.1		30 - 110

Lab Sample ID: 570-123038-A-2-C DU
Matrix: Water
Analysis Batch: 598230

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597259

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	0.128			0.07847	U	0.1118	1.00	0.163	pCi/L			0.22	1

Tracer	DU %Yield	DU Qualifier	Limits
Uranium-232	86.2		30 - 110

Lab Sample ID: MB 160-597806/1-A
Matrix: Water
Analysis Batch: 598399

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597806

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1420		0.1193	0.1196	1.00	0.134	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Tracer	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	88.9		30 - 110	01/23/23 13:17	01/27/23 11:32	1

Lab Sample ID: LCS 160-597806/2-A
Matrix: Water
Analysis Batch: 598400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597806

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.58		1.50	1.00	0.117	pCi/L	99	75 - 125		
Uranium-238			13.0	12.67		1.51	1.00	0.102	pCi/L	97	75 - 125		

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	84.6		30 - 110

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: 570-123902-K-2-C DU
Matrix: Water
Analysis Batch: 598414

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 597806

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.356			0.1046	U	0.1246	1.00	0.162	pCi/L			0.72	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Uranium-232	*85.8*		*30 - 110*

Rad

Prep Batch: 596421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	PrecSep-21	
MB 160-596421/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-596421/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-596421/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 596471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	PrecSep_0	
MB 160-596471/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-596471/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-596471/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Filtration Batch: 596502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	Filtration	
570-123009-1	BGBMP0003_20230104	Dissolved	Water	Filtration	
570-123009-1	BGBMP0003_20230104	Dissolved	Water	Filtration	
570-123009-1 DU	BGBMP0003_20230104	Dissolved	Water	Filtration	

Prep Batch: 596746

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	PrecSep-7	
MB 160-596746/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-596746/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-596746/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 596814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	PrecSep-21	596502
MB 160-596814/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-596814/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
280-171142-B-1-B DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 596818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	PrecSep_0	596502
MB 160-596818/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-596818/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
280-171142-B-1-C DU	Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 596826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	Fill_Geo-0	
MB 160-596826/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-596826/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123009-1 DU	BGBMP0003_20230104	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	PrecSep-7	596502
MB 160-597060/1-A	Method Blank	Total/NA	Water	PrecSep-7	

Rad (Continued)

Prep Batch: 597060 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-597060/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597060/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	ExtChrom	
MB 160-597259/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597259/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123038-A-2-C DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 597488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	LSC_Dist_Susp	
MB 160-597488/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-597488/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-123414-Q-1-C MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-123038-U-2-C DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Filtration Batch: 597489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-K-2-F MS	Matrix Spike	Dissolved	Water	Filtration	
570-123902-K-2-G MSBT	Matrix Spike	Dissolved	Water	Filtration	
570-123902-K-2-C DU	Duplicate	Dissolved	Water	Filtration	
570-123902-K-2-H DU	Duplicate	Dissolved	Water	Filtration	

Prep Batch: 597762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	Fill_Geo-0	596502
MB 160-597762/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597762/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123009-1 DU	BGBMP0003_20230104	Dissolved	Water	Fill_Geo-0	596502

Prep Batch: 597777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Total/NA	Water	Evaporation	
MB 160-597777/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-597777/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-597777/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123670-K-1-G MS	Matrix Spike	Total/NA	Water	Evaporation	
570-123670-K-1-H MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-123670-K-1-I DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 597806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	ExtChrom	596502
MB 160-597806/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597806/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123902-K-2-C DU	Duplicate	Dissolved	Water	ExtChrom	597489

Rad

Prep Batch: 598084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-1	BGBMP0003_20230104	Dissolved	Water	Evaporation	596502
MB 160-598084/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598084/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598084/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123902-K-2-F MS	Matrix Spike	Dissolved	Water	Evaporation	597489
570-123902-K-2-G MSBT	Matrix Spike	Dissolved	Water	Evaporation	597489
570-123902-K-2-H DU	Duplicate	Dissolved	Water	Evaporation	597489

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Client Sample ID: BGBMP0003_20230104

Date Collected: 01/04/23 07:00
Date Received: 01/06/23 18:15

Lab Sample ID: 570-123009-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1000 mL	1000 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	Evaporation			200.00 mL	1.0 g	598084	01/24/23 13:25	MST	EET SL
Dissolved	Analysis	900.0		1			599294	02/03/23 18:55	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	597777	01/23/23 11:47	MST	EET SL
Total/NA	Analysis	900.0		1			598614	01/30/23 19:04	SCB	EET SL
	Instrument ID: GFPCORANGE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597762	01/23/23 09:10	JML	EET SL
Dissolved	Analysis	901.1		1			599332	02/03/23 19:56	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	596826	01/13/23 11:41	JML	EET SL
Total/NA	Analysis	901.1		1			599334	02/03/23 17:41	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	PrecSep-21			744.41 mL	1.0 g	596814	01/13/23 09:48	DJP	EET SL
Dissolved	Analysis	903.0		1	1.0 mL	1.0 mL	599338	02/06/23 09:57	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			756.31 mL	1.0 g	596421	01/11/23 09:34	DJP	EET SL
Total/NA	Analysis	903.0		1			598940	02/02/23 09:47	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	PrecSep_0			744.41 mL	1.0 g	596818	01/13/23 10:13	DJP	EET SL
Dissolved	Analysis	904.0		1			597613	01/20/23 12:22	SCB	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			756.31 mL	1.0 g	596471	01/11/23 10:20	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	597614	01/20/23 12:15	SCB	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	PrecSep-7			492.05 mL	1.0 g	597060	01/16/23 10:20	DJP	EET SL
Dissolved	Analysis	905		1			598291	01/26/23 17:38	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-7			504.43 mL	1.0 g	596746	01/12/23 11:13	DJP	EET SL
Total/NA	Analysis	905		1			598557	01/27/23 18:51	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	LSC_Dist_Susp			100.98 mL	1.0 g	597488	01/19/23 12:02	ZR	EET SL
Total/NA	Analysis	906.0		1			597784	01/20/23 22:05	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	596502	01/11/23 10:39	SRE	EET SL
Dissolved	Prep	ExtChrom			301.77 mL	1.0 mL	597806	01/23/23 13:17	MAL	EET SL
Dissolved	Analysis	A-01-R		1			598401	01/27/23 11:32	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			251.36 mL	1.0 mL	597259	01/17/23 16:09	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598225	01/25/23 14:42	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123009-5
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	02-09-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123009-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123009-1	BGBMP0003_20230104	Water	01/04/23 07:00	01/06/23 18:15

123009

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program | | DW | | NPDES | | RCRA ☐ Other

TestAmerica services ind- oC be performed corr &C thin Blanket er Agreement# 2019-22-TestAmerica b, and between Haley & A dr nc ub ar ff T stAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich Inc.	Tel/Fax: (620) 289-8606	Lab Contact: Virendra Patel (714) 896-6494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☐ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904 E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, CS-137 (E901.0 or E901.1) Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904, E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Trifium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni Pb Se Sb Tl- Method 200.7 B, Zn (Total Dissolved)	Method 200.8 Ag, Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni, Pb, Se Sb, Tl; Method 200.7, B, Zn (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1 250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fi TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fi half of 500mL Bottles that are sized up based on inventory availabi ity only need to be partially filled to meet the volume requirement as stated here
BGSMP0003_20230104	01/04/23	0700	G	WM	21	Y	N		x	x	x	x	x	x	x	x	x	x			x	x	x	x	
TB_			TB	WM	3	N	N															x				
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4; 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6		

570-123009 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard	☐ Flammable	☐ Skin Irritant	☐ Poison B	☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd. ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: SHA	Date/Time: 01/06/23 1800	Received by: EC
Relinquished by:	Company: EC	Date/Time: 1/6/23 1815	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:

Date/Time:	
1/6/23	1300
1/6/23	1815
Date/Time:	

1.8/1.8 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

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2/13/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-203538 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123009-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/8/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903 0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested. I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 1/9/23 1410	Company	Received by:	Date/Time.	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/13/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203575 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123009-3
Address: 5755 8th Street East,	Due Date Requested: 1/24/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1517	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s).	COC No: 570-203580 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123009-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/24/2023			
City: West Sacramento	TAT Requested (days)			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGBMP0003_20230104 (570-123009-1)	1/4/23	07 00 Pacific		Water			X	2	See QAS Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/9/23 1552	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203538.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123009-5
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/8/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Tnzma; Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fil_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20230104 (570-123009-1)	1/4/23	07:00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	1/9/23 1410		FED EX		
2	FED EX			[signature]	JAN 10 2023 0846	EASTL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123009-5

Login Number: 123009
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123009-5

Login Number: 123009
List Number: 2
Creator: Bohlmann, Jessica M

List Source: Eurofins St. Louis
List Creation: 01/10/23 12:51 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	570-123009-T-1 was received with a pH >2 SU.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123671-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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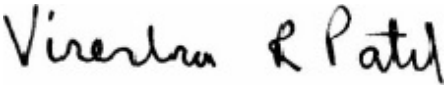
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 2

Authorized for release by
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Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

HPLC/IC

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired
EY	Result exceeds normal dynamic range; reported as a min. est.
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

Job ID: 570-123671-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123671-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 2/7/2023. The report (revision 2) is being revised due to: The EPA 314.0 (Perchlorate) results were updated to correct a reporting error with the final results..

Report revision history
Revision 1 - 3/1/2023 - Reason - The EPA 314.0 (Perchlorate) results were updated to correct a reporting error with the final results..

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

GC/MS VOA
Method 624.1: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: EPBLLC_011023 (570-123671-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-296163 and analytical batch 570-298493 recovered outside control limits for the following analytes: Benzidine. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 625.1 SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 570-296163 and analytical batch 570-298493 recovered outside control limits for the following analytes: Benzidine.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The following samples were received outside of holding time: EPBMC_010923 (570-123671-2) and EPBBC_010923 (570-123671-3).

Method 300.0: Dilutions were performed for the following samples due to sample matrix properties: EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4).

Method 218.6: The following samples were received and analyzed outside of holding time: EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4).

Method 218.6: The following sample were received, filtered and analyzed outside of holding time: EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4).

Method 314.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-296367 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Perchlorate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 314.0: Due to the high concentration of Perchlorate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-296367 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 314.0: Reanalysis of the following sample was performed outside of the analytical holding time due to client/PM request: EPBLLC_011023 (570-123671-1).

Job ID: 570-123671-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 314.0: Sample was re-analyzed out of hold for confirmation on 03/23/2023. The peak was determined to be a non-perchlorate detection at the perchlorate retention time. This original result is being reported due to client/PM request.

EPBLLC_011023 (570-123671-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-295726.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296163 and 570-296163. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 625 Sim

Method 625: The following samples formed emulsions during the extraction procedure: EPBMC_010923 (570-123671-2) and EPBBC_010923 (570-123671-3). The emulsions were broken up using Na2SO4.

Method D4464: The sample duplicate precision for the following sample associated with analytical batch 570-301048 was outside control limits: (570-123671-K-1 DU). The associated Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) precision met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Client Sample ID: EPBLLC_011023

Lab Sample ID: 570-123671-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	4.3	J,DX	4.9	3.5	ug/L	1		625.1 SIM	Total/NA
Hexavalent chromium	0.063	J,DX BU	0.20	0.019	ug/L	1		218.6	Dissolved
Fluoride	0.68		0.20	0.092	mg/L	2		300.0	Total/NA
Nitrite as N	0.73		0.20	0.086	mg/L	2		300.0	Total/NA
Nitrate as N	2.3		0.20	0.039	mg/L	2		300.0	Total/NA
Sulfate - DL	470		10	2.4	mg/L	10		300.0	Total/NA
Perchlorate	58		2.0	0.91	ug/L	1		314.0	Total/NA
Boron	1100		500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	1100	BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	5.9		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	180		1.0	0.17	ug/L	1		200.8	Total Recoverable
Beryllium	0.75		0.50	0.26	ug/L	1		200.8	Total Recoverable
Cadmium	2.7		1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	20		2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	35		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	20000		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	640		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	41		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	11		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	0.85	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Selenium	19		2.0	0.52	ug/L	1		200.8	Total Recoverable
Thallium	0.24	J,DX	1.0	0.11	ug/L	1		200.8	Total Recoverable
Zinc	75		20	2.8	ug/L	1		200.8	Total Recoverable
Arsenic	1.4	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	38	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.38	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	3.9	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	19	J,DX BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	5.5	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	8.3	BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	0.62	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	20	BU	2.0	0.52	ug/L	1		200.8	Dissolved
Cr (III)	0.020	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Total Suspended Solids	1500		10	8.3	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	27.84		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	71.41		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	99.25		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	0.75		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Client Sample ID: EPBMC_010923 — Lab Sample ID: 570-123671-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	5.4		5.0	3.6	ug/L	1		625.1 SIM	Total/NA
Hexavalent chromium	1.1	BU BV	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	1.1	BU BV	0.20	0.019	ug/L	1		218.6	Dissolved
Fluoride	0.21		0.20	0.092	mg/L	2		300.0	Total/NA
Nitrite as N	0.40	BU BV	0.20	0.086	mg/L	2		300.0	Total/NA
Nitrate as N	0.68	BU BV	0.20	0.039	mg/L	2		300.0	Total/NA
Sulfate	39		2.0	0.47	mg/L	2		300.0	Total/NA
Mercury	0.0061		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0036		0.00050	0.000079	ug/L	1		1631E	Dissolved
Boron	110	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	100	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	1.0		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	15		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	1.5	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	6.0		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	240		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	15		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	0.96	J,DX	2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	0.33	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	0.42	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Zinc	21		20	2.8	ug/L	1		200.8	Total Recoverable
Arsenic	0.93	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	13	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	1.2	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	3.9	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	43	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	2.7	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	0.69	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Zinc	15	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved
Total Suspended Solids	6.6		1.0	0.83	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	5.39		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	22.36		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	39.02		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	44.41		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	33.24		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EPBBC_010923 — Lab Sample ID: 570-123671-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.23	BU BV	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.21	BU BV	0.20	0.019	ug/L	1		218.6	Dissolved
Fluoride	0.30		0.20	0.092	mg/L	2		300.0	Total/NA
Nitrate as N	1.1	BU BV	0.20	0.039	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPBBC_010923 (Continued)

Lab Sample ID: 570-123671-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	52		2.0	0.47	mg/L	2		300.0	Total/NA
Mercury	0.019		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0067		0.00050	0.000079	ug/L	1		1631E	Dissolved
Boron	160	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	160	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	2.2		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	51		1.0	0.17	ug/L	1		200.8	Total Recoverable
Cadmium	0.17	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	4.9		2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	7.8		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	3400		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	120		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	5.4		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	5.8		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	0.49	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Zinc	28		20	2.8	ug/L	1		200.8	Total Recoverable
Arsenic	1.4	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	20	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.57	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	3.3	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	86	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	1.9	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.4	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Lead	0.13	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Antimony	0.44	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Zinc	4.1	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved
Cr (III)	0.0047	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Total Suspended Solids	130		2.5	2.1	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	14.73		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	7.45		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	62.36		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	77.10		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	15.45		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EPBMC_011023

Lab Sample ID: 570-123671-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	4.9		4.8	3.4	ug/L	1		625.1 SIM	Total/NA
Hexavalent chromium	0.077	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.099	J,DX BU	0.20	0.019	ug/L	1		218.6	Dissolved
Fluoride	0.30	J,DX	0.50	0.23	mg/L	5		300.0	Total/NA
Nitrate as N	2.3		0.50	0.098	mg/L	5		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPBMC_011023 (Continued)

Lab Sample ID: 570-123671-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	58		5.0	1.2	mg/L	5		300.0	Total/NA
Mercury	0.13		0.0050	0.00079	ug/L	10		1631E	Total/NA
Mercury	0.013		0.00050	0.000079	ug/L	1		1631E	Dissolved
Boron	120	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	110	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	3.0		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	260		1.0	0.17	ug/L	1		200.8	Total Recoverable
Beryllium	1.3		0.50	0.26	ug/L	1		200.8	Total Recoverable
Cadmium	0.50	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	13		2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	26		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	12000		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	910		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	17		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	19		1.0	0.12	ug/L	1		200.8	Total Recoverable
Selenium	3.1		2.0	0.52	ug/L	1		200.8	Total Recoverable
Thallium	0.13	J,DX	1.0	0.11	ug/L	1		200.8	Total Recoverable
Zinc	120		20	2.8	ug/L	1		200.8	Total Recoverable
Arsenic	1.0	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	20	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.47	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	2.3	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	140	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	5.0	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	2.0	BU	2.0	0.17	ug/L	1		200.8	Dissolved
Selenium	1.8	J,DX BU	2.0	0.52	ug/L	1		200.8	Dissolved
Cr (III)	0.013	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Total Suspended Solids	1100		20	17	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	32.38		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	1.87		0.01	0.01	%	1		D4464	Total/NA
Medium Sand (0.25 to 0.5 mm)	0.12		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	62.11		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	94.48		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	3.53		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		2.0	0.82	ug/L			01/12/23 19:05	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*00*		*56 - 146*		*61/12/29 103 6:*	*2*
4-Bromofluorobenzene (Surr)	*08*		*56 - 146*		*61/12/29 103 6:*	*2*
Dibromofluoromethane	*166*		*56 - 146*		*61/12/29 103 6:*	*2*
7oluene-d8 (Surr)	*166*		*56 - 146*		*61/12/29 103 6:*	*2*

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/12/23 18:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*08*		*56 - 146*		*61/12/29 183 21*	*1*
4-Bromofluorobenzene (Surr)	*08*		*56 - 146*		*61/12/29 183 21*	*1*
Dibromofluoromethane	*00*		*56 - 146*		*61/12/29 183 21*	*1*
7oluene-d8 (Surr)	*00*		*56 - 146*		*61/12/29 183 21*	*1*

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/12/23 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*00*		*56 - 146*		*61/12/29 1T3 9T*	*1*
4-Bromofluorobenzene (Surr)	*0T*		*56 - 146*		*61/12/29 1T3 9T*	*1*
Dibromofluoromethane	*00*		*56 - 146*		*61/12/29 1T3 9T*	*1*
7oluene-d8 (Surr)	*00*		*56 - 146*		*61/12/29 1T3 9T*	*1*

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/12/23 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*00*		*56 - 146*		*61/12/29 1T3 0*	*1*
4-Bromofluorobenzene (Surr)	*08*		*56 - 146*		*61/12/29 1T3 0*	*1*
Dibromofluoromethane	*166*		*56 - 146*		*61/12/29 1T3 0*	*1*
7oluene-d8 (Surr)	*166*		*56 - 146*		*61/12/29 1T3 0*	*1*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**4.3**	**J,DX**	4.9	3.5	ug/L		01/17/23 05:12	01/17/23 19:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,5-7ribromophenol (Surr)	*81*		*28 - 12T*	*61/1T/29 6: 312*	*61/1T/29 1039 8*	*1*
2-Fluorobiphenyl (Surr)	*: 8*		*91 - 126*	*61/1T/29 6: 312*	*61/1T/29 1039 8*	*1*
2-Fluorophenol (Surr)	*91*		*1T - 126*	*61/1T/29 6: 312*	*61/1T/29 1039 8*	*1*
Nitrobenzene-d: (Surr)	*56*		*2T - 126*	*61/1T/29 6: 312*	*61/1T/29 1039 8*	*1*
Phenol-d5 (Surr)	*21*		*16 - 126*	*61/1T/29 6: 312*	*61/1T/29 1039 8*	*1*
p-7erphenyl-d14 (Surr)	*TT*		*4: - 126*	*61/1T/29 6: 312*	*61/1T/29 1039 8*	*1*

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**5.4**		5.0	3.6	ug/L		01/16/23 13:07	01/17/23 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,5-7ribromophenol (Surr)	*16:*		*28 - 12T*	*61/15/29 1936T*	*61/1T/29 1T3 9*	*1*
2-Fluorobiphenyl (Surr)	*T0*		*91 - 126*	*61/15/29 1936T*	*61/1T/29 1T3 9*	*1*
2-Fluorophenol (Surr)	*95*		*1T - 126*	*61/15/29 1936T*	*61/1T/29 1T3 9*	*1*
Nitrobenzene-d: (Surr)	*88*		*2T - 126*	*61/15/29 1936T*	*61/1T/29 1T3 9*	*1*
Phenol-d5 (Surr)	*22*		*16 - 126*	*61/15/29 1936T*	*61/1T/29 1T3 9*	*1*
p-7erphenyl-d14 (Surr)	*04*		*4: - 126*	*61/15/29 1936T*	*61/1T/29 1T3 9*	*1*

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		4.9	3.5	ug/L		01/16/23 13:07	01/17/23 18:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,5-7ribromophenol (Surr)	*09*		*28 - 12T*	*61/15/29 1936T*	*61/1T/29 1831 4*	*1*
2-Fluorobiphenyl (Surr)	*T9*		*91 - 126*	*61/15/29 1936T*	*61/1T/29 1831 4*	*1*
2-Fluorophenol (Surr)	*90*		*1T - 126*	*61/15/29 1936T*	*61/1T/29 1831 4*	*1*
Nitrobenzene-d: (Surr)	*8:*		*2T - 126*	*61/15/29 1936T*	*61/1T/29 1831 4*	*1*
Phenol-d5 (Surr)	*24*		*16 - 126*	*61/15/29 1936T*	*61/1T/29 1831 4*	*1*
p-7erphenyl-d14 (Surr)	*84*		*4: - 126*	*61/15/29 1936T*	*61/1T/29 1831 4*	*1*

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**4.9**		4.8	3.4	ug/L		01/17/23 05:12	01/25/23 14:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,5-7ribromophenol (Surr)	*09*		*28 - 12T*	*61/1T/29 6: 312*	*61/2: /29 1439 2*	*1*
2-Fluorobiphenyl (Surr)	*: 4*		*91 - 126*	*61/1T/29 6: 312*	*61/2: /29 1439 2*	*1*
2-Fluorophenol (Surr)	*24*		*1T - 126*	*61/1T/29 6: 312*	*61/2: /29 1439 2*	*1*
Nitrobenzene-d: (Surr)	*5:*		*2T - 126*	*61/1T/29 6: 312*	*61/2: /29 1439 2*	*1*
Phenol-d5 (Surr)	*1T*		*16 - 126*	*61/1T/29 6: 312*	*61/2: /29 1439 2*	*1*
p-7erphenyl-d14 (Surr)	*T2*		*4: - 126*	*61/1T/29 6: 312*	*61/2: /29 1439 2*	*1*

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			01/12/23 17:44	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	**1.1**	**BU BV**	0.20	0.019	ug/L			01/12/23 17:54	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	**0.23**	**BU BV**	0.20	0.019	ug/L			01/12/23 18:04	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	**0.077**	**J,DX BU BV**	0.20	0.019	ug/L			01/12/23 18:14	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.063	J,DX BU	0.20	0.019	ug/L			01/12/23 19:33	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	1.1	BU BV	0.20	0.019	ug/L			01/12/23 19:43	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.21	BU BV	0.20	0.019	ug/L			01/12/23 19:53	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.099	J,DX BU	0.20	0.019	ug/L			01/12/23 20:03	1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.68**		0.20	0.092	mg/L			01/12/23 02:09	2
Nitrite as N	**0.73**		0.20	0.086	mg/L			01/12/23 02:09	2
Nitrate as N	**2.3**		0.20	0.039	mg/L			01/12/23 02:09	2

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.21**		0.20	0.092	mg/L			01/12/23 02:43	2
Nitrite as N	**0.40**	**BU BV**	0.20	0.086	mg/L			01/12/23 02:43	2
Nitrate as N	**0.68**	**BU BV**	0.20	0.039	mg/L			01/12/23 02:43	2
Sulfate	**39**		2.0	0.47	mg/L			01/12/23 02:43	2

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.30**		0.20	0.092	mg/L			01/12/23 03:33	2
Nitrite as N	ND	BU BV	0.20	0.086	mg/L			01/12/23 03:33	2
Nitrate as N	**1.1**	**BU BV**	0.20	0.039	mg/L			01/12/23 03:33	2
Sulfate	**52**		2.0	0.47	mg/L			01/12/23 03:33	2

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.30**	**J,DX**	0.50	0.23	mg/L			01/12/23 03:50	5
Nitrite as N	ND		0.50	0.22	mg/L			01/12/23 03:50	5
Nitrate as N	**2.3**		0.50	0.098	mg/L			01/12/23 03:50	5
Sulfate	**58**		5.0	1.2	mg/L			01/12/23 03:50	5

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Method: EPA 300.0 - Anions, Ion Chromatography - DL

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	470		10	2.4	mg/L			01/12/23 02:26	10

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**58**		2.0	0.91	ug/L			01/17/23 19:12	1
Perchlorate	ND	BU	2.0	0.91	ug/L			03/23/23 22:57	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/17/23 19:33	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/17/23 19:54	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/17/23 20:15	1

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0061		0.00050	0.000079	ug/L			01/16/23 12:50	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.019		0.00050	0.000079	ug/L			01/16/23 16:34	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.13		0.0050	0.00079	ug/L			01/16/23 14:42	10

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0036		0.00050	0.000079	ug/L			01/16/23 16:43	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0067		0.00050	0.000079	ug/L			01/16/23 16:47	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.013		0.00050	0.000079	ug/L			01/16/23 16:52	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100		500	3.5	ug/L		01/16/23 07:05	01/16/23 16:20	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	110	J,DX	500	3.5	ug/L		01/16/23 07:05	01/16/23 16:27	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	160	J,DX	500	3.5	ug/L		01/16/23 07:05	01/16/23 16:30	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	120	J,DX	500	3.5	ug/L		01/16/23 07:05	01/16/23 16:32	1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100	BU	500	3.5	ug/L			01/14/23 03:01	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	100	J,DX BU	500	3.5	ug/L			01/14/23 03:04	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	160	J,DX BU	500	3.5	ug/L			01/14/23 03:06	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	110	J,DX BU	500	3.5	ug/L			01/14/23 03:09	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/16/23 07:29	01/16/23 13:12	1
Arsenic	**5.9**		1.0	0.16	ug/L		01/16/23 07:29	01/16/23 13:12	1
Barium	**180**		1.0	0.17	ug/L		01/16/23 07:29	01/16/23 13:12	1
Beryllium	**0.75**		0.50	0.26	ug/L		01/16/23 07:29	01/16/23 13:12	1
Cadmium	**2.7**		1.0	0.13	ug/L		01/16/23 07:29	01/16/23 13:12	1
Chromium	**20**		2.0	0.14	ug/L		01/16/23 07:29	01/16/23 13:12	1
Copper	**35**		2.0	0.32	ug/L		01/16/23 07:29	01/16/23 13:12	1
Iron	**20000**		20	3.7	ug/L		01/16/23 07:29	01/16/23 13:12	1
Manganese	**640**		1.0	0.41	ug/L		01/16/23 07:29	01/16/23 13:12	1
Nickel	**41**		2.0	0.17	ug/L		01/16/23 07:29	01/16/23 13:12	1
Lead	**11**		1.0	0.12	ug/L		01/16/23 07:29	01/16/23 13:12	1
Antimony	**0.85**	**J,DX**	2.0	0.36	ug/L		01/16/23 07:29	01/16/23 13:12	1
Selenium	**19**		2.0	0.52	ug/L		01/16/23 07:29	01/16/23 13:12	1
Thallium	**0.24**	**J,DX**	1.0	0.11	ug/L		01/16/23 07:29	01/16/23 13:12	1
Zinc	**75**		20	2.8	ug/L		01/16/23 07:29	01/16/23 13:12	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/16/23 07:29	01/16/23 13:14	1
Arsenic	**1.0**		1.0	0.16	ug/L		01/16/23 07:29	01/16/23 13:14	1
Barium	**15**		1.0	0.17	ug/L		01/16/23 07:29	01/16/23 13:14	1
Beryllium	ND		0.50	0.26	ug/L		01/16/23 07:29	01/16/23 13:14	1
Cadmium	ND		1.0	0.13	ug/L		01/16/23 07:29	01/16/23 13:14	1
Chromium	**1.5**	**J,DX**	2.0	0.14	ug/L		01/16/23 07:29	01/16/23 13:14	1
Copper	**6.0**		2.0	0.32	ug/L		01/16/23 07:29	01/16/23 13:14	1
Iron	**240**		20	3.7	ug/L		01/16/23 07:29	01/16/23 13:14	1
Manganese	**15**		1.0	0.41	ug/L		01/16/23 07:29	01/16/23 13:14	1
Nickel	**0.96**	**J,DX**	2.0	0.17	ug/L		01/16/23 07:29	01/16/23 13:14	1
Lead	**0.33**	**J,DX**	1.0	0.12	ug/L		01/16/23 07:29	01/16/23 13:14	1
Antimony	**0.42**	**J,DX**	2.0	0.36	ug/L		01/16/23 07:29	01/16/23 13:14	1
Selenium	ND		2.0	0.52	ug/L		01/16/23 07:29	01/16/23 13:14	1
Thallium	ND		1.0	0.11	ug/L		01/16/23 07:29	01/16/23 13:14	1
Zinc	**21**		20	2.8	ug/L		01/16/23 07:29	01/16/23 13:14	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/16/23 07:29	01/16/23 13:17	1
Arsenic	**2.2**		1.0	0.16	ug/L		01/16/23 07:29	01/16/23 13:17	1
Barium	**51**		1.0	0.17	ug/L		01/16/23 07:29	01/16/23 13:17	1
Beryllium	ND		0.50	0.26	ug/L		01/16/23 07:29	01/16/23 13:17	1
Cadmium	**0.17**	**J,DX**	1.0	0.13	ug/L		01/16/23 07:29	01/16/23 13:17	1
Chromium	**4.9**		2.0	0.14	ug/L		01/16/23 07:29	01/16/23 13:17	1
Copper	**7.8**		2.0	0.32	ug/L		01/16/23 07:29	01/16/23 13:17	1
Iron	**3400**		20	3.7	ug/L		01/16/23 07:29	01/16/23 13:17	1
Manganese	**120**		1.0	0.41	ug/L		01/16/23 07:29	01/16/23 13:17	1
Nickel	**5.4**		2.0	0.17	ug/L		01/16/23 07:29	01/16/23 13:17	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**5.8**		1.0	0.12	ug/L		01/16/23 07:29	01/16/23 13:17	1
Antimony	**0.49**	**J,DX**	2.0	0.36	ug/L		01/16/23 07:29	01/16/23 13:17	1
Selenium	ND		2.0	0.52	ug/L		01/16/23 07:29	01/16/23 13:17	1
Thallium	ND		1.0	0.11	ug/L		01/16/23 07:29	01/16/23 13:17	1
Zinc	**28**		20	2.8	ug/L		01/16/23 07:29	01/16/23 13:17	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/16/23 07:29	01/16/23 13:19	1
Arsenic	**3.0**		1.0	0.16	ug/L		01/16/23 07:29	01/16/23 13:19	1
Barium	**260**		1.0	0.17	ug/L		01/16/23 07:29	01/16/23 13:19	1
Beryllium	**1.3**		0.50	0.26	ug/L		01/16/23 07:29	01/16/23 13:19	1
Cadmium	**0.50**	**J,DX**	1.0	0.13	ug/L		01/16/23 07:29	01/16/23 13:19	1
Chromium	**13**		2.0	0.14	ug/L		01/16/23 07:29	01/16/23 13:19	1
Copper	**26**		2.0	0.32	ug/L		01/16/23 07:29	01/16/23 13:19	1
Iron	**12000**		20	3.7	ug/L		01/16/23 07:29	01/16/23 13:19	1
Manganese	**910**		1.0	0.41	ug/L		01/16/23 07:29	01/16/23 13:19	1
Nickel	**17**		2.0	0.17	ug/L		01/16/23 07:29	01/16/23 13:19	1
Lead	**19**		1.0	0.12	ug/L		01/16/23 07:29	01/16/23 13:19	1
Antimony	ND		2.0	0.36	ug/L		01/16/23 07:29	01/16/23 13:19	1
Selenium	**3.1**		2.0	0.52	ug/L		01/16/23 07:29	01/16/23 13:19	1
Thallium	**0.13**	**J,DX**	1.0	0.11	ug/L		01/16/23 07:29	01/16/23 13:19	1
Zinc	**120**		20	2.8	ug/L		01/16/23 07:29	01/16/23 13:19	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/16/23 09:27	1
Arsenic	**1.4**	**BU**	1.0	0.16	ug/L			01/16/23 09:27	1
Barium	**38**	**BU**	1.0	0.17	ug/L			01/16/23 09:27	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/16/23 09:27	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/16/23 09:27	1
Chromium	**0.38**	**J,DX BU**	2.0	0.14	ug/L			01/16/23 09:27	1
Copper	**3.9**	**BU**	2.0	0.32	ug/L			01/16/23 09:27	1
Iron	**19**	**J,DX BU**	20	3.7	ug/L			01/16/23 09:27	1
Manganese	**5.5**	**BU**	1.0	0.41	ug/L			01/16/23 09:27	1
Nickel	**8.3**	**BU**	2.0	0.17	ug/L			01/16/23 09:27	1
Lead	ND	BU	1.0	0.12	ug/L			01/16/23 09:27	1
Antimony	**0.62**	**J,DX BU**	2.0	0.36	ug/L			01/16/23 09:27	1
Selenium	**20**	**BU**	2.0	0.52	ug/L			01/16/23 09:27	1
Thallium	ND	BU	1.0	0.11	ug/L			01/16/23 09:27	1
Zinc	ND	BU	20	2.8	ug/L			01/16/23 09:27	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/16/23 09:29	1
Arsenic	**0.93**	**J,DX BU**	1.0	0.16	ug/L			01/16/23 09:29	1
Barium	**13**	**BU**	1.0	0.17	ug/L			01/16/23 09:29	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/16/23 09:29	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/16/23 09:29	1
Chromium	**1.2**	**J,DX BU**	2.0	0.14	ug/L			01/16/23 09:29	1
Copper	**3.9**	**BU**	2.0	0.32	ug/L			01/16/23 09:29	1
Iron	**43**	**BU**	20	3.7	ug/L			01/16/23 09:29	1
Manganese	**2.7**	**BU**	1.0	0.41	ug/L			01/16/23 09:29	1
Nickel	**0.69**	**J,DX BU**	2.0	0.17	ug/L			01/16/23 09:29	1
Lead	ND	BU	1.0	0.12	ug/L			01/16/23 09:29	1
Antimony	ND	BU	2.0	0.36	ug/L			01/16/23 09:29	1
Selenium	ND	BU	2.0	0.52	ug/L			01/16/23 09:29	1
Thallium	ND	BU	1.0	0.11	ug/L			01/16/23 09:29	1
Zinc	**15**	**J,DX BU**	20	2.8	ug/L			01/16/23 09:29	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/16/23 09:32	1
Arsenic	**1.4**	**BU**	1.0	0.16	ug/L			01/16/23 09:32	1
Barium	**20**	**BU**	1.0	0.17	ug/L			01/16/23 09:32	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/16/23 09:32	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/16/23 09:32	1
Chromium	**0.57**	**J,DX BU**	2.0	0.14	ug/L			01/16/23 09:32	1
Copper	**3.3**	**BU**	2.0	0.32	ug/L			01/16/23 09:32	1
Iron	**86**	**BU**	20	3.7	ug/L			01/16/23 09:32	1
Manganese	**1.9**	**BU**	1.0	0.41	ug/L			01/16/23 09:32	1
Nickel	**1.4**	**J,DX BU**	2.0	0.17	ug/L			01/16/23 09:32	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	**0.13**	**J,DX BU**	1.0	0.12	ug/L			01/16/23 09:32	1
Antimony	**0.44**	**J,DX BU**	2.0	0.36	ug/L			01/16/23 09:32	1
Selenium	ND	BU	2.0	0.52	ug/L			01/16/23 09:32	1
Thallium	ND	BU	1.0	0.11	ug/L			01/16/23 09:32	1
Zinc	**4.1**	**J,DX BU**	20	2.8	ug/L			01/16/23 09:32	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/16/23 09:34	1
Arsenic	**1.0**	**BU**	1.0	0.16	ug/L			01/16/23 09:34	1
Barium	**20**	**BU**	1.0	0.17	ug/L			01/16/23 09:34	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/16/23 09:34	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/16/23 09:34	1
Chromium	**0.47**	**J,DX BU**	2.0	0.14	ug/L			01/16/23 09:34	1
Copper	**2.3**	**BU**	2.0	0.32	ug/L			01/16/23 09:34	1
Iron	**140**	**BU**	20	3.7	ug/L			01/16/23 09:34	1
Manganese	**5.0**	**BU**	1.0	0.41	ug/L			01/16/23 09:34	1
Nickel	**2.0**	**BU**	2.0	0.17	ug/L			01/16/23 09:34	1
Lead	ND	BU	1.0	0.12	ug/L			01/16/23 09:34	1
Antimony	ND	BU	2.0	0.36	ug/L			01/16/23 09:34	1
Selenium	**1.8**	**J,DX BU**	2.0	0.52	ug/L			01/16/23 09:34	1
Thallium	ND	BU	1.0	0.11	ug/L			01/16/23 09:34	1
Zinc	ND	BU	20	2.8	ug/L			01/16/23 09:34	1

General Chemistry

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	**0.020**	**J,DX**	0.050	0.0030	mg/L			01/17/23 17:49	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/13/23 15:06	1
Total Suspended Solids (SM 2540D)	**1500**		10	8.3	mg/L			01/16/23 12:43	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			01/20/23 17:27	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/13/23 14:45	1
Total Suspended Solids (SM 2540D)	**6.6**		1.0	0.83	mg/L			01/12/23 15:13	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	**0.0047**	**J,DX**	0.050	0.0030	mg/L			01/20/23 17:27	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/13/23 14:52	1
Total Suspended Solids (SM 2540D)	**130**		2.5	2.1	mg/L			01/12/23 14:50	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	**0.013**	**J,DX**	0.050	0.0030	mg/L			01/20/23 17:27	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/13/23 14:59	1
Total Suspended Solids (SM 2540D)	**1100**		20	17	mg/L			01/16/23 12:43	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**27.84**		0.01	0.01	%			02/02/23 20:37	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 20:37	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/02/23 20:37	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 20:37	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/02/23 20:37	1
Silt (0.00391 to 0.0625mm)	**71.41**		0.01	0.01	%			02/02/23 20:37	1
Total Silt and Clay (0 to 0.0626mm)	**99.25**		0.01	0.01	%			02/02/23 20:37	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 20:37	1
Very Fine Sand (0.0625 to 0.125 mm)	**0.75**		0.01	0.01	%			02/02/23 20:37	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**5.39**		0.01	0.01	%			01/23/23 12:19	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/23/23 12:19	1
Fine Sand (0.125 to 0.25mm)	**22.36**		0.01	0.01	%			01/23/23 12:19	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/23/23 12:19	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/23/23 12:19	1
Silt (0.00391 to 0.0625mm)	**39.02**		0.01	0.01	%			01/23/23 12:19	1
Total Silt and Clay (0 to 0.0626mm)	**44.41**		0.01	0.01	%			01/23/23 12:19	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/23/23 12:19	1
Very Fine Sand (0.0625 to 0.125 mm)	**33.24**		0.01	0.01	%			01/23/23 12:19	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**14.73**		0.01	0.01	%			01/23/23 12:33	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/23/23 12:33	1
Fine Sand (0.125 to 0.25mm)	**7.45**		0.01	0.01	%			01/23/23 12:33	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/23/23 12:33	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			01/23/23 12:33	1
Silt (0.00391 to 0.0625mm)	**62.36**		0.01	0.01	%			01/23/23 12:33	1
Total Silt and Clay (0 to 0.0626mm)	**77.10**		0.01	0.01	%			01/23/23 12:33	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/23/23 12:33	1
Very Fine Sand (0.0625 to 0.125 mm)	**15.45**		0.01	0.01	%			01/23/23 12:33	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10
Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**32.38**		0.01	0.01	%			01/23/23 12:42	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			01/23/23 12:42	1
Fine Sand (0.125 to 0.25mm)	**1.87**		0.01	0.01	%			01/23/23 12:42	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			01/23/23 12:42	1
Medium Sand (0.25 to 0.5 mm)	**0.12**		0.01	0.01	%			01/23/23 12:42	1
Silt (0.00391 to 0.0625mm)	**62.11**		0.01	0.01	%			01/23/23 12:42	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Silt and Clay (0 to 0.0626mm)	**94.48**		0.01	0.01	%			01/23/23 12:42	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			01/23/23 12:42	1
Very Fine Sand (0.0625 to 0.125 mm)	**3.53**		0.01	0.01	%			01/23/23 12:42	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

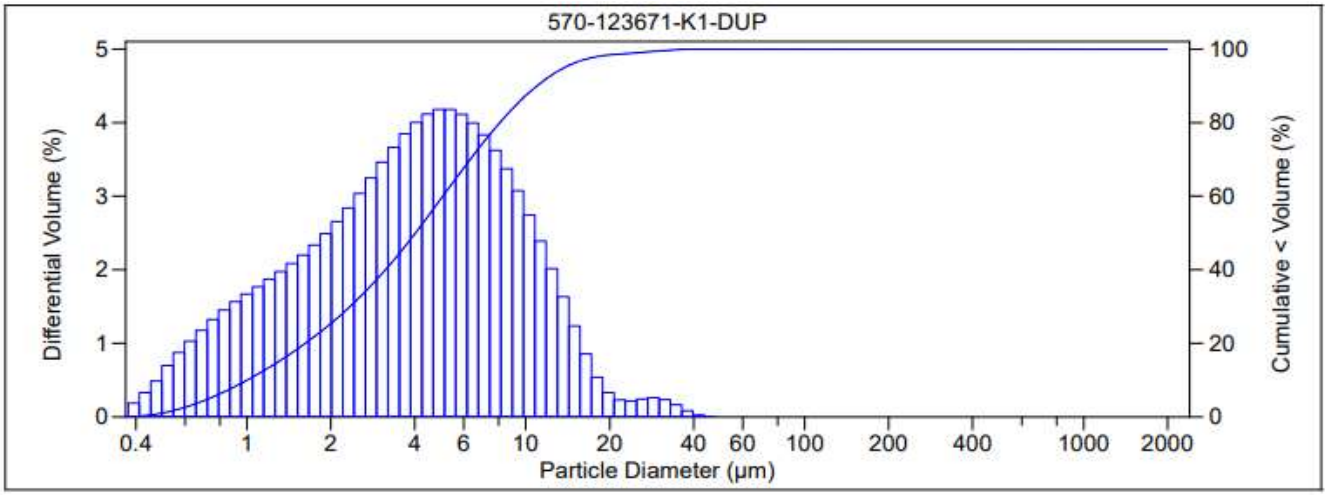
Haley & Aldrich, Inc.

Date Sampled:	01/10/23
Date Received:	01/11/23
Work Order No:	570-123671
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBLLC_011023		Silt	0.005

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	51.21	48.79	100.00



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

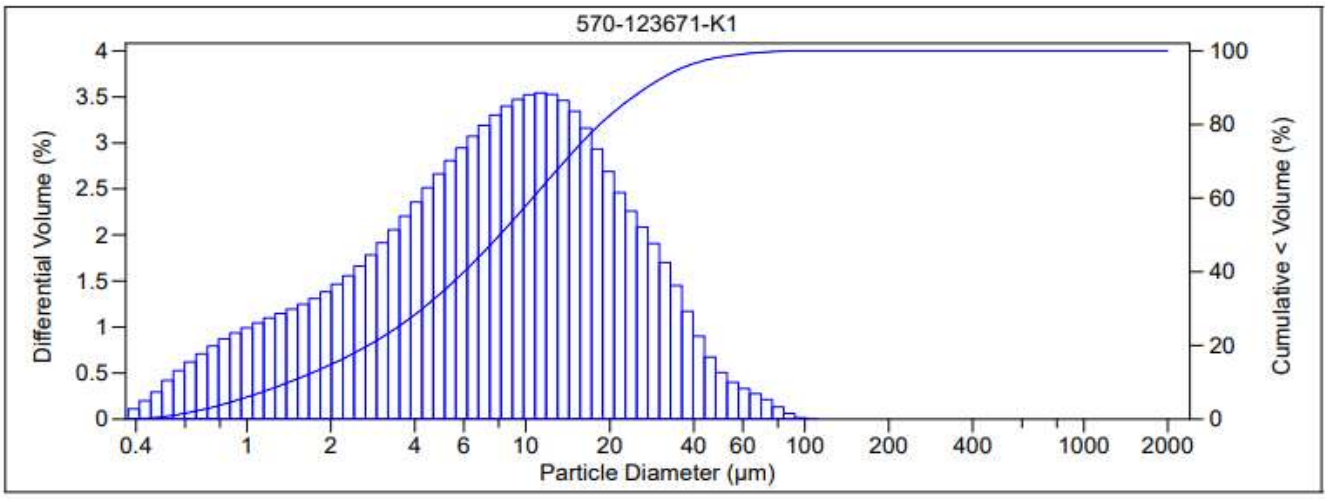
Haley & Aldrich, Inc.

Date Sampled:	01/10/23
Date Received:	01/11/23
Work Order No:	570-123671
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBLLC_011023		Silt	0.012

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.75	71.41	27.84	99.25



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

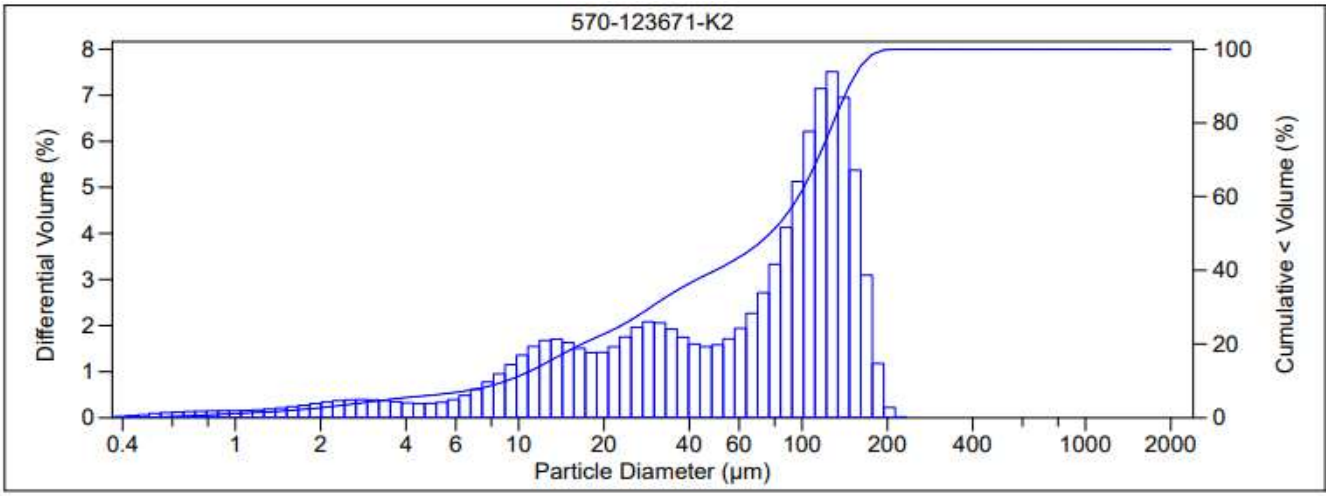
Haley & Aldrich, Inc.

Date Sampled:	01/09/23
Date Received:	01/11/23
Work Order No:	570-123671
Date Analyzed:	01/23/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBMC_011023		Very Fine Sand	0.076

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	22.36	33.24	39.02	5.39	44.41



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

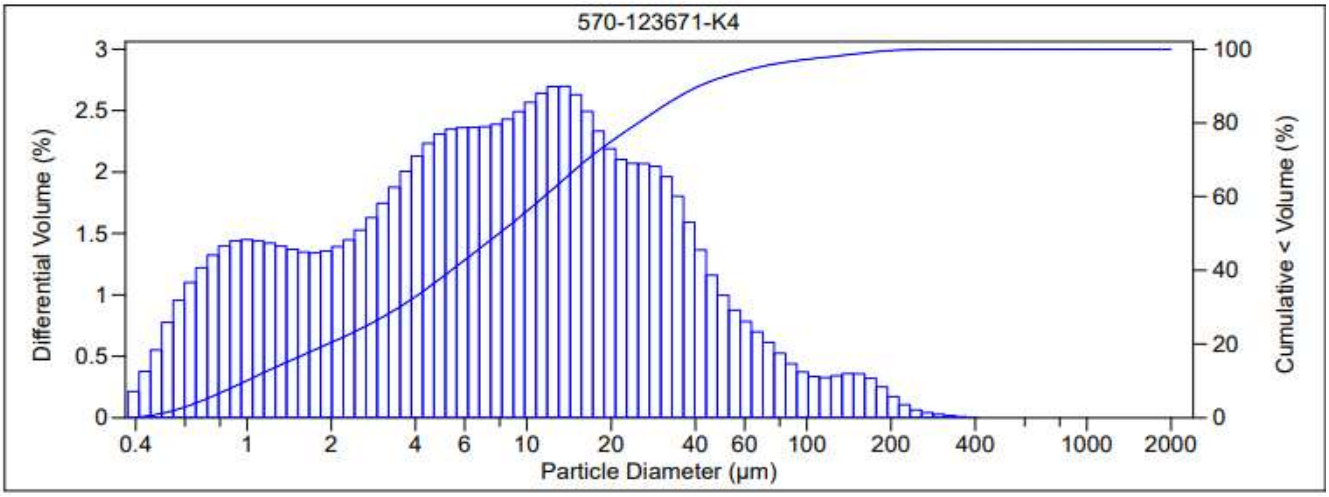
Haley & Aldrich, Inc.

Date Sampled:	01/10/23
Date Received:	01/11/23
Work Order No:	570-123671
Date Analyzed:	01/23/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBMC_011023		Silt	0.018

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.12	1.87	3.53	62.11	32.38	94.48



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

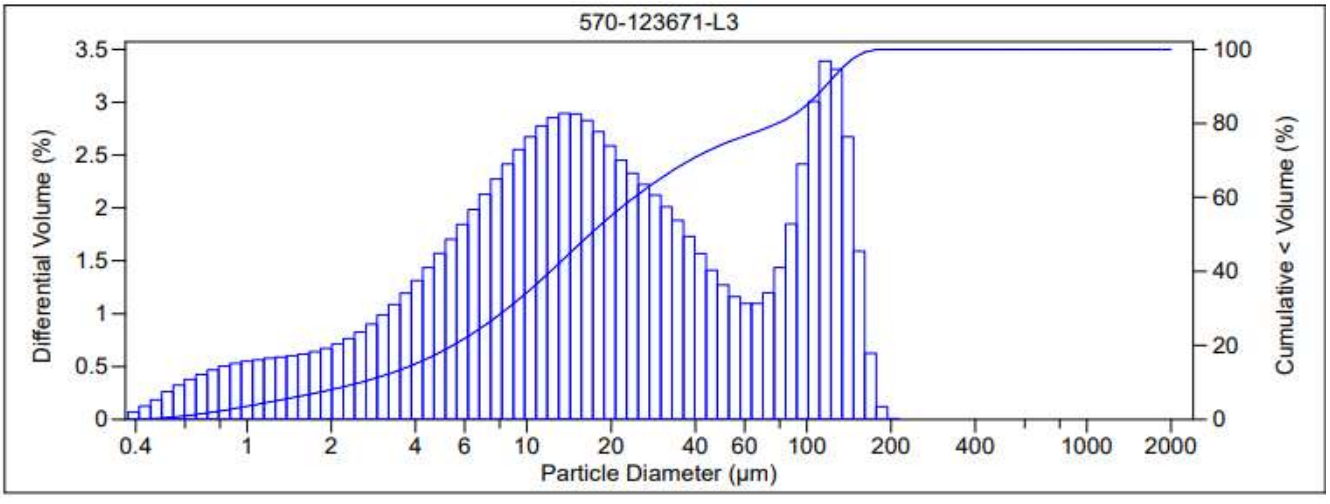
Haley & Aldrich, Inc.

Date Sampled:	01/09/23
Date Received:	01/11/23
Work Order No:	570-123671
Date Analyzed:	01/23/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_011023		Silt	0.038

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	7.45	15.45	62.36	14.73	77.10



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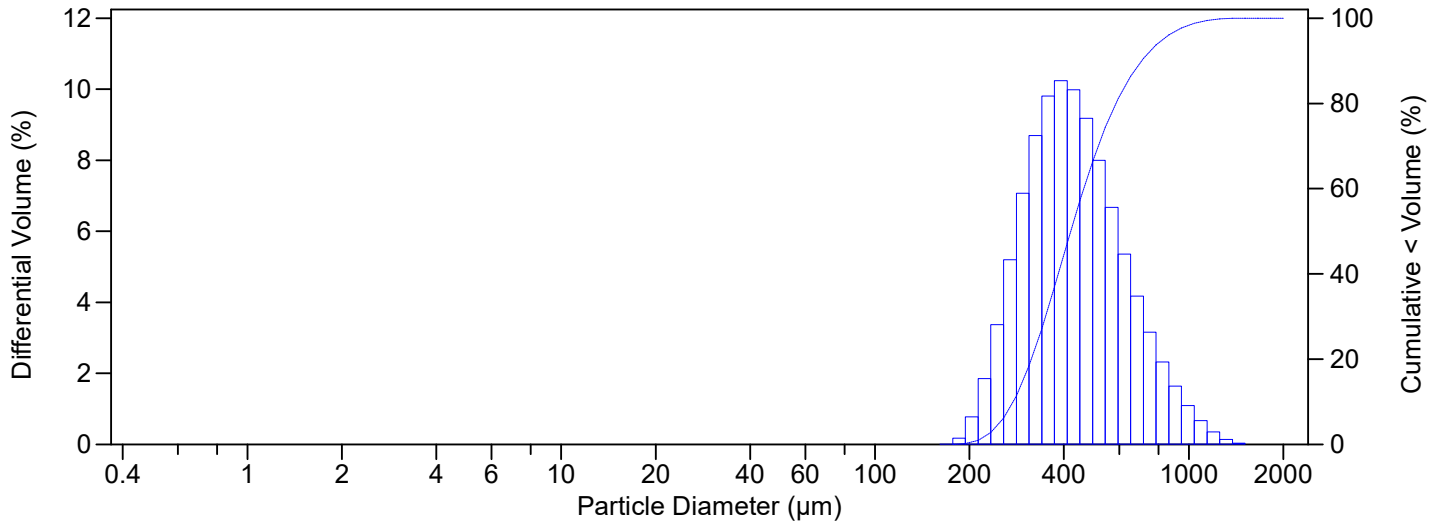
	STD SAND_ 2 Feb 2023_20.55.25.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	SP9M		
Run number:	16		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.68%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:54 2 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	8%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 2 Feb 2023_20.55.25.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	462.3 µm	S.D.:	181.7 µm
Median:	420.8 µm	Variance:	33001 µm^2
Mean/Median ratio:	1.099	Skewness:	1.360 Right skewed
Mode:	391.0 µm	Kurtosis:	2.335 Leptokurtic

d_{10}: 275.4 µm d_{50}: 420.8 µm d_{90}: 708.0 µm

Folk and Ward Statistics (Phi)

Mean:	1.22	Median:	1.25	Deviation:	0.53
Skewness:	-0.10	Kurtosis:	0.99		

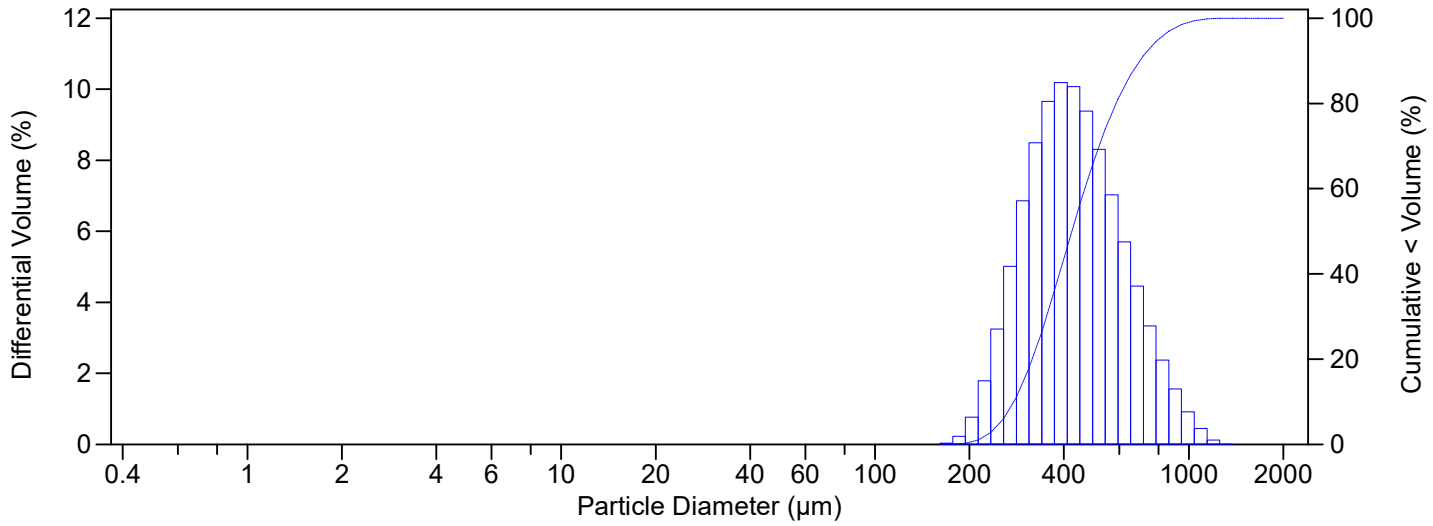
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
248.9 µm	300.0 µm	332.4 µm	384.0 µm	420.8 µm	546.9 µm	626.9 µm	828.9 µm

Particle Diameter µm	STD SAND_ 2 Feb 2023 _20.55.25 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	5.17
250	62.3
500	30.9
1000	1.69
2000	

STD SAND_ 2 Feb 2023_20.55.25.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.36
0.412	0	22.73	0	1255	0.14
0.452	0	24.95	0	1377	0.033
0.496	0	27.39	0	1512	0.0020
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.010		
3.206	0	176.9	0.18		
3.519	0	194.2	0.78		
3.863	0	213.2	1.85		
4.241	0	234.1	3.37		
4.656	0	256.9	5.20		
5.111	0	282.1	7.08		
5.611	0	309.6	8.70		
6.159	0	339.9	9.80		
6.761	0	373.1	10.2		
7.422	0	409.6	9.99		
8.148	0	449.7	9.18		
8.944	0	493.6	8.00		
9.819	0	541.9	6.67		
10.78	0	594.9	5.36		
11.83	0	653.0	4.17		
12.99	0	716.9	3.16		
14.26	0	786.9	2.32		
15.65	0	863.9	1.64		
17.18	0	948.3	1.10		
18.86	0	1041	0.67		

File name:	C:\LS13320\STD SAND_ 2 Feb 2023_21.29.21.$ls		
	STD SAND_ 2 Feb 2023_21.29.21.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	SP9M		
Run number:	18		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.91%		
LS 13 320	Aqueous Liquid Module		
Start time:	21:28 2 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	8%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 2 Feb 2023_21.29.21.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	460.3 µm	S.D.:	170.7 µm
Median:	424.4 µm	Variance:	29150 µm^2
Mean/Median ratio:	1.084	Skewness:	1.106 Right skewed
Mode:	391.0 µm	Kurtosis:	1.278 Leptokurtic

d_{10}: 276.6 µm d_{50}: 424.4 µm d_{90}: 699.3 µm

Folk and Ward Statistics (Phi)

Mean:	1.21	Median:	1.24	Deviation:	0.52
Skewness:	-0.08	Kurtosis:	0.97		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
249.4 µm	301.8 µm	334.8 µm	387.1 µm	424.4 µm	549.1 µm	624.8 µm	800.9 µm

Particle Diameter µm	STD SAND_ 2 Feb 2023 _21.29.21 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	5.08
250	61.7
500	32.2
1000	0.99
2000	

STD SAND_ 2 Feb 2023_21.29.21.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.13
0.412	0	22.73	0	1255	0.0089
0.452	0	24.95	0	1377	0
0.496	0	27.39	0	1512	0
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0.0020		
2.920	0	161.2	0.038		
3.206	0	176.9	0.23		
3.519	0	194.2	0.77		
3.863	0	213.2	1.79		
4.241	0	234.1	3.24		
4.656	0	256.9	5.02		
5.111	0	282.1	6.86		
5.611	0	309.6	8.49		
6.159	0	339.9	9.66		
6.761	0	373.1	10.2		
7.422	0	409.6	10.1		
8.148	0	449.7	9.38		
8.944	0	493.6	8.31		
9.819	0	541.9	7.03		
10.78	0	594.9	5.71		
11.83	0	653.0	4.46		
12.99	0	716.9	3.34		
14.26	0	786.9	2.37		
15.65	0	863.9	1.56		
17.18	0	948.3	0.92		
18.86	0	1041	0.45		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-123671-1	EPBLLC_011023	99	98	100	100
570-123671-2	EPBMC_010923	98	98	99	99
570-123671-3	EPBBC_010923	99	97	99	99
570-123671-3 MS	EPBBC_010923	97	99	99	100
570-123671-3 MSD	EPBBC_010923	97	98	100	100
570-123671-4	EPBMC_011023	99	98	100	100
LCS 570-295459/4	Lab Control Sample	99	99	98	100
LCSD 570-295459/5	Lab Control Sample Dup	97	98	98	100
MB 570-295459/7	Method Blank	98	97	95	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-123671-1	EPBLLC_011023	81	58	31	60	21	77
570-123671-2	EPBMC_010923	105	79	36	88	22	94
570-123671-3	EPBBC_010923	93	73	39	85	24	84
570-123671-4	EPBMC_011023	93	54	24	65	17	72
LCS 570-296163/2-A	Lab Control Sample	97	107	64	93	45	117
LCSD 570-296163/3-A	Lab Control Sample Dup	106	103	65	97	46	114
MB 570-296163/1-A	Method Blank	60	77	40	77	27	100

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Isotope Dilution Summary

l ient H:a yin& A dir oh, . It hP
j co/nhl-Sen: gone F BBLRIBMd yt r g6 j

Job ID: 570-124C71-1

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-124C71-2	_j g6 l 3011024	C9	C1	C8	71	C1	59	55	51
570-124C71-4	_j ggl 3011024	C7	C0	C8	C9	55	55	52	51
570-124C71-8	_j g6 l 3011024	58	89	89	89	47	45	48	41
6 g 420-C87C18S1-d	6 nH,or giyt T	C4	55	54	59	88	82	4k	4k

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-124C71-2	_j g6 l 3011024	59	95	k4	9k	5C	99	79	97
570-124C71-4	_j ggl 3011024	5C	95	9k	94	52	94	71	79
570-124C71-8	_j g6 l 3011024	4C	71	C5	CC	48	74	C8	78
6 g 420-C87C18S1-d	6 nH,or giyt T	82	78	77	78	88	75	C5	70

Surrogate Legend

=l DD x 14l -2.4.7.9-=l DD
=l DL x 14l -2.4.7.9-=l DL
j nl DD x 14l -1.2.4.7.9-j nl DD
j nl DL x 14l -1.2.4.7.9-j nl DL
j nl L x 14l -2.4.8.7.9-j nl DL
apl DD x 14l -1.2.4.8.7.9-apl DD
apDD x 14l -1.2.4.C.7.9-apl DD
apl DL x 14l -1.2.4.8.7.9-apl DL
apDL x 14l -1.2.4.C.7.9-apl DL
apl L x 14l -1.2.4.7.9.k-apl DL
14l apl L x 14l -2.4.8.C.7.9-apl DL
aCl DD x 14l -1.2.4.8.C.7.9-aCl DD
aCl DL x 14l -1.2.4.8.C.7.9-aCl DL
aCl DL2 x 14l -1.2.4.8.7.9.k-aCl DL
ml DD x 14l -ml DD
ml DL x 14l -ml DL

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
Rl B 420-C87C18S2-d	Ryb l ot Hboi Byu Cln	C1	5C	5C	C0	81	80	47	44

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
Rl B 420-C87C18S2-d	Ryb l ot Hboi Byu Cln	49	79	90	79	80	7k	70	7C

Surrogate Legend

=l DD x 14l -2.4.7.9-=l DD
=l DL x 14l -2.4.7.9-=l DL
j nl DD x 14l -1.2.4.7.9-j nl DD
j nl DL x 14l -1.2.4.7.9-j nl DL
j nl L x 14l -2.4.8.7.9-j nl DL
apl DD x 14l -1.2.4.8.7.9-apl DD
apDD x 14l -1.2.4.C.7.9-apl DD

_Ecofet s l yishent hn

Isotope Dilution Summary

apl DL x 14l -1.2.4.8.7.9-apl DL
apDL x 14l -1.2.4.C.7.9-apl DL
apl L x 14l -1.2.4.7.9.k-apl DL
14l apl L x 14l -2.4.8.C.7.9-apl DL
aCl DD x 14l -1.2.4.8.C.7.9-aCl DD
aCl DL x 14l -1.2.4.8.C.7.9-aCl DL
aCl DL2 x 14l -1.2.4.8.7.9.k-aCl DL
ml DD x 14l -ml DD
ml DL x 14l -ml DL

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-295459/7
Matrix: Water
Analysis Batch: 295459

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/12/23 15:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*05*		*6/ - 14/*		*/ 19/129/23 1: B45*	*1*
4-f rob ozluoro8en7ene (Surr)	*0m*		*6/ - 14/*		*/ 19/129/23 1: B45*	*1*
Di8rob ozluorob ethane	*0:*		*6/ - 14/*		*/ 19/129/23 1: B45*	*1*
Toluene-d5 (Surr)	*00*		*6/ - 14/*		*/ 19/129/23 1: B45*	*1*

Lab Sample ID: LCS 570-295459/4
Matrix: Water
Analysis Batch: 295459

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	18.4		ug/L		92	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*00*		*6/ - 14/*
4-f rob ozluoro8en7ene (Surr)	*00*		*6/ - 14/*
Di8rob ozluorob ethane	*05*		*6/ - 14/*
Toluene-d5 (Surr)	*1/ /*		*6/ - 14/*

Lab Sample ID: LCSD 570-295459/5
Matrix: Water
Analysis Batch: 295459

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene			20.0	21.9		ug/L		110	65 - 135	18	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*0m*		*6/ - 14/*
4-f rob ozluoro8en7ene (Surr)	*05*		*6/ - 14/*
Di8rob ozluorob ethane	*05*		*6/ - 14/*
Toluene-d5 (Surr)	*1/ /*		*6/ - 14/*

Lab Sample ID: 570-123671-3 MS
Matrix: Water
Analysis Batch: 295459

Client Sample ID: EPBBC_010923
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene	ND		20.0	20.0		ug/L		100	70 - 157		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*0m*		*6/ - 14/*
4-f rob ozluoro8en7ene (Surr)	*00*		*6/ - 14/*
Di8rob ozluorob ethane	*00*		*6/ - 14/*
Toluene-d5 (Surr)	*1/ /*		*6/ - 14/*

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 570-123671-3 MSD **Client Sample ID: EPBBC_010923**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 295459

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene	ND		20.0	20.6		ug/L		103	70 - 157	3	48

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*0m*		*6/ - 14/*
4-f rob ozluoro8en7ene (Surr)	*05*		*6/ - 14/*
Di8rob ozluorob ethane	*1/ /*		*6/ - 14/*
Toluene-d5 (Surr)	*1/ /*		*6/ - 14/*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-296163/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 298493 **Prep Batch: 296163**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/16/23 13:07	01/25/23 11:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tri8rob ophenol (Surr)	*6/*		*25 - 12m*	*/ 19/ 16/ 23 13B7 m*	*/ 19/ 2: 9/ 23 11B10*	*1*
2-Fluoro8iphenyl (Surr)	*mm*		*31 - 12/*	*/ 19/ 16/ 23 13B7 m*	*/ 19/ 2: 9/ 23 11B10*	*1*
2-Fluorophenol (Surr)	*4/*		*1m- 12/*	*/ 19/ 16/ 23 13B7 m*	*/ 19/ 2: 9/ 23 11B10*	*1*
Nitro8en7ene-d: (Surr)	*mm*		*2m- 12/*	*/ 19/ 16/ 23 13B7 m*	*/ 19/ 2: 9/ 23 11B10*	*1*
Phenol-d6 (Surr)	*2m*		*1/ - 12/*	*/ 19/ 16/ 23 13B7 m*	*/ 19/ 2: 9/ 23 11B10*	*1*
p-Terphenyl-d14 (Surr)	*1/ /*		*4: - 12/*	*/ 19/ 16/ 23 13B7 m*	*/ 19/ 2: 9/ 23 11B10*	*1*

Lab Sample ID: LCS 570-296163/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 298493 **Prep Batch: 296163**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bis(2-ethylhexyl) phthalate			20.0	19.8		ug/L		99	29 - 137		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tri8rob ophenol (Surr)	*0m*		*25 - 12m*
2-Fluoro8iphenyl (Surr)	*1/ m*		*31 - 12/*
2-Fluorophenol (Surr)	*64*		*1m- 12/*
Nitro8en7ene-d: (Surr)	*03*		*2m- 12/*
Phenol-d6 (Surr)	*4:*		*1/ - 12/*
p-Terphenyl-d14 (Surr)	*11m*		*4: - 12/*

Lab Sample ID: LCSD 570-296163/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 298493 **Prep Batch: 296163**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate			20.0	21.0		ug/L		105	29 - 137	6	50

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-296163/3-A
Matrix: Water
Analysis Batch: 298493

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296163

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tri8rob ophenol (Surr)	*1/ 6*		*25 - 12m*
2-Fluoro8iphenyl (Surr)	*1/ 3*		*31 - 12/*
2-Fluorophenol (Surr)	*6:*		*1m- 12/*
Nitro8en7ene-d: (Surr)	*0m*		*2m- 12/*
Phenol-d6 (Surr)	*46*		*1/ - 12/*
p-Terphenyl-d14 (Surr)	*114*		*4: - 12/*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-295422/15
Matrix: Water
Analysis Batch: 295422

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/12/23 14:56	1

Lab Sample ID: LCS 570-295422/16
Matrix: Water
Analysis Batch: 295422

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	49.6		ug/L		99	95 - 107		

Lab Sample ID: LCSD 570-295422/17
Matrix: Water
Analysis Batch: 295422

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.0		ug/L		100	95 - 107	1	20

Lab Sample ID: 570-123671-2 MS
Matrix: Water
Analysis Batch: 295422

Client Sample ID: EPBMC_010923
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	1.1	BU BV	50.1	50.9		ug/L		99	85 - 121		

Lab Sample ID: 570-123671-2 MSD
Matrix: Water
Analysis Batch: 295422

Client Sample ID: EPBMC_010923
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	1.1	BU BV	50.1	53.4		ug/L		105	85 - 121	5	25

Lab Sample ID: MB 570-295288/1-A
Matrix: Water
Analysis Batch: 295422

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/12/23 19:03	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: LCS 570-295288/2-A
Matrix: Water
Analysis Batch: 295422

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	52.6		ug/L		105	95 - 107		

Lab Sample ID: LCSD 570-295288/3-A
Matrix: Water
Analysis Batch: 295422

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	51.2		ug/L		102	95 - 107	3	20

Lab Sample ID: 570-123671-2 MS
Matrix: Water
Analysis Batch: 295422

Client Sample ID: EPBMC_010923
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	1.1	BU BV	50.1	51.9		ug/L		102	85 - 121		

Lab Sample ID: 570-123671-2 MSD
Matrix: Water
Analysis Batch: 295422

Client Sample ID: EPBMC_010923
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	1.1	BU BV	50.1	52.0		ug/L		102	85 - 121	0	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-294994/5
Matrix: Water
Analysis Batch: 294994

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/11/23 20:13	1
Nitrate as N	ND		0.10	0.020	mg/L			01/11/23 20:13	1

Lab Sample ID: LCS 570-294994/6
Matrix: Water
Analysis Batch: 294994

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N			2.50	2.53		mg/L		101	90 - 110		
Nitrate as N			5.00	4.90		mg/L		98	90 - 110		

Lab Sample ID: LCSD 570-294994/7
Matrix: Water
Analysis Batch: 294994

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.52		mg/L		101	90 - 110	0	15
Nitrate as N			5.00	4.89		mg/L		98	90 - 110	0	15

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 570-123623-A-2 MS
Matrix: Water
Analysis Batch: 294994

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N	ND		2.50	2.41		mg/L		97	80 - 120		
Nitrate as N	0.20		5.00	5.09		mg/L		98	80 - 120		

Lab Sample ID: 570-123623-A-2 MSD
Matrix: Water
Analysis Batch: 294994

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	ND		2.50	2.65		mg/L		106	80 - 120	9	20
Nitrate as N	0.20		5.00	5.20		mg/L		100	80 - 120	2	20

Lab Sample ID: MB 570-294995/5
Matrix: Water
Analysis Batch: 294995

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			01/11/23 20:13	1
Sulfate	ND		1.0	0.24	mg/L			01/11/23 20:13	1

Lab Sample ID: LCS 570-294995/6
Matrix: Water
Analysis Batch: 294995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	2.50	2.59		mg/L		104	90 - 110		
Sulfate	50.0	48.6		mg/L		97	90 - 110		

Lab Sample ID: LCSD 570-294995/7
Matrix: Water
Analysis Batch: 294995

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	2.50	2.59		mg/L		104	90 - 110	0	15
Sulfate	50.0	48.8		mg/L		98	90 - 110	0	15

Lab Sample ID: 570-123623-A-2 MS
Matrix: Water
Analysis Batch: 294995

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	ND		2.50	2.33		mg/L		93	80 - 120		
Sulfate	1.3		50.0	50.2		mg/L		98	80 - 120		

Lab Sample ID: 570-123623-A-2 MSD
Matrix: Water
Analysis Batch: 294995

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	ND		2.50	2.74		mg/L		110	80 - 120	16	20
Sulfate	1.3		50.0	50.9		mg/L		99	80 - 120	1	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-296367/7
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/17/23 13:59	1

Lab Sample ID: LCS 570-296367/8
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	23.9		ug/L		96	85 - 115		

Lab Sample ID: LCSD 570-296367/9
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	23.8		ug/L		95	85 - 115	0	15

Lab Sample ID: 570-123690-P-1 MS
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	120	EY	50.0	206	EY LM	ug/L		171	80 - 120		

Lab Sample ID: 570-123690-P-1 MSD
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	120	EY	50.0	185	EY LM	ug/L		130	80 - 120	10	15

Lab Sample ID: MB 570-314154/7
Matrix: Water
Analysis Batch: 314154

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/23/23 12:31	1

Lab Sample ID: LCS 570-314154/8
Matrix: Water
Analysis Batch: 314154

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	24.3		ug/L		97	85 - 115		

Lab Sample ID: LCSD 570-314154/9
Matrix: Water
Analysis Batch: 314154

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.4		ug/L		98	85 - 115	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: 570-132170-E-9 MS
Matrix: Water
Analysis Batch: 314154

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	2.4		50.0	51.0		ug/L		97	80 - 120

Lab Sample ID: 570-132170-E-9 MSD
Matrix: Water
Analysis Batch: 314154

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	2.4		50.0	52.2		ug/L		100	80 - 120	2	15

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-415608/20
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/16/23 13:28	1

Lab Sample ID: MB 580-415608/23
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/16/23 13:40	1

Lab Sample ID: MB 580-415608/33
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/16/23 14:26	1

Lab Sample ID: LCS 580-415608/30
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00482		ug/L		96	77 - 123

Lab Sample ID: LCSD 580-415608/31
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00500	0.00502		ug/L		100	77 - 123	4	24

Method: 1631E - Mercury, Low Level (CVAFS) (Continued)

Lab Sample ID: 570-123568-E-1 MS
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.010		0.0150	0.0230		ug/L		86	71 - 125		

Lab Sample ID: 570-123568-E-1 MSD
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.010		0.0150	0.0209		ug/L		72	71 - 125	9	24

Lab Sample ID: 570-123671-2 MS
Matrix: Water
Analysis Batch: 415608

Client Sample ID: EPBMC_010923
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.0061		0.0100	0.0147		ug/L		86	71 - 125		

Lab Sample ID: 570-123671-2 MSD
Matrix: Water
Analysis Batch: 415608

Client Sample ID: EPBMC_010923
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0061		0.0100	0.0141		ug/L		80	71 - 125	4	24

Lab Sample ID: MB 580-415335/1-A
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/16/23 13:53	1

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-295991/1-A
Matrix: Water
Analysis Batch: 296174

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295991

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		01/16/23 07:05	01/16/23 11:53	1

Lab Sample ID: LCS 570-295991/2-A
Matrix: Water
Analysis Batch: 296174

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295991

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	498	J,DX	ug/L		100	85 - 115		

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 570-295991/3-A
Matrix: Water
Analysis Batch: 296174

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295991

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	494	J,DX	ug/L		99	85 - 115	1	20

Lab Sample ID: 570-123665-F-1-C MS
Matrix: Water
Analysis Batch: 296174

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 295991

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	47	J,DX	500	564		ug/L		103	80 - 120		

Lab Sample ID: 570-123665-F-1-D MSD
Matrix: Water
Analysis Batch: 296174

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295991

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	47	J,DX	500	563		ug/L		103	80 - 120	0	20

Lab Sample ID: MB 570-295726/1-A
Matrix: Water
Analysis Batch: 295997

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			01/14/23 02:18	1

Lab Sample ID: LCS 570-295726/2-A
Matrix: Water
Analysis Batch: 295997

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	469	J,DX	ug/L		94	85 - 115		

Lab Sample ID: LCSD 570-295726/3-A
Matrix: Water
Analysis Batch: 295997

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	475	J,DX	ug/L		95	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-295993/1-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/16/23 07:29	01/16/23 11:51	1
Arsenic	ND		1.0	0.16	ug/L		01/16/23 07:29	01/16/23 11:51	1
Barium	ND		1.0	0.17	ug/L		01/16/23 07:29	01/16/23 11:51	1
Beryllium	ND		0.50	0.26	ug/L		01/16/23 07:29	01/16/23 11:51	1
Cadmium	ND		1.0	0.13	ug/L		01/16/23 07:29	01/16/23 11:51	1
Chromium	ND		2.0	0.14	ug/L		01/16/23 07:29	01/16/23 11:51	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-295993/1-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		2.0	0.32	ug/L		01/16/23 07:29	01/16/23 11:51	1
Iron	ND		20	3.7	ug/L		01/16/23 07:29	01/16/23 11:51	1
Manganese	ND		1.0	0.41	ug/L		01/16/23 07:29	01/16/23 11:51	1
Nickel	ND		2.0	0.17	ug/L		01/16/23 07:29	01/16/23 11:51	1
Lead	ND		1.0	0.12	ug/L		01/16/23 07:29	01/16/23 11:51	1
Antimony	ND		2.0	0.36	ug/L		01/16/23 07:29	01/16/23 11:51	1
Selenium	ND		2.0	0.52	ug/L		01/16/23 07:29	01/16/23 11:51	1
Thallium	ND		1.0	0.11	ug/L		01/16/23 07:29	01/16/23 11:51	1
Zinc	ND		20	2.8	ug/L		01/16/23 07:29	01/16/23 11:51	1

Lab Sample ID: LCS 570-295993/2-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	80.0	80.2		ug/L		100	85 - 115
Arsenic	80.0	80.3		ug/L		100	85 - 115
Barium	80.0	82.3		ug/L		103	85 - 115
Beryllium	80.0	80.7		ug/L		101	85 - 115
Cadmium	80.0	80.5		ug/L		101	85 - 115
Chromium	80.0	81.0		ug/L		101	85 - 115
Copper	80.0	81.2		ug/L		102	85 - 115
Iron	800	810		ug/L		101	85 - 115
Manganese	80.0	79.9		ug/L		100	85 - 115
Nickel	80.0	80.5		ug/L		101	85 - 115
Lead	80.0	80.5		ug/L		101	85 - 115
Antimony	80.0	81.0		ug/L		101	85 - 115
Selenium	80.0	78.9		ug/L		99	85 - 115
Thallium	80.0	80.1		ug/L		100	85 - 115
Zinc	80.0	79.5		ug/L		99	85 - 115

Lab Sample ID: LCSD 570-295993/3-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	80.0	77.6		ug/L		97	85 - 115	3	20
Arsenic	80.0	77.0		ug/L		96	85 - 115	4	20
Barium	80.0	79.0		ug/L		99	85 - 115	4	20
Beryllium	80.0	79.6		ug/L		100	85 - 115	1	20
Cadmium	80.0	78.3		ug/L		98	85 - 115	3	20
Chromium	80.0	79.4		ug/L		99	85 - 115	2	20
Copper	80.0	80.4		ug/L		100	85 - 115	1	20
Iron	800	806		ug/L		101	85 - 115	0	20
Manganese	80.0	79.2		ug/L		99	85 - 115	1	20
Nickel	80.0	80.2		ug/L		100	85 - 115	0	20
Lead	80.0	79.8		ug/L		100	85 - 115	1	20
Antimony	80.0	79.1		ug/L		99	85 - 115	2	20
Selenium	80.0	78.2		ug/L		98	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-295993/3-A
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Thallium			80.0	79.4		ug/L		99	85 - 115	1	20
Zinc			80.0	77.7		ug/L		97	85 - 115	2	20

Lab Sample ID: 570-123665-F-1-F MS
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	ND		50.0	43.6		ug/L		87	80 - 120
Arsenic	ND		100	86.7		ug/L		87	80 - 120
Barium	11		100	102		ug/L		91	80 - 120
Beryllium	ND		100	89.2		ug/L		89	80 - 120
Cadmium	ND		100	88.5		ug/L		89	80 - 120
Chromium	0.25	J,DX	100	88.9		ug/L		89	80 - 120
Copper	2.2		100	91.0		ug/L		89	80 - 120
Iron	6.8	J,DX	100	97.0		ug/L		90	80 - 120
Manganese	13		100	100		ug/L		87	80 - 120
Nickel	0.80	J,DX	100	89.4		ug/L		89	80 - 120
Lead	0.15	J,DX	100	89.0		ug/L		89	80 - 120
Antimony	ND		100	80.8		ug/L		81	80 - 120
Selenium	ND		100	81.8		ug/L		82	80 - 120
Thallium	ND		100	88.0		ug/L		88	80 - 120
Zinc	ND		100	86.7		ug/L		87	80 - 120

Lab Sample ID: 570-123665-F-1-G MSD
Matrix: Water
Analysis Batch: 296199

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 295993

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	ND		50.0	45.7		ug/L		91	80 - 120	5	20
Arsenic	ND		100	91.1		ug/L		91	80 - 120	5	20
Barium	11		100	107		ug/L		96	80 - 120	4	20
Beryllium	ND		100	94.3		ug/L		94	80 - 120	6	20
Cadmium	ND		100	92.6		ug/L		93	80 - 120	5	20
Chromium	0.25	J,DX	100	92.0		ug/L		92	80 - 120	3	20
Copper	2.2		100	94.9		ug/L		93	80 - 120	4	20
Iron	6.8	J,DX	100	104		ug/L		97	80 - 120	7	20
Manganese	13		100	105		ug/L		92	80 - 120	4	20
Nickel	0.80	J,DX	100	92.6		ug/L		92	80 - 120	4	20
Lead	0.15	J,DX	100	92.2		ug/L		92	80 - 120	4	20
Antimony	ND		100	86.6		ug/L		87	80 - 120	7	20
Selenium	ND		100	88.7		ug/L		89	80 - 120	8	20
Thallium	ND		100	90.6		ug/L		91	80 - 120	3	20
Zinc	ND		100	92.8		ug/L		93	80 - 120	7	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-295715/1-A
Matrix: Water
Analysis Batch: 296079

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L			01/16/23 09:49	1
Arsenic	ND		1.0	0.16	ug/L			01/16/23 09:49	1
Barium	ND		1.0	0.17	ug/L			01/16/23 09:49	1
Beryllium	ND		0.50	0.26	ug/L			01/16/23 09:49	1
Cadmium	ND		1.0	0.13	ug/L			01/16/23 09:49	1
Chromium	ND		2.0	0.14	ug/L			01/16/23 09:49	1
Copper	ND		2.0	0.32	ug/L			01/16/23 09:49	1
Iron	ND		20	3.7	ug/L			01/16/23 09:49	1
Manganese	ND		1.0	0.41	ug/L			01/16/23 09:49	1
Nickel	ND		2.0	0.17	ug/L			01/16/23 09:49	1
Lead	ND		1.0	0.12	ug/L			01/16/23 09:49	1
Antimony	ND		2.0	0.36	ug/L			01/16/23 09:49	1
Selenium	ND		2.0	0.52	ug/L			01/16/23 09:49	1
Thallium	ND		1.0	0.11	ug/L			01/16/23 09:49	1
Zinc	ND		20	2.8	ug/L			01/16/23 09:49	1

Lab Sample ID: LCS 570-295715/2-A
Matrix: Water
Analysis Batch: 296079

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Silver			50.0	44.6		ug/L		89	85 - 115		
Arsenic			100	95.5		ug/L		96	85 - 115		
Barium			100	97.2		ug/L		97	85 - 115		
Beryllium			100	96.3		ug/L		96	85 - 115		
Cadmium			100	97.4		ug/L		97	85 - 115		
Chromium			100	97.3		ug/L		97	85 - 115		
Copper			100	96.2		ug/L		96	85 - 115		
Iron			100	96.5		ug/L		96	85 - 115		
Manganese			100	97.1		ug/L		97	85 - 115		
Nickel			100	97.7		ug/L		98	85 - 115		
Lead			100	96.2		ug/L		96	85 - 115		
Antimony			100	88.3		ug/L		88	85 - 115		
Selenium			100	94.3		ug/L		94	85 - 115		
Thallium			100	96.8		ug/L		97	85 - 115		
Zinc			100	95.1		ug/L		95	85 - 115		

Lab Sample ID: LCSD 570-295715/3-A
Matrix: Water
Analysis Batch: 296079

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver			50.0	45.4		ug/L		91	85 - 115	2	20
Arsenic			100	95.3		ug/L		95	85 - 115	0	20
Barium			100	98.5		ug/L		99	85 - 115	1	20
Beryllium			100	95.9		ug/L		96	85 - 115	0	20
Cadmium			100	98.5		ug/L		98	85 - 115	1	20
Chromium			100	97.6		ug/L		98	85 - 115	0	20
Copper			100	97.4		ug/L		97	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-295715/3-A
Matrix: Water
Analysis Batch: 296079

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron			100	97.2		ug/L		97	85 - 115	1	20
Manganese			100	97.5		ug/L		98	85 - 115	0	20
Nickel			100	98.7		ug/L		99	85 - 115	1	20
Lead			100	97.0		ug/L		97	85 - 115	1	20
Antimony			100	91.5		ug/L		92	85 - 115	4	20
Selenium			100	92.9		ug/L		93	85 - 115	1	20
Thallium			100	95.9		ug/L		96	85 - 115	1	20
Zinc			100	96.0		ug/L		96	85 - 115	1	20

Lab Sample ID: 570-123707-A-1-D MSD
Matrix: Water
Analysis Batch: 296079

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	ND		50.0	43.4		ug/L		87	80 - 120	4	20
Arsenic	0.19	J,DX	100	92.3		ug/L		92	80 - 120	0	20
Barium	8.4		100	105		ug/L		96	80 - 120	3	20
Beryllium	ND		100	94.0		ug/L		94	80 - 120	2	20
Cadmium	ND		100	96.0		ug/L		96	80 - 120	3	20
Chromium	0.25	J,DX	100	93.5		ug/L		93	80 - 120	0	20
Copper	13		100	105		ug/L		93	80 - 120	0	20
Iron	26		100	117		ug/L		91	80 - 120	2	20
Manganese	2.6		100	95.9		ug/L		93	80 - 120	1	20
Nickel	0.45	J,DX	100	95.0		ug/L		95	80 - 120	1	20
Lead	0.13	J,DX	100	95.3		ug/L		95	80 - 120	5	20
Antimony	19		100	112		ug/L		92	80 - 120	4	20
Selenium	ND		100	90.6		ug/L		91	80 - 120	0	20
Thallium	0.14	J,DX	100	93.5		ug/L		93	80 - 120	2	20
Zinc	170		100	263		ug/L		88	80 - 120	1	20

Lab Sample ID: 570-123707-A-1-E MS
Matrix: Water
Analysis Batch: 296079

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	ND		50.0	41.8		ug/L		84	80 - 120
Arsenic	0.19	J,DX	100	92.4		ug/L		92	80 - 120
Barium	8.4		100	102		ug/L		94	80 - 120
Beryllium	ND		100	91.9		ug/L		92	80 - 120
Cadmium	ND		100	93.1		ug/L		93	80 - 120
Chromium	0.25	J,DX	100	93.1		ug/L		93	80 - 120
Copper	13		100	105		ug/L		92	80 - 120
Iron	26		100	115		ug/L		89	80 - 120
Manganese	2.6		100	95.4		ug/L		93	80 - 120
Nickel	0.45	J,DX	100	94.2		ug/L		94	80 - 120
Lead	0.13	J,DX	100	90.9		ug/L		91	80 - 120
Antimony	19		100	108		ug/L		88	80 - 120
Selenium	ND		100	91.0		ug/L		91	80 - 120
Thallium	0.14	J,DX	100	91.5		ug/L		91	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-123707-A-1-E MS
Matrix: Water
Analysis Batch: 296079

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Zinc	170		100	266		ug/L		91	80 - 120		

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-296127/11
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/13/23 14:05	1

Lab Sample ID: LCS 570-296127/12
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			250	255		ug/L		102	90 - 110		

Lab Sample ID: LCSD 570-296127/13
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	255		ug/L		102	90 - 110	0	20

Lab Sample ID: MRL 570-296127/10
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			5.00	4.46	J,DX	ug/L		89	50 - 150		

Lab Sample ID: 570-123567-H-4 MS
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total	ND		250	235		ug/L		94	70 - 130		

Lab Sample ID: 570-123567-H-4 MSD
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	227		ug/L		91	70 - 130	3	30

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: 570-123567-H-4 DU
Matrix: Water
Analysis Batch: 296127

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cyanide, Total	ND			ND		ug/L				NC	

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-295479/1
Matrix: Water
Analysis Batch: 295479

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/12/23 14:50	1

Lab Sample ID: LCS 570-295479/2
Matrix: Water
Analysis Batch: 295479

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	102		mg/L		102	77 - 116		

Lab Sample ID: LCSD 570-295479/3
Matrix: Water
Analysis Batch: 295479

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	106		mg/L		106	77 - 116	4	10

Lab Sample ID: 570-123429-C-1 DU
Matrix: Water
Analysis Batch: 295479

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	37			34.6		mg/L				7	10

Lab Sample ID: MB 570-295488/1
Matrix: Water
Analysis Batch: 295488

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/12/23 15:13	1

Lab Sample ID: LCS 570-295488/2
Matrix: Water
Analysis Batch: 295488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	103		mg/L		103	77 - 116		

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 570-295488/3
Matrix: Water
Analysis Batch: 295488

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	108		mg/L		108	77 - 116	5	10

Lab Sample ID: 570-123672-A-1 DU
Matrix: Water
Analysis Batch: 295488

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	42			51.6		mg/L				21	10

Lab Sample ID: MB 570-296142/1
Matrix: Water
Analysis Batch: 296142

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/16/23 12:43	1

Lab Sample ID: LCS 570-296142/2
Matrix: Water
Analysis Batch: 296142

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	101		mg/L		101	77 - 116		

Lab Sample ID: LCSD 570-296142/3
Matrix: Water
Analysis Batch: 296142

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	99.0		mg/L		99	77 - 116	2	10

Lab Sample ID: 570-123671-1 DU
Matrix: Water
Analysis Batch: 296142

Client Sample ID: EPBLLC_011023
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	1500			1410		mg/L				7	10

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-123671-1 DU
Matrix: Water
Analysis Batch: 301048

Client Sample ID: EPBLLC_011023
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay (less than 0.00391 mm)	27.84			48.79		%				55	20
Coarse Sand (0.5mm to 1mm)	ND			ND		%				NC	20
Fine Sand (0.125 to 0.25mm)	ND			ND		%				NC	20
Gravel (greater than 2 mm)	ND			ND		%				NC	20
Medium Sand (0.25 to 0.5 mm)	ND			ND		%				NC	20
Silt (0.00391 to 0.0625mm)	71.41			51.21		%				33	20

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Lab Sample ID: 570-123671-1 DU
Matrix: Water
Analysis Batch: 301048

Client Sample ID: EPBLLC_011023
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Silt and Clay (0 to 0.0626mm)	99.25			100.00		%				0.8	20
Very Coarse Sand (1 to 2mm)	ND			ND		%				NC	20
Very Fine Sand (0.0625 to 0.125 mm)	0.75			ND		%				NC	20

GC/MS VOA

Analysis Batch: 295459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	624.1	
570-123671-2	EPBMC_010923	Total/NA	Water	624.1	
570-123671-3	EPBBC_010923	Total/NA	Water	624.1	
570-123671-4	EPBMC_011023	Total/NA	Water	624.1	
MB 570-295459/7	Method Blank	Total/NA	Water	624.1	
LCS 570-295459/4	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-295459/5	Lab Control Sample Dup	Total/NA	Water	624.1	
570-123671-3 MS	EPBBC_010923	Total/NA	Water	624.1	
570-123671-3 MSD	EPBBC_010923	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 296163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	625	
570-123671-2	EPBMC_010923	Total/NA	Water	625	
570-123671-3	EPBBC_010923	Total/NA	Water	625	
570-123671-4	EPBMC_011023	Total/NA	Water	625	
MB 570-296163/1-A	Method Blank	Total/NA	Water	625	
LCS 570-296163/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-296163/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 296373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	625.1 SIM	296163
570-123671-2	EPBMC_010923	Total/NA	Water	625.1 SIM	296163
570-123671-3	EPBBC_010923	Total/NA	Water	625.1 SIM	296163

Analysis Batch: 298493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-4	EPBMC_011023	Total/NA	Water	625.1 SIM	296163
MB 570-296163/1-A	Method Blank	Total/NA	Water	625.1 SIM	296163
LCS 570-296163/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	296163
LCSD 570-296163/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	296163

HPLC/IC

Analysis Batch: 294994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	300.0	
570-123671-2	EPBMC_010923	Total/NA	Water	300.0	
570-123671-3	EPBBC_010923	Total/NA	Water	300.0	
570-123671-4	EPBMC_011023	Total/NA	Water	300.0	
MB 570-294994/5	Method Blank	Total/NA	Water	300.0	
LCS 570-294994/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-294994/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123623-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
570-123623-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 294995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 294995 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1 - DL	EPBLLC_011023	Total/NA	Water	300.0	
570-123671-2	EPBMC_010923	Total/NA	Water	300.0	
570-123671-3	EPBBC_010923	Total/NA	Water	300.0	
570-123671-4	EPBMC_011023	Total/NA	Water	300.0	
MB 570-294995/5	Method Blank	Total/NA	Water	300.0	
LCS 570-294995/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-294995/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123623-A-2 MS	Matrix Spike	Total/NA	Water	300.0	
570-123623-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Filtration Batch: 295288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	Filtration	
570-123671-2	EPBMC_010923	Dissolved	Water	Filtration	
570-123671-3	EPBBC_010923	Dissolved	Water	Filtration	
570-123671-4	EPBMC_011023	Dissolved	Water	Filtration	
MB 570-295288/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-295288/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295288/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123671-2 MS	EPBMC_010923	Dissolved	Water	Filtration	
570-123671-2 MSD	EPBMC_010923	Dissolved	Water	Filtration	

Analysis Batch: 295422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	218.6	295288
570-123671-1	EPBLLC_011023	Total/NA	Water	218.6	
570-123671-2	EPBMC_010923	Dissolved	Water	218.6	295288
570-123671-2	EPBMC_010923	Total/NA	Water	218.6	
570-123671-3	EPBBC_010923	Dissolved	Water	218.6	295288
570-123671-3	EPBBC_010923	Total/NA	Water	218.6	
570-123671-4	EPBMC_011023	Dissolved	Water	218.6	295288
570-123671-4	EPBMC_011023	Total/NA	Water	218.6	
MB 570-295288/1-A	Method Blank	Dissolved	Water	218.6	295288
MB 570-295422/15	Method Blank	Total/NA	Water	218.6	
LCS 570-295288/2-A	Lab Control Sample	Dissolved	Water	218.6	295288
LCS 570-295422/16	Lab Control Sample	Total/NA	Water	218.6	
LCSD 570-295288/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	295288
LCSD 570-295422/17	Lab Control Sample Dup	Total/NA	Water	218.6	
570-123671-2 MS	EPBMC_010923	Dissolved	Water	218.6	295288
570-123671-2 MS	EPBMC_010923	Total/NA	Water	218.6	
570-123671-2 MSD	EPBMC_010923	Dissolved	Water	218.6	295288
570-123671-2 MSD	EPBMC_010923	Total/NA	Water	218.6	

Analysis Batch: 296367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	314.0	
570-123671-2	EPBMC_010923	Total/NA	Water	314.0	
570-123671-3	EPBBC_010923	Total/NA	Water	314.0	
570-123671-4	EPBMC_011023	Total/NA	Water	314.0	
MB 570-296367/7	Method Blank	Total/NA	Water	314.0	
LCS 570-296367/8	Lab Control Sample	Total/NA	Water	314.0	

HPLC/IC (Continued)

Analysis Batch: 296367 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-296367/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-123690-P-1 MS	Matrix Spike	Total/NA	Water	314.0	
570-123690-P-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 314154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	314.0	
MB 570-314154/7	Method Blank	Total/NA	Water	314.0	
LCS 570-314154/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-314154/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-132170-E-9 MS	Matrix Spike	Total/NA	Water	314.0	
570-132170-E-9 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Metals

Filtration Batch: 295715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	Filtration	
570-123671-2	EPBMC_010923	Dissolved	Water	Filtration	
570-123671-3	EPBBC_010923	Dissolved	Water	Filtration	
570-123671-4	EPBMC_011023	Dissolved	Water	Filtration	
MB 570-295715/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-295715/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295715/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123707-A-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	
570-123707-A-1-E MS	Matrix Spike	Dissolved	Water	Filtration	

Filtration Batch: 295726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	Filtration	
570-123671-2	EPBMC_010923	Dissolved	Water	Filtration	
570-123671-3	EPBBC_010923	Dissolved	Water	Filtration	
570-123671-4	EPBMC_011023	Dissolved	Water	Filtration	
MB 570-295726/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-295726/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295726/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 295991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total Recoverable	Water	200.7	
570-123671-2	EPBMC_010923	Total Recoverable	Water	200.7	
570-123671-3	EPBBC_010923	Total Recoverable	Water	200.7	
570-123671-4	EPBMC_011023	Total Recoverable	Water	200.7	
MB 570-295991/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-295991/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-295991/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-123665-F-1-C MS	Matrix Spike	Total Recoverable	Water	200.7	
570-123665-F-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Metals

Prep Batch: 295993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total Recoverable	Water	200.8	
570-123671-2	EPBMC_010923	Total Recoverable	Water	200.8	
570-123671-3	EPBBC_010923	Total Recoverable	Water	200.8	
570-123671-4	EPBMC_011023	Total Recoverable	Water	200.8	
MB 570-295993/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-295993/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-295993/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-123665-F-1-F MS	Matrix Spike	Total Recoverable	Water	200.8	
570-123665-F-1-G MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 295997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	200.7 Rev 4.4	295726
570-123671-2	EPBMC_010923	Dissolved	Water	200.7 Rev 4.4	295726
570-123671-3	EPBBC_010923	Dissolved	Water	200.7 Rev 4.4	295726
570-123671-4	EPBMC_011023	Dissolved	Water	200.7 Rev 4.4	295726
MB 570-295726/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	295726
LCS 570-295726/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	295726
LCSD 570-295726/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	295726

Analysis Batch: 296079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	200.8	295715
570-123671-2	EPBMC_010923	Dissolved	Water	200.8	295715
570-123671-3	EPBBC_010923	Dissolved	Water	200.8	295715
570-123671-4	EPBMC_011023	Dissolved	Water	200.8	295715
MB 570-295715/1-A	Method Blank	Dissolved	Water	200.8	295715
LCS 570-295715/2-A	Lab Control Sample	Dissolved	Water	200.8	295715
LCSD 570-295715/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	295715
570-123707-A-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	295715
570-123707-A-1-E MS	Matrix Spike	Dissolved	Water	200.8	295715

Analysis Batch: 296174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total Recoverable	Water	200.7 Rev 4.4	295991
570-123671-2	EPBMC_010923	Total Recoverable	Water	200.7 Rev 4.4	295991
570-123671-3	EPBBC_010923	Total Recoverable	Water	200.7 Rev 4.4	295991
570-123671-4	EPBMC_011023	Total Recoverable	Water	200.7 Rev 4.4	295991
MB 570-295991/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	295991
LCS 570-295991/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	295991
LCSD 570-295991/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	295991
570-123665-F-1-C MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	295991
570-123665-F-1-D MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	295991

Analysis Batch: 296199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total Recoverable	Water	200.8	295993
570-123671-2	EPBMC_010923	Total Recoverable	Water	200.8	295993
570-123671-3	EPBBC_010923	Total Recoverable	Water	200.8	295993
570-123671-4	EPBMC_011023	Total Recoverable	Water	200.8	295993
MB 570-295993/1-A	Method Blank	Total Recoverable	Water	200.8	295993

Metals (Continued)

Analysis Batch: 296199 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-295993/2-A	Lab Control Sample	Total Recoverable	Water	200.8	295993
LCSD 570-295993/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	295993
570-123665-F-1-F MS	Matrix Spike	Total Recoverable	Water	200.8	295993
570-123665-F-1-G MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	295993

Filtration Batch: 415335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-2	EPBMC_010923	Dissolved	Water	Filtration	
570-123671-3	EPBBC_010923	Dissolved	Water	Filtration	
570-123671-4	EPBMC_011023	Dissolved	Water	Filtration	
MB 580-415335/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 415608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-2	EPBMC_010923	Dissolved	Water	1631E	415335
570-123671-2	EPBMC_010923	Total/NA	Water	1631E	
570-123671-3	EPBBC_010923	Dissolved	Water	1631E	415335
570-123671-3	EPBBC_010923	Total/NA	Water	1631E	
570-123671-4	EPBMC_011023	Dissolved	Water	1631E	415335
570-123671-4	EPBMC_011023	Total/NA	Water	1631E	
MB 580-415335/1-A	Method Blank	Dissolved	Water	1631E	415335
MB 580-415608/20	Method Blank	Total/NA	Water	1631E	
MB 580-415608/23	Method Blank	Total/NA	Water	1631E	
MB 580-415608/33	Method Blank	Total/NA	Water	1631E	
LCS 580-415608/30	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-415608/31	Lab Control Sample Dup	Total/NA	Water	1631E	
570-123568-E-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-123568-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
570-123671-2 MS	EPBMC_010923	Total/NA	Water	1631E	
570-123671-2 MSD	EPBMC_010923	Total/NA	Water	1631E	

General Chemistry

Analysis Batch: 295479

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-3	EPBBC_010923	Total/NA	Water	SM 2540D	
MB 570-295479/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-295479/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-295479/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-123429-C-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 295488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-2	EPBMC_010923	Total/NA	Water	SM 2540D	
MB 570-295488/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-295488/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-295488/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-123672-A-1 DU	Duplicate	Total/NA	Water	SM 2540D	

General Chemistry

Analysis Batch: 296127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	Kelada 01	
570-123671-2	EPBMC_010923	Total/NA	Water	Kelada 01	
570-123671-3	EPBBC_010923	Total/NA	Water	Kelada 01	
570-123671-4	EPBMC_011023	Total/NA	Water	Kelada 01	
MB 570-296127/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-296127/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-296127/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-296127/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-123567-H-4 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-123567-H-4 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	
570-123567-H-4 DU	Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 296142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	SM 2540D	
570-123671-4	EPBMC_011023	Total/NA	Water	SM 2540D	
MB 570-296142/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-296142/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-296142/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-123671-1 DU	EPBLLC_011023	Total/NA	Water	SM 2540D	

Analysis Batch: 296555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	218.6 CR3	

Analysis Batch: 297525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-2	EPBMC_010923	Total/NA	Water	218.6 CR3	
570-123671-3	EPBBC_010923	Total/NA	Water	218.6 CR3	
570-123671-4	EPBMC_011023	Total/NA	Water	218.6 CR3	

Geotechnical

Analysis Batch: 297942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-2	EPBMC_010923	Total/NA	Water	D4464	
570-123671-3	EPBBC_010923	Total/NA	Water	D4464	
570-123671-4	EPBMC_011023	Total/NA	Water	D4464	

Analysis Batch: 301048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	D4464	
LCS 570-301048/16	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-301048/18	Lab Control Sample Dup	Total/NA	Water	D4464	
570-123671-1 DU	EPBLLC_011023	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Client Sample ID: EPBLLC_011023

Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		2	5 mL	5 mL	295459	01/12/23 19:05	KHF2	EET CAL 4
	Instrument ID: GCMSQQ									
Total/NA	Prep	625			1019.7 mL	2 mL	296163	01/17/23 05:12	OAJ3	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	296373	01/17/23 19:38	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Dissolved	Filtration	Filtration			100 mL	100 mL	295288	01/12/23 01:30	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	295422	01/12/23 19:33	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	218.6		1	4 mL	4 mL	295422	01/12/23 17:44	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	300.0		2	4 mL	4 mL	294994	01/12/23 02:09	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	300.0		2	4 mL	4 mL	294995	01/12/23 02:09	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	300.0	DL	10	4 mL	4 mL	294995	01/12/23 02:26	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	314.0		1	4 mL	4 mL	296367	01/17/23 19:12	M5Z3	EET CAL 4
	Instrument ID: IC13									
Total/NA	Analysis	314.0		1	4 mL	4 mL	314154	03/23/23 22:57	PS	EET CAL 4
	Instrument ID: IC8									
Dissolved	Filtration	Filtration			50 mL	50 mL	295726	01/13/23 12:19	W1BQ	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			295997	01/14/23 03:01	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	295991	01/16/23 07:05	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			296174	01/16/23 16:20	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	295715	01/13/23 12:13	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			296079	01/16/23 09:27	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	295993	01/16/23 07:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296199	01/16/23 13:12	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			296555	01/17/23 17:49	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	296127	01/13/23 15:06	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	100 mL	1000 mL	296142	01/16/23 12:43	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			301048	02/02/23 20:37	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Client Sample ID: EPBMC_010923

Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	5 mL	5 mL	295459	01/12/23 18:21	KHF2	EET CAL 4
	Instrument ID: GCMSQQ									
Total/NA	Prep	625			999.1 mL	2 mL	296163	01/16/23 13:07	OAJ3	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	296373	01/17/23 17:53	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Dissolved	Filtration	Filtration			100 mL	100 mL	295288	01/12/23 01:30	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	295422	01/12/23 19:43	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	218.6		1	4 mL	4 mL	295422	01/12/23 17:54	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	300.0		2	4 mL	4 mL	294994	01/12/23 02:43	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	300.0		2	4 mL	4 mL	294995	01/12/23 02:43	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	314.0		1	4 mL	4 mL	296367	01/17/23 19:33	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			250 mL	250 mL	415335	01/13/23 10:46	LEL	EET SEA
Dissolved	Analysis	1631E		1			415608	01/16/23 16:43	D1C	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415608	01/16/23 12:50	D1C	EET SEA
	Instrument ID: 2600-4									
Dissolved	Filtration	Filtration			50 mL	50 mL	295726	01/13/23 12:19	W1BQ	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			295997	01/14/23 03:04	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	295991	01/16/23 07:05	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			296174	01/16/23 16:27	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	295715	01/13/23 12:14	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			296079	01/16/23 09:29	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	295993	01/16/23 07:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296199	01/16/23 13:14	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			297525	01/20/23 17:27	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	296127	01/13/23 14:45	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	295488	01/12/23 15:13	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			297942	01/23/23 12:19	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Client Sample ID: EPBBC_010923

Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	5 mL	5 mL	295459	01/12/23 17:37	KHF2	EET CAL 4
	Instrument ID: GCMSQQ									
Total/NA	Prep	625			1025.4 mL	2 mL	296163	01/16/23 13:07	OAJ3	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	296373	01/17/23 18:14	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Dissolved	Filtration	Filtration			100 mL	100 mL	295288	01/12/23 01:30	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	295422	01/12/23 19:53	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	218.6		1	4 mL	4 mL	295422	01/12/23 18:04	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	300.0		2	4 mL	4 mL	294994	01/12/23 03:33	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	300.0		2	4 mL	4 mL	294995	01/12/23 03:33	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	314.0		1	4 mL	4 mL	296367	01/17/23 19:54	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			250 mL	250 mL	415335	01/13/23 10:46	LEL	EET SEA
Dissolved	Analysis	1631E		1			415608	01/16/23 16:47	D1C	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415608	01/16/23 16:34	D1C	EET SEA
	Instrument ID: 2600-4									
Dissolved	Filtration	Filtration			50 mL	50 mL	295726	01/13/23 12:19	W1BQ	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			295997	01/14/23 03:06	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	295991	01/16/23 07:05	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			296174	01/16/23 16:30	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	295715	01/13/23 12:14	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			296079	01/16/23 09:32	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	295993	01/16/23 07:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296199	01/16/23 13:17	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			297525	01/20/23 17:27	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	296127	01/13/23 14:52	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	400 mL	1000 mL	295479	01/12/23 14:50	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			297942	01/23/23 12:33	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Client Sample ID: EPBMC_011023

Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	5 mL	5 mL	295459	01/12/23 17:59	KHF2	EET CAL 4
	Instrument ID: GCMSQQ									
Total/NA	Prep	625			1041.9 mL	2 mL	296163	01/17/23 05:12	OAJ3	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	298493	01/25/23 14:32	ULLI	EET CAL 4
	Instrument ID: GCMSEEE									
Dissolved	Filtration	Filtration			100 mL	100 mL	295288	01/12/23 01:30	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	295422	01/12/23 20:03	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	218.6		1	4 mL	4 mL	295422	01/12/23 18:14	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	300.0		5	4 mL	4 mL	294994	01/12/23 03:50	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	300.0		5	4 mL	4 mL	294995	01/12/23 03:50	PS	EET CAL 4
	Instrument ID: IC7									
Total/NA	Analysis	314.0		1	4 mL	4 mL	296367	01/17/23 20:15	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			250 mL	250 mL	415335	01/13/23 10:46	LEL	EET SEA
Dissolved	Analysis	1631E		1			415608	01/16/23 16:52	D1C	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		10			415608	01/16/23 14:42	D1C	EET SEA
	Instrument ID: 2600-4									
Dissolved	Filtration	Filtration			50 mL	50 mL	295726	01/13/23 12:19	W1BQ	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			295997	01/14/23 03:09	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	295991	01/16/23 07:05	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			296174	01/16/23 16:32	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	295715	01/13/23 12:14	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			296079	01/16/23 09:34	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	295993	01/16/23 07:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296199	01/16/23 13:19	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			297525	01/20/23 17:27	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	296127	01/13/23 14:59	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	50 mL	1000 mL	296142	01/16/23 12:43	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			297942	01/23/23 12:42	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494
EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	01-24-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
Filtration	Sample Filtration	None	EET SEA

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494
EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123671-1	EPBLLC_011023	Water	01/10/23 09:30	01/11/23 19:10
570-123671-2	EPBMC_010923	Water	01/09/23 13:05	01/11/23 19:10
570-123671-3	EPBBC_010923	Water	01/09/23 10:30	01/11/23 19:10
570-123671-4	EPBMC_011023	Water	01/10/23 11:00	01/11/23 19:10

123671

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: 01/09/2023

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 01/10/2023	COC No: 1 of 1 COCs
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8605	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier Pick Up	Sampler: M - Dallaloh / J. Vanderwaal
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			For Lab Use Only:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(619) 280-9210 Phone	TAT if different from Below			Lab Sampling:
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-08	☐ 1 week			Job / SDG No.: 0129095-020-06
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			
H&A P O #	☐ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn: – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
									2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availab by only need to be partially filled to meet the volume requirement as stated here.
1	EPBLLC_011023	1-10-23	0930	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2	EPBMC_010923	1-9-23	1305	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3	EPBBC_010923	1-9-23	1030	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	EPBCC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	EPBLLC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
4	EPBMC_011023	1-10-23	1100	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
									1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to km filer@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich AP@haleyaldrich.com Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.01 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No. | Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:

Relinquished by: Michelle Dallaloh	Company: H&A	Date/Time: 1/11/23 1400	Received by: EC	EC	Date/Time: 1/11/23 1400
Relinquished by:	Company: EC	Date/Time: 1/11/23 1910	Received by:		Date/Time: 1/11/23 1910
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 2.1/2.1 1.8/1.8 SCII

SAP COC 2019/2020 VERSION 3

Dated 1/8/2016

570-123671 Chain of Custody

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s).	COC No. 570-203935 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin. California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North ,	Due Date Requested 1/23/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G Amchlor, H - Ascorbic Acid, I Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PrecSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_011023 (570-123671-2)	1/9/23	13 05 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11 00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/12/23 1303	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-203935 2
Client Contact: Shipping/Receiving	Phone.	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North ,	Due Date Requested: 1/23/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/ProcSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906 0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBMC_011023 (570-123671-2)	1/9/23	13 05 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10 30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11 00 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1303				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PreoSop_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PreoSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PreoSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/12/23 1303				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203935 2
Client Contact: Shipping/Receiving	Phone.	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PreSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906 0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_011023 (570-123671-1)	1/10/23	09 30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1303				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals BMP Performance

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the BMP Performance program starting from data collected October 1st, 2022.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/23/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PrecSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																			
EPBMC_011023 (570-123671-2)	1/9/23	13:05 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11:00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: FEDEX	Date/Time: 1/12/23 1303	Company	Received by: FEDEX	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: B Gonzalez	Date/Time: 1/13/23 9:00AM	Company ETA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact. Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/23/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCl; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	906_Sr90/PrecSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
Preservation Code:														
EPBMC_011023 (570-123671-2)	1/9/23	13:05 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11:00 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
														18

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FEDEX	1/12/23 1303		FEDEX		
2	Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 1/13/23 9:00 AM	Company ETAST L
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fil_Geo_0 K-40 and Ceslum-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fil_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PreSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
																				3+3=6	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/12/23 1303		FEDEX		
2	FEDEX			B Gonzalez	1/13/23 9:00 am	ESTL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitnc Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
														(9)

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: FED EX	Date/Time: 1/12/23 1303	Company	Received by: FED EX	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 1/13/23 9:00AM	Company ETAS TL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203974.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/23/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_011023 (570-123671-2)	1/9/23	13:05 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPBMC_011023 (570-123671-4)	1/10/23	11:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date: 01/12/23	Time:		Method of Shipment:		
Relinquished by:	Date/Time: 01/10/23 15:28	Company: EC	Received by:	Date/Time: 1.13.23 905	Company: [illegible]		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 4.5C				

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203974.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123671-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.5C

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203977.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123671-3
Address: 5755 8th Street East, ,	Due Date Requested: 1/27/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
[signature]	01/12/23 15:03	FC	[signature]	1-13-23 0920	EET:NW

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 6.0°C w/o CF 0.3°C w/CF

6293 0824 6013 EFGS SC dia 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203977.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 5755 8th Street East, ,	Due Date Requested: 1/23/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X			X	
EPBMC_011023 (570-123671-2)	1/9/23	13:05 Pacific		Water			X	X	2	
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	2	
EPBMC_011023 (570-123671-4)	1/10/23	11:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	01/12/23 15:03	EC	[signature]	1-13-23 0920	EETNW

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2024 4/19/2023 (Rev. 2)

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123671-1

Login Number: 123671
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123671-1

Login Number: 123671
List Number: 3
Creator: LaCount, Lilly-Anna E

List Source: Eurofins Seattle
List Creation: 01/13/23 01:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123671-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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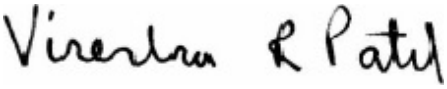

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Revision 1

Authorized for release by
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123671-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123671-2

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 2/2/2023. The report (revision 1) is being revised due to: The sample IDs were updated to match the COC for sample #2 and #3. Revised PDF and EDD files were issued..

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

Dioxin
Method 1613B: The laboratory control sample (LCS) for preparation batch 320-647614 and analytical batch 320-649121 recovered outside control limits for 1,2,3,7,8,9-HxCDD. This analyte was biased high in the LCS and not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-2

Client Sample ID: EPBLLC_011023 — Lab Sample ID: 570-123671-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.00000022	J,DX q	0.000049	0.000000071	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000065	J,DX MB	0.000049	0.0000024	ug/L	1		1613B	Total/NA
OCDD	0.000097	J,DX MB	0.000097	0.0000067	ug/L	1		1613B	Total/NA
OCDF	0.0000025	J,DX q MB	0.000097	0.0000033	ug/L	1		1613B	Total/NA
Total PeCDF	0.00000022	J,DX q MB	0.000049	0.000000071	ug/L	1		1613B	Total/NA
Total HpCDD	0.000013	J,DX MB	0.000049	0.0000024	ug/L	1		1613B	Total/NA

Client Sample ID: EPBMC_010923 — Lab Sample ID: 570-123671-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	0.0000081	J,DX MB	0.000048	0.0000051	ug/L	1		1613B	Total/NA
OCDD	0.00017	MB	0.000097	0.0000017	ug/L	1		1613B	Total/NA
OCDF	0.0000041	J,DX MB q	0.000097	0.0000074	ug/L	1		1613B	Total/NA
Total HpCDD	0.000014	J,DX MB q	0.000048	0.0000051	ug/L	1		1613B	Total/NA

Client Sample ID: EPBBC_010923 — Lab Sample ID: 570-123671-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	0.000050	MB	0.000049	0.0000065	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000021	J,DX MB	0.000049	0.0000092	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000014	J,DX MB q	0.000049	0.0000068	ug/L	1		1613B	Total/NA
OCDD	0.00062	MB	0.000098	0.0000016	ug/L	1		1613B	Total/NA
OCDF	0.000063	J,DX MB	0.000098	0.0000084	ug/L	1		1613B	Total/NA
Total HpCDD	0.00012	MB	0.000049	0.0000065	ug/L	1		1613B	Total/NA
Total HpCDF	0.000055	J,DX MB q	0.000049	0.0000068	ug/L	1		1613B	Total/NA

Client Sample ID: EPBMC_011023 — Lab Sample ID: 570-123671-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	0.0000029	J,DX q MB	0.000051	0.0000030	ug/L	1		1613B	Total/NA
OCDD	0.000054	J,DX MB	0.00010	0.0000098	ug/L	1		1613B	Total/NA
OCDF	0.0000031	J,DX q MB	0.00010	0.0000037	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000079	J,DX q MB	0.000051	0.0000030	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000097	0.00000041	ug/L		01/17/23 15:44	01/26/23 00:41	1
2,3,7,8-TCDF	ND		0.0000097	0.00000017	ug/L		01/17/23 15:44	01/26/23 00:41	1
1,2,3,7,8-PeCDD	ND		0.000049	0.00000020	ug/L		01/17/23 15:44	01/26/23 00:41	1
1,2,3,7,8-PeCDF	**0.00000022**	**J,DX q**	0.000049	0.00000071	ug/L		01/17/23 15:44	01/26/23 00:41	1
2,3,4,7,8-PeCDF	ND		0.000049	0.00000011	ug/L		01/17/23 15:44	01/26/23 00:41	1
1,2,3,4,7,8-HxCDD	ND		0.000049	0.00000027	ug/L		01/17/23 15:44	01/26/23 00:41	1
1,2,3,6,7,8-HxCDD	ND		0.000049	0.00000029	ug/L		01/17/23 15:44	01/26/23 00:41	1
1,2,3,7,8,9-HxCDD	ND	LQ	0.000049	0.00000025	ug/L		01/17/23 15:44	01/26/23 00:41	1
1,2,3,4,7,8-HxCDF	ND		0.000049	0.00000012	ug/L		01/17/23 15:44	01/26/23 00:41	1
1,2,3,6,7,8-HxCDF	ND		0.000049	0.00000011	ug/L		01/17/23 15:44	01/26/23 00:41	1
1,2,3,7,8,9-HxCDF	ND		0.000049	0.00000053	ug/L		01/17/23 15:44	01/26/23 00:41	1
2,3,4,6,7,8-HxCDF	ND		0.000049	0.00000056	ug/L		01/17/23 15:44	01/26/23 00:41	1
1,2,3,4,6,7,8-HpCDD	**0.0000065**	**J,DX MB**	0.000049	0.00000024	ug/L		01/17/23 15:44	01/26/23 00:41	1
1,2,3,4,6,7,8-HpCDF	ND		0.000049	0.00000062	ug/L		01/17/23 15:44	01/26/23 00:41	1
1,2,3,4,7,8,9-HpCDF	ND		0.000049	0.00000034	ug/L		01/17/23 15:44	01/26/23 00:41	1
OCDD	**0.000097**	**J,DX MB**	0.000097	0.00000067	ug/L		01/17/23 15:44	01/26/23 00:41	1
OCDF	**0.0000025**	**J,DX q MB**	0.000097	0.00000033	ug/L		01/17/23 15:44	01/26/23 00:41	1
Total TCDD	ND		0.0000097	0.00000041	ug/L		01/17/23 15:44	01/26/23 00:41	1
Total TCDF	ND		0.0000097	0.00000017	ug/L		01/17/23 15:44	01/26/23 00:41	1
Total PeCDD	ND		0.000049	0.00000020	ug/L		01/17/23 15:44	01/26/23 00:41	1
Total PeCDF	**0.00000022**	**J,DX q MB**	0.000049	0.00000071	ug/L		01/17/23 15:44	01/26/23 00:41	1
Total HxCDD	ND		0.000049	0.00000025	ug/L		01/17/23 15:44	01/26/23 00:41	1
Total HxCDF	ND		0.000049	0.00000053	ug/L		01/17/23 15:44	01/26/23 00:41	1
Total HpCDD	**0.000013**	**J,DX MB**	0.000049	0.00000024	ug/L		01/17/23 15:44	01/26/23 00:41	1
Total HpCDF	ND		0.000049	0.00000034	ug/L		01/17/23 15:44	01/26/23 00:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*01/17/23 15:44*	*01/26/23 00:41*	*1*
13C-2,3,7,8-TCDF	*54*		*24 - 169*	*01/17/23 15:44*	*01/26/23 00:41*	*1*
13C-1,2,3,7,8-PeCDD	*54*		*25 - 181*	*01/17/23 15:44*	*01/26/23 00:41*	*1*
13C-1,2,3,7,8-PeCDF	*58*		*24 - 185*	*01/17/23 15:44*	*01/26/23 00:41*	*1*
13C-2,3,4,7,8-PeCDF	*42*		*21 - 178*	*01/17/23 15:44*	*01/26/23 00:41*	*1*
13C-1,2,3,4,7,8-HxCDD	*38*		*32 - 141*	*01/17/23 15:44*	*01/26/23 00:41*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	34		28 - 130	01/17/23 15:44	01/26/23 00:41	1
13C-1,2,3,4,7,8-HxCDF	32		26 - 152	01/17/23 15:44	01/26/23 00:41	1
13C-1,2,3,6,7,8-HxCDF	36		26 - 123	01/17/23 15:44	01/26/23 00:41	1
13C-1,2,3,7,8,9-HxCDF	77		29 - 147	01/17/23 15:44	01/26/23 00:41	1
13C-2,3,4,6,7,8-HxCDF	70		28 - 136	01/17/23 15:44	01/26/23 00:41	1
13C-1,2,3,4,6,7,8-HpCDD	74		23 - 140	01/17/23 15:44	01/26/23 00:41	1
13C-1,2,3,4,6,7,8-HpCDF	38		28 - 143	01/17/23 15:44	01/26/23 00:41	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	01/17/23 15:44	01/26/23 00:41	1
13C-OCDD	75		17 - 157	01/17/23 15:44	01/26/23 00:41	1
13C-OCDF	85		17 - 157	01/17/23 15:44	01/26/23 00:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	70		35 - 197	01/17/23 15:44	01/26/23 00:41	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000097	0.00000045	ug/L		01/17/23 13:28	01/25/23 22:17	1
2,3,7,8-TCDF	ND		0.0000097	0.000000033	ug/L		01/17/23 13:28	01/25/23 22:17	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000028	ug/L		01/17/23 13:28	01/25/23 22:17	1
1,2,3,7,8-PeCDF	ND		0.000048	0.00000012	ug/L		01/17/23 13:28	01/25/23 22:17	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000016	ug/L		01/17/23 13:28	01/25/23 22:17	1
1,2,3,4,7,8-HxCDD	ND		0.000048	0.00000035	ug/L		01/17/23 13:28	01/25/23 22:17	1
1,2,3,6,7,8-HxCDD	ND		0.000048	0.00000039	ug/L		01/17/23 13:28	01/25/23 22:17	1
1,2,3,7,8,9-HxCDD	ND	LQ	0.000048	0.00000033	ug/L		01/17/23 13:28	01/25/23 22:17	1
1,2,3,4,7,8-HxCDF	ND		0.000048	0.00000041	ug/L		01/17/23 13:28	01/25/23 22:17	1
1,2,3,6,7,8-HxCDF	ND		0.000048	0.00000036	ug/L		01/17/23 13:28	01/25/23 22:17	1
1,2,3,7,8,9-HxCDF	ND		0.000048	0.00000024	ug/L		01/17/23 13:28	01/25/23 22:17	1
2,3,4,6,7,8-HxCDF	ND		0.000048	0.00000022	ug/L		01/17/23 13:28	01/25/23 22:17	1
1,2,3,4,6,7,8-HpCDD	**0.0000081**	**J,DX MB**	0.000048	0.00000051	ug/L		01/17/23 13:28	01/25/23 22:17	1
1,2,3,4,6,7,8-HpCDF	ND		0.000048	0.00000061	ug/L		01/17/23 13:28	01/25/23 22:17	1
1,2,3,4,7,8,9-HpCDF	ND		0.000048	0.00000045	ug/L		01/17/23 13:28	01/25/23 22:17	1
OCDD	**0.00017**	**MB**	0.000097	0.0000017	ug/L		01/17/23 13:28	01/25/23 22:17	1
OCDF	**0.0000041**	**J,DX MB q**	0.000097	0.00000074	ug/L		01/17/23 13:28	01/25/23 22:17	1
Total TCDD	ND		0.0000097	0.00000045	ug/L		01/17/23 13:28	01/25/23 22:17	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDF	ND		0.0000097	0.000000033	ug/L		01/17/23 13:28	01/25/23 22:17	1
Total PeCDD	ND		0.000048	0.00000028	ug/L		01/17/23 13:28	01/25/23 22:17	1
Total PeCDF	ND		0.000048	0.00000012	ug/L		01/17/23 13:28	01/25/23 22:17	1
Total HxCDD	ND		0.000048	0.00000033	ug/L		01/17/23 13:28	01/25/23 22:17	1
Total HxCDF	ND		0.000048	0.00000022	ug/L		01/17/23 13:28	01/25/23 22:17	1
Total HpCDD	**0.000014**	**J,DX MB q**	0.000048	0.00000051	ug/L		01/17/23 13:28	01/25/23 22:17	1
Total HpCDF	ND		0.000048	0.00000045	ug/L		01/17/23 13:28	01/25/23 22:17	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*68*		*25 - 164*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-1,2,3,7,8-PeCDD	*64*		*25 - 181*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-1,2,3,7,8-PeCDF	*71*		*24 - 185*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-2,3,4,7,8-PeCDF	*61*		*21 - 178*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-1,2,3,4,7,8-HxCDD	*58*		*32 - 141*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-1,2,3,6,7,8-HxCDD	*55*		*28 - 130*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-1,2,3,4,7,8-HxCDF	*51*		*26 - 152*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-1,2,3,6,7,8-HxCDF	*58*		*26 - 123*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-1,2,3,7,8,9-HxCDF	*85*		*29 - 147*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-2,3,4,6,7,8-HxCDF	*93*		*28 - 136*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*89*		*23 - 140*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*56*		*28 - 143*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*88*		*26 - 138*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-OCDD	*78*		*17 - 157*	*01/17/23 13:28*	*01/25/23 22:17*	*1*
13C-OCDF	*87*		*17 - 157*	*01/17/23 13:28*	*01/25/23 22:17*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*82*		*35 - 197*	*01/17/23 13:28*	*01/25/23 22:17*	*1*

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000098	0.00000039	ug/L		01/17/23 13:28	01/25/23 23:05	1
2,3,7,8-TCDF	ND		0.0000098	0.00000056	ug/L		01/17/23 13:28	01/25/23 23:05	1
1,2,3,7,8-PeCDD	ND		0.000049	0.00000031	ug/L		01/17/23 13:28	01/25/23 23:05	1
1,2,3,7,8-PeCDF	ND		0.000049	0.00000011	ug/L		01/17/23 13:28	01/25/23 23:05	1
2,3,4,7,8-PeCDF	ND		0.000049	0.00000016	ug/L		01/17/23 13:28	01/25/23 23:05	1
1,2,3,4,7,8-HxCDD	ND		0.000049	0.00000039	ug/L		01/17/23 13:28	01/25/23 23:05	1
1,2,3,6,7,8-HxCDD	ND		0.000049	0.00000044	ug/L		01/17/23 13:28	01/25/23 23:05	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8,9-HxCDD	ND	LQ	0.000049	0.00000038	ug/L		01/17/23 13:28	01/25/23 23:05	1
1,2,3,4,7,8-HxCDF	ND		0.000049	0.00000052	ug/L		01/17/23 13:28	01/25/23 23:05	1
1,2,3,6,7,8-HxCDF	ND		0.000049	0.00000049	ug/L		01/17/23 13:28	01/25/23 23:05	1
1,2,3,7,8,9-HxCDF	ND		0.000049	0.00000032	ug/L		01/17/23 13:28	01/25/23 23:05	1
2,3,4,6,7,8-HxCDF	ND		0.000049	0.00000029	ug/L		01/17/23 13:28	01/25/23 23:05	1
1,2,3,4,6,7,8-HpCDD	**0.000050**	**MB**	0.000049	0.00000065	ug/L		01/17/23 13:28	01/25/23 23:05	1
1,2,3,4,6,7,8-HpCDF	**0.000021**	**J,DX MB**	0.000049	0.00000092	ug/L		01/17/23 13:28	01/25/23 23:05	1
1,2,3,4,7,8,9-HpCDF	**0.0000014**	**J,DX MB q**	0.000049	0.00000068	ug/L		01/17/23 13:28	01/25/23 23:05	1
OCDD	**0.00062**	**MB**	0.000098	0.0000016	ug/L		01/17/23 13:28	01/25/23 23:05	1
OCDF	**0.000063**	**J,DX MB**	0.000098	0.00000084	ug/L		01/17/23 13:28	01/25/23 23:05	1
Total TCDD	ND		0.0000098	0.00000039	ug/L		01/17/23 13:28	01/25/23 23:05	1
Total TCDF	ND		0.0000098	0.0000000056	ug/L		01/17/23 13:28	01/25/23 23:05	1
Total PeCDD	ND		0.000049	0.00000031	ug/L		01/17/23 13:28	01/25/23 23:05	1
Total PeCDF	ND		0.000049	0.00000011	ug/L		01/17/23 13:28	01/25/23 23:05	1
Total HxCDD	ND		0.000049	0.00000038	ug/L		01/17/23 13:28	01/25/23 23:05	1
Total HxCDF	ND		0.000049	0.00000029	ug/L		01/17/23 13:28	01/25/23 23:05	1
Total HpCDD	**0.00012**	**MB**	0.000049	0.00000065	ug/L		01/17/23 13:28	01/25/23 23:05	1
Total HpCDF	**0.000055**	**J,DX MB q**	0.000049	0.00000068	ug/L		01/17/23 13:28	01/25/23 23:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*67*		*25 - 164*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-2,3,7,8-TCDF	*60*		*24 - 169*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-1,2,3,7,8-PeCDD	*64*		*25 - 181*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-1,2,3,7,8-PeCDF	*68*		*24 - 185*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-2,3,4,7,8-PeCDF	*55*		*21 - 178*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-1,2,3,4,7,8-HxCDD	*55*		*32 - 141*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-1,2,3,6,7,8-HxCDD	*52*		*28 - 130*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-1,2,3,4,7,8-HxCDF	*51*		*26 - 152*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-1,2,3,6,7,8-HxCDF	*56*		*26 - 123*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-1,2,3,7,8,9-HxCDF	*85*		*29 - 147*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-2,3,4,6,7,8-HxCDF	*89*		*28 - 136*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*83*		*23 - 140*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*52*		*28 - 143*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*83*		*26 - 138*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-OCDD	*71*		*17 - 157*	*01/17/23 13:28*	*01/25/23 23:05*	*1*
13C-OCDF	*78*		*17 - 157*	*01/17/23 13:28*	*01/25/23 23:05*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	*83*		*35 - 197*	*01/17/23 13:28*	*01/25/23 23:05*	*1*

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000038	ug/L		01/17/23 13:28	01/25/23 23:53	1
2,3,7,8-TCDF	ND		0.000010	0.00000061	ug/L		01/17/23 13:28	01/25/23 23:53	1
1,2,3,7,8-PeCDD	ND		0.000051	0.00000019	ug/L		01/17/23 13:28	01/25/23 23:53	1
1,2,3,7,8-PeCDF	ND		0.000051	0.00000098	ug/L		01/17/23 13:28	01/25/23 23:53	1
2,3,4,7,8-PeCDF	ND		0.000051	0.00000014	ug/L		01/17/23 13:28	01/25/23 23:53	1
1,2,3,4,7,8-HxCDD	ND		0.000051	0.00000016	ug/L		01/17/23 13:28	01/25/23 23:53	1
1,2,3,6,7,8-HxCDD	ND		0.000051	0.00000017	ug/L		01/17/23 13:28	01/25/23 23:53	1
1,2,3,7,8,9-HxCDD	ND	LQ	0.000051	0.00000015	ug/L		01/17/23 13:28	01/25/23 23:53	1
1,2,3,4,7,8-HxCDF	ND		0.000051	0.00000031	ug/L		01/17/23 13:28	01/25/23 23:53	1
1,2,3,6,7,8-HxCDF	ND		0.000051	0.00000028	ug/L		01/17/23 13:28	01/25/23 23:53	1
1,2,3,7,8,9-HxCDF	ND		0.000051	0.00000014	ug/L		01/17/23 13:28	01/25/23 23:53	1
2,3,4,6,7,8-HxCDF	ND		0.000051	0.00000015	ug/L		01/17/23 13:28	01/25/23 23:53	1
1,2,3,4,6,7,8-HpCDD	**0.0000029**	**J,DX q MB**	0.000051	0.00000030	ug/L		01/17/23 13:28	01/25/23 23:53	1
1,2,3,4,6,7,8-HpCDF	ND		0.000051	0.00000070	ug/L		01/17/23 13:28	01/25/23 23:53	1
1,2,3,4,7,8,9-HpCDF	ND		0.000051	0.00000039	ug/L		01/17/23 13:28	01/25/23 23:53	1
OCDD	**0.000054**	**J,DX MB**	0.00010	0.00000098	ug/L		01/17/23 13:28	01/25/23 23:53	1
OCDF	**0.0000031**	**J,DX q MB**	0.00010	0.00000037	ug/L		01/17/23 13:28	01/25/23 23:53	1
Total TCDD	ND		0.000010	0.00000038	ug/L		01/17/23 13:28	01/25/23 23:53	1
Total TCDF	ND		0.000010	0.00000061	ug/L		01/17/23 13:28	01/25/23 23:53	1
Total PeCDD	ND		0.000051	0.00000019	ug/L		01/17/23 13:28	01/25/23 23:53	1
Total PeCDF	ND		0.000051	0.00000098	ug/L		01/17/23 13:28	01/25/23 23:53	1
Total HxCDD	ND		0.000051	0.00000015	ug/L		01/17/23 13:28	01/25/23 23:53	1
Total HxCDF	ND		0.000051	0.00000014	ug/L		01/17/23 13:28	01/25/23 23:53	1
Total HpCDD	**0.0000079**	**J,DX q MB**	0.000051	0.00000030	ug/L		01/17/23 13:28	01/25/23 23:53	1
Total HpCDF	ND		0.000051	0.00000039	ug/L		01/17/23 13:28	01/25/23 23:53	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	*54*		*25 - 164*	*01/17/23 13:28*	*01/25/23 23:53*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBMC_011023
Lab Sample ID: 570-123671-4
Date Collected: 01/10/23 11:00
Matrix: Water
Date Received: 01/11/23 19:10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	48		24 - 169	01/17/23 13:28	01/25/23 23:53	1
13C-1,2,3,7,8-PeCDD	48		25 - 181	01/17/23 13:28	01/25/23 23:53	1
13C-1,2,3,7,8-PeCDF	48		24 - 185	01/17/23 13:28	01/25/23 23:53	1
13C-2,3,4,7,8-PeCDF	37		21 - 178	01/17/23 13:28	01/25/23 23:53	1
13C-1,2,3,4,7,8-HxCDD	35		32 - 141	01/17/23 13:28	01/25/23 23:53	1
13C-1,2,3,6,7,8-HxCDD	34		28 - 130	01/17/23 13:28	01/25/23 23:53	1
13C-1,2,3,4,7,8-HxCDF	31		26 - 152	01/17/23 13:28	01/25/23 23:53	1
13C-1,2,3,6,7,8-HxCDF	36		26 - 123	01/17/23 13:28	01/25/23 23:53	1
13C-1,2,3,7,8,9-HxCDF	71		29 - 147	01/17/23 13:28	01/25/23 23:53	1
13C-2,3,4,6,7,8-HxCDF	65		28 - 136	01/17/23 13:28	01/25/23 23:53	1
13C-1,2,3,4,6,7,8-HpCDD	66		23 - 140	01/17/23 13:28	01/25/23 23:53	1
13C-1,2,3,4,6,7,8-HpCDF	34		28 - 143	01/17/23 13:28	01/25/23 23:53	1
13C-1,2,3,4,7,8,9-HpCDF	73		26 - 138	01/17/23 13:28	01/25/23 23:53	1
13C-OCDD	64		17 - 157	01/17/23 13:28	01/25/23 23:53	1
13C-OCDF	74		17 - 157	01/17/23 13:28	01/25/23 23:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	73		35 - 197	01/17/23 13:28	01/25/23 23:53	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-123671-1	EPBLLC_011023	70
570-123671-2	EPBMC_010923	82
570-123671-3	EPBBC_010923	83
570-123671-4	EPBMC_011023	73
MB 320-647614/1-A	Method Blank	79

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-647614/2-A	Lab Control Sample	80

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water | **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-123671-1	EPBLLC_011023	60	54	54	58	42	38	34	32
570-123671-2	EPBMC_010923	68	61	64	71	61	58	55	51
570-123671-3	EPBBC_010923	67	60	64	68	55	55	52	51
570-123671-4	EPBMC_011023	54	48	48	48	37	35	34	31
MB 320-647614/1-A	Method Blank	63	55	53	58	44	42	39	39

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-123671-1	EPBLLC_011023	36	77	70	74	38	81	75	85
570-123671-2	EPBMC_010923	58	85	93	89	56	88	78	87
570-123671-3	EPBBC_010923	56	85	89	83	52	83	71	78
570-123671-4	EPBMC_011023	36	71	65	66	34	73	64	74
MB 320-647614/1-A	Method Blank	42	74	77	74	44	75	65	70

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water | **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-647614/2-A	Lab Control Sample	61	56	56	60	41	40	37	33

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-647614/2-A	Lab Control Sample	38	78	80	78	40	79	70	76

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-2

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-647614/1-A
Matrix: Water
Analysis Batch: 649121

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 647614

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000034	ug/L		01/17/23 13:28	01/25/23 05:08	1
2,3,7,8-TCDF	ND		0.000010	0.00000018	ug/L		01/17/23 13:28	01/25/23 05:08	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000040	ug/L		01/17/23 13:28	01/25/23 05:08	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000022	ug/L		01/17/23 13:28	01/25/23 05:08	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000030	ug/L		01/17/23 13:28	01/25/23 05:08	1
1,2,3,4,7,8-HxCDD	0.00000328	J,DX	0.000050	0.00000043	ug/L		01/17/23 13:28	01/25/23 05:08	1
1,2,3,6,7,8-HxCDD	0.00000126	J,DX	0.000050	0.00000050	ug/L		01/17/23 13:28	01/25/23 05:08	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000042	ug/L		01/17/23 13:28	01/25/23 05:08	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000048	ug/L		01/17/23 13:28	01/25/23 05:08	1
1,2,3,6,7,8-HxCDF	0.00000132	J,DX q	0.000050	0.00000044	ug/L		01/17/23 13:28	01/25/23 05:08	1
1,2,3,7,8,9-HxCDF	0.00000284	J,DX	0.000050	0.00000026	ug/L		01/17/23 13:28	01/25/23 05:08	1
2,3,4,6,7,8-HxCDF	0.000000712	J,DX q	0.000050	0.00000024	ug/L		01/17/23 13:28	01/25/23 05:08	1
1,2,3,4,6,7,8-HpCDD	0.00000973	J,DX	0.000050	0.00000029	ug/L		01/17/23 13:28	01/25/23 05:08	1
1,2,3,4,6,7,8-HpCDF	0.0000103	J,DX q	0.000050	0.00000041	ug/L		01/17/23 13:28	01/25/23 05:08	1
1,2,3,4,7,8,9-HpCDF	0.00000660	J,DX	0.000050	0.00000028	ug/L		01/17/23 13:28	01/25/23 05:08	1
OCDD	0.0000439	J,DX	0.00010	0.00000047	ug/L		01/17/23 13:28	01/25/23 05:08	1
OCDF	0.00000692	J,DX	0.00010	0.00000029	ug/L		01/17/23 13:28	01/25/23 05:08	1
Total TCDD	ND		0.000010	0.00000034	ug/L		01/17/23 13:28	01/25/23 05:08	1
Total TCDF	ND		0.000010	0.00000018	ug/L		01/17/23 13:28	01/25/23 05:08	1
Total PeCDD	ND		0.000050	0.00000040	ug/L		01/17/23 13:28	01/25/23 05:08	1
Total PeCDF	0.000000790	J,DX	0.000050	0.00000022	ug/L		01/17/23 13:28	01/25/23 05:08	1
Total HxCDD	0.00000454	J,DX	0.000050	0.00000042	ug/L		01/17/23 13:28	01/25/23 05:08	1
Total HxCDF	0.00000488	J,DX q	0.000050	0.00000024	ug/L		01/17/23 13:28	01/25/23 05:08	1
Total HpCDD	0.0000176	J,DX	0.000050	0.00000029	ug/L		01/17/23 13:28	01/25/23 05:08	1
Total HpCDF	0.0000175	J,DX q	0.000050	0.00000028	ug/L		01/17/23 13:28	01/25/23 05:08	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*63*		*25 - 164*	*01/17/23 13:28*	*01/25/23 05:08*	*1*
13C-2,3,7,8-TCDF	*55*		*24 - 169*	*01/17/23 13:28*	*01/25/23 05:08*	*1*
13C-1,2,3,7,8-PeCDD	*53*		*25 - 181*	*01/17/23 13:28*	*01/25/23 05:08*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-647614/1-A
Matrix: Water
Analysis Batch: 649121

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 647614

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	58		24 - 185	01/17/23 13:28	01/25/23 05:08	1
13C-2,3,4,7,8-PeCDF	44		21 - 178	01/17/23 13:28	01/25/23 05:08	1
13C-1,2,3,4,7,8-HxCDD	42		32 - 141	01/17/23 13:28	01/25/23 05:08	1
13C-1,2,3,6,7,8-HxCDD	39		28 - 130	01/17/23 13:28	01/25/23 05:08	1
13C-1,2,3,4,7,8-HxCDF	39		26 - 152	01/17/23 13:28	01/25/23 05:08	1
13C-1,2,3,6,7,8-HxCDF	42		26 - 123	01/17/23 13:28	01/25/23 05:08	1
13C-1,2,3,7,8,9-HxCDF	74		29 - 147	01/17/23 13:28	01/25/23 05:08	1
13C-2,3,4,6,7,8-HxCDF	77		28 - 136	01/17/23 13:28	01/25/23 05:08	1
13C-1,2,3,4,6,7,8-HpCDD	74		23 - 140	01/17/23 13:28	01/25/23 05:08	1
13C-1,2,3,4,6,7,8-HpCDF	44		28 - 143	01/17/23 13:28	01/25/23 05:08	1
13C-1,2,3,4,7,8,9-HpCDF	75		26 - 138	01/17/23 13:28	01/25/23 05:08	1
13C-OCDD	65		17 - 157	01/17/23 13:28	01/25/23 05:08	1
13C-OCDF	70		17 - 157	01/17/23 13:28	01/25/23 05:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	79		35 - 197	01/17/23 13:28	01/25/23 05:08	1

Lab Sample ID: LCS 320-647614/2-A
Matrix: Water
Analysis Batch: 649121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 647614

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000236		ug/L		118	67 - 158		
2,3,7,8-TCDF			0.000200	0.000256		ug/L		128	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000941		ug/L		94	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000934		ug/L		93	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000959		ug/L		96	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000899		ug/L		90	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00120		ug/L		120	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.00202	LQ	ug/L		202	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000968		ug/L		97	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.00100		ug/L		100	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.00102		ug/L		102	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000986		ug/L		99	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000933		ug/L		93	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00109		ug/L		109	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000945		ug/L		94	78 - 138		
OCDD			0.00200	0.00242		ug/L		121	78 - 144		
OCDF			0.00200	0.00207		ug/L		103	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	61		20 - 175
13C-2,3,7,8-TCDF	56		22 - 152
13C-1,2,3,7,8-PeCDD	56		21 - 227
13C-1,2,3,7,8-PeCDF	60		21 - 192
13C-2,3,4,7,8-PeCDF	41		13 - 328
13C-1,2,3,4,7,8-HxCDD	40		21 - 193
13C-1,2,3,6,7,8-HxCDD	37		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-647614/2-A
Matrix: Water
Analysis Batch: 649121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 647614

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	33		19 - 202
13C-1,2,3,6,7,8-HxCDF	38		21 - 159
13C-1,2,3,7,8,9-HxCDF	78		17 - 205
13C-2,3,4,6,7,8-HxCDF	80		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	78		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	40		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	70		13 - 199
13C-OCDF	76		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	80		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-2

Specialty Organics

Prep Batch: 647614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	1613B	
570-123671-2	EPBMC_010923	Total/NA	Water	1613B	
570-123671-3	EPBBC_010923	Total/NA	Water	1613B	
570-123671-4	EPBMC_011023	Total/NA	Water	1613B	
MB 320-647614/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-647614/2-A	Lab Control Sample	Total/NA	Water	1613B	

Analysis Batch: 649121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-647614/1-A	Method Blank	Total/NA	Water	1613B	647614
LCS 320-647614/2-A	Lab Control Sample	Total/NA	Water	1613B	647614

Analysis Batch: 649305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	1613B	647614
570-123671-2	EPBMC_010923	Total/NA	Water	1613B	647614
570-123671-3	EPBBC_010923	Total/NA	Water	1613B	647614
570-123671-4	EPBMC_011023	Total/NA	Water	1613B	647614

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-2

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1028.6 mL	20.0 uL	647614	01/17/23 15:44	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	649305	01/26/23 00:41	GRB	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1035.8 mL	20.0 uL	647614	01/17/23 13:28	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	649305	01/25/23 22:17	GRB	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1017.6 mL	20.0 uL	647614	01/17/23 13:28	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	649305	01/25/23 23:05	GRB	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			983.6 mL	20.0 uL	647614	01/17/23 13:28	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	649305	01/25/23 23:53	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-2

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-23
Hawaii	State	<cert No.>	01-29-23
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123671-1	EPBLLC_011023	Water	01/10/23 09:30	01/11/23 19:10
570-123671-2	EPBMC_010923	Water	01/09/23 13:05	01/11/23 19:10
570-123671-3	EPBBC_010923	Water	01/09/23 10:30	01/11/23 19:10
570-123671-4	EPBMC_011023	Water	01/10/23 11:00	01/11/23 19:10

123671

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: 01/09/2023

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 01/10/2023	COC No: 1 of 1 COCs
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8605	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier Pick Up	Sampler: M - Dallaleh / J. Vanderwaal
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			For Lab Use Only:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(619) 280-9210 Phone	TAT if different from Below			Lab Sampling:
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-08	☐ 1 week			Job / SDG No.: 0129095-020-06
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			
H&A P O #	☐ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	3O4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn: – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
									2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must FITSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availab by only need to be partially filled to meet the volume requirement as stated here.
1	EPBLLC_011023	1-10-23	0930	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2	EPBMC_010923	1-9-23	1305	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3	EPBBC_010923	1-9-23	1030	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	[illegible]			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	[illegible]			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
4	EPBMC_011023	1-10-23	1100	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to km[illegible]filer@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich tAP@haleyaldrich.com Report Level II Data Packag[illegible] and provide EDD. All dissolved samples are to be [illegible]ted [illegible]ith n 24 hours of rece[illegible]pt, [illegible]ven those placed on hold. Low l[illegible]mits needed for Mercury (MDL 0.01 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No. | Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:

Relinquished by: Michelle Dallaleh	Company: H&A	Date/Time: 1/11/23 1400	Received by: [illegible]	EC	Date/Time: 1/11/23 1400
Relinquished by:	Company: EC	Date/Time: 1/11/23 1910	Received by:		Date/Time: 1/11/23 1910
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 2.1/2.1 1.8/1.8 SCII

SAP COC 2019/2020 VERSION 3

Dated 1/8/2016

570-123671 Chain of Custody

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s).	COC No. 570-203935 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin. California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North ,	Due Date Requested 1/23/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G Amchlor, H - Ascorbic Acid, I Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901 1_Cs/FIII_Geo_0 K-40 and Ceslum-137	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/FIII_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PreoSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PreoSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_011023 (570-123671-2)	1/9/23	13 05 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11 00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time: 1/12/23 1303	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-203935 2
Client Contact: Shipping/Receiving	Phone.	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North ,	Due Date Requested: 1/23/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:				
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/ProcSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906 0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBMC_011023 (570-123671-2)	1/9/23	13 05 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10 30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11 00 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1303				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PreoSop_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PreoSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PreoSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/12/23 1303				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203935 2
Client Contact: Shipping/Receiving	Phone.	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PreSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906 0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_011023 (570-123671-1)	1/10/23	09 30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/12/23 1303				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals BMP Performance

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the BMP Performance program starting from data collected October 1st, 2022.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203974.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/23/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_011023 (570-123671-2)	1/9/23	13:05 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPBMC_011023 (570-123671-4)	1/10/23	11:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date: 01/12/23	Time:		Method of Shipment:		
Relinquished by:	Date/Time: 01/10/23 15:28	Company: EC	Received by:	Date/Time: 1.13.23 905	Company: [illegible]		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company		

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.5C

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203974.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123671-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/27/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.5C

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123671-2

Login Number: 123671
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123671-2

Login Number: 123671
List Number: 4
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/13/23 02:43 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.5c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/1/2023 1:33:21 PM Revision 1

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123671-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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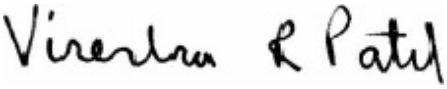
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123671-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123671-3

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 1/19/2023. The report (revision 1) is being revised due to: The sample IDs were updated to match the COC for sample #2 and #3. Revised PDF and EDD files were issued..

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-3

Client Sample ID: EPBLLC_011023

Lab Sample ID: 570-123671-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.051		0.0025	0.00040	ug/L	5		1631E	Total/NA
Mercury	0.0043		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-3

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.051		0.0025	0.00040	ug/L			01/16/23 16:30	5

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-3

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0043		0.00050	0.000079	ug/L			01/16/23 18:02	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-415608/20
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/16/23 13:28	1

Lab Sample ID: MB 580-415608/23
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/16/23 13:40	1

Lab Sample ID: MB 580-415608/24
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/16/23 13:44	1

Lab Sample ID: MB 580-415608/25
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/16/23 13:48	1

Lab Sample ID: MB 580-415608/33
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/16/23 14:26	1

Lab Sample ID: MB 580-415608/45
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/16/23 15:20	1

Lab Sample ID: LCS 580-415608/30
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00482		ug/L		96	77 - 123		

Lab Sample ID: LCS 580-415608/32
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00481		ug/L		96	77 - 123		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: LCSD 580-415608/31
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00502		ug/L		100	77 - 123	4	24

Lab Sample ID: LCSD 580-415608/34
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00482		ug/L		96	77 - 123	0	24

Lab Sample ID: 570-123564-A-2 MS
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.0077		0.0100	0.0177		ug/L		100	71 - 125		

Lab Sample ID: 570-123564-A-2 MSD
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0077		0.0100	0.0157		ug/L		80	71 - 125	12	24

Lab Sample ID: 570-123568-E-1 MS
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.010		0.0150	0.0230		ug/L		86	71 - 125		

Lab Sample ID: 570-123568-E-1 MSD
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.010		0.0150	0.0209		ug/L		72	71 - 125	9	24

Lab Sample ID: 570-123671-N-2 MS
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.0061		0.0100	0.0147		ug/L		86	71 - 125		

Lab Sample ID: 570-123671-N-2 MSD
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0061		0.0100	0.0141		ug/L		80	71 - 125	4	24

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-415335/1-A
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/16/23 13:53	1

Lab Sample ID: 570-123564-B-2-A MS
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.0045		0.00500	0.00891		ug/L		87	71 - 125		

Lab Sample ID: 570-123564-B-2-C MSD
Matrix: Water
Analysis Batch: 415608

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0045		0.00500	0.00948		ug/L		99	71 - 125	6	24

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-3

Metals

Filtration Batch: 415228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123564-B-2-A MS	Matrix Spike	Dissolved	Water	Filtration	
570-123564-B-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 415335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	Filtration	
MB 580-415335/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 415608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	1631E	415335
570-123671-1	EPBLLC_011023	Total/NA	Water	1631E	
MB 580-415335/1-A	Method Blank	Dissolved	Water	1631E	415335
MB 580-415608/20	Method Blank	Total/NA	Water	1631E	
MB 580-415608/23	Method Blank	Total/NA	Water	1631E	
MB 580-415608/24	Method Blank	Total/NA	Water	1631E	
MB 580-415608/25	Method Blank	Total/NA	Water	1631E	
MB 580-415608/33	Method Blank	Total/NA	Water	1631E	
MB 580-415608/45	Method Blank	Total/NA	Water	1631E	
LCS 580-415608/30	Lab Control Sample	Total/NA	Water	1631E	
LCS 580-415608/32	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-415608/31	Lab Control Sample Dup	Total/NA	Water	1631E	
LCSD 580-415608/34	Lab Control Sample Dup	Total/NA	Water	1631E	
570-123564-A-2 MS	Matrix Spike	Total/NA	Water	1631E	
570-123564-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
570-123564-B-2-A MS	Matrix Spike	Dissolved	Water	1631E	415228
570-123564-B-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	1631E	415228
570-123568-E-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-123568-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
570-123671-N-2 MS	Matrix Spike	Total/NA	Water	1631E	
570-123671-N-2 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-3

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415335	01/13/23 10:46	LEL	EET SEA
Dissolved	Analysis	1631E		1			415608	01/16/23 18:02	D1C	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		5			415608	01/16/23 16:30	D1C	EET SEA
	Instrument ID: 2600-4									

Laboratory References:
EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123671-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	01-24-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-3

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123671-1	EPBLLC_011023	Water	01/10/23 09:30	01/11/23 19:10

123671

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: 01/09/2023

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 01/10/2023	COC No: 1 of 1 COCs
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8605	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier Pick Up	Sampler: M - Dallaleh / J. Vanderwaal
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			For Lab Use Only:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(619) 280-9210 Phone	TAT if different from Below			Lab Sampling:
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number: 129095-010-001-08	☐ 1 week			Job / SDG No.: 0129095-020-06
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			
H&A P O #	☐ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn: – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
									2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must FILTSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availab by only need to be partially filled to meet the volume requirement as stated here.
1	EPBLLC_011023	1-10-23	0930	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2	EPBMC_010923	1-9-23	1305	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3	EPBBC_010923	1-9-23	1030	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	EPBCC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	EPBLVC_			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
4	EPBMC_011023	1-10-23	1100	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
									1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to km filer@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich AP@haleyaldrich.com Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.01 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No. | Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:

Relinquished by: Michelle Dallaleh	Company: H&A	Date/Time: 1/11/23 1400	Received by:	EC	Date/Time: 1/11/23 1400
Relinquished by:	Company: EC	Date/Time: 1/11/23 1910	Received by:		Date/Time: 1/11/23 1910
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 2.1/2.1 1.8/1.8 SCII

Dated 1/8/2016

SAP COC 2019/2020 VERSION 3

570-123671 Chain of Custody

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s).	COC No. 570-203935 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin. California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North ,	Due Date Requested 1/23/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G Amchlor, H - Ascorbic Acid, I Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PrecSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_011023 (570-123671-2)	1/9/23	13 05 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11 00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time: 1/12/23 1303	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No 570-203935 2
Client Contact: Shipping/Receiving	Phone.	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin. California	Page Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North ,	Due Date Requested 1/23/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/ProcSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906 0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBMC_011023 (570-123671-2)	1/9/23	13 05 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10 30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11 00 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date.	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/12/23 1303	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PreoSop_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PreoSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PreoSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/12/23 1303				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203935 2
Client Contact: Shipping/Receiving	Phone.	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PreSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906 0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_011023 (570-123671-1)	1/10/23	09 30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1303				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203977.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123671-3
Address: 5755 8th Street East, ,	Due Date Requested: 1/27/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
[signature]	01/12/23 15:03	FC	[signature]	1-13-23 0920	EET:NW

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 6.0°C w/o CF 0.3°C w/CF

6293 0824 6013

EFGS SC dia 4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203977.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 5755 8th Street East, ,	Due Date Requested: 1/23/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X			X	
EPBMC_011023 (570-123671-2)	1/9/23	13:05 Pacific		Water			X	X	2	
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	2	
EPBMC_011023 (570-123671-4)	1/10/23	11:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	01/12/23 15:03	EC	[signature]	1-13-23 0920	EETNW

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123671-3

Login Number: 123671
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123671-3

Login Number: 123671
List Number: 3
Creator: LaCount, Lilly-Anna E

List Source: Eurofins Seattle
List Creation: 01/13/23 01:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/1/2023 1:35:34 PM Revision 1

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123671-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

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Eurofins Calscience

Job Notes

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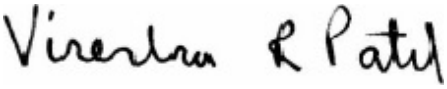
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-5

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123671-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123671-5

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 2/16/2023. The report (revision 1) is being revised due to: The sample IDs were updated to match the COC for sample #2 and #3. Revised PDF and EDD files were issued..

Receipt
The samples were received on 1/11/2023 7:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to be preserved to a pH of <2 SU. The following samples were received with insufficient preservation at a pH of >2 SU: EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4). 570-123671-T-1, T-2, T-3, and T-4. The samples were preserved to the appropriate pH in the laboratory.

RAD
Methods 900.0, 9310: Gross Alpha Beta prep batch 160-598184:

The detection goal was not met for the following sample(s). The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank achieved the detection goal demonstrating acceptable sample preparation and instrument performance: EPBMC_010923 (570-123671-2) . Analytical results are reported with the detection limit achieved.

Methods 900.0, 9310: Gross Alpha Prep batch 160-598184:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBMC_010923 (570-123671-2), (LCS 160-598184/2-A), (LCSB 160-598184/3-A), (MB 160-598184/1-A), (570-123671-T-2-M DU), (570-123671-T-2-K MS) and (570-123671-T-2-L MSBT)

Method 900.0: Gross Alpha and Gross Beta batch 598080
The detection goal was not met for the sample duplicate. However the purpose of the DUP is to demonstrate batch precision. The precision was within control limits demonstrating no adverse effect from the discrepancy.

(570-123671-U-3-R DU)

Method 900.0: Gross Alpha and Gross Beta batch 598080
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: EPBLLC_011023 (570-123671-1), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 598080
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (LCS 160-598080/2-A), (LCSB 160-598080/3-A), (MB 160-598080/1-A), (570-123671-U-3-R DU), (570-123671-U-3-P MS) and

Job ID: 570-123671-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

(570-123671-U-3-Q MSBT)

Method 901.1: Gamma Prep Batch 160-597241
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (570-123234-AI-1-D) and (570-123234-AI-1-E DU)

Method 901.1: Gamma prep batch 160-597546:

Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224

Job ID: 570-123671-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (LCS 160-597546/2-A), (MB 160-597546/1-A) and (570-123671-U-1-G DU)

Method 903.0: Radium-226 batch 598605
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (LCS 160-597154/2-A), (LCSD 160-597154/3-A) and (MB 160-597154/1-A)

Methods 903.0, 9315: Radium-226 batch 597771
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (LCS 160-597771/2-A), (MB 160-597771/1-A), (880-23869-B-2-A) and (880-23869-C-2-B DU)

Method 904.0: Radium-228 batch 597175
The LCS recovered at (126%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCSD 160-597175/3-A)

Method 904.0: Radium-228 batch 597175
The detection goal was not met for the following sample(s). Samples were prepped at a reduced volume due to the presence of matrix interferences: EPBLLC_011023 (570-123671-1), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 597175
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date
EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (LCS 160-597175/2-A), (LCSD 160-597175/3-A) and (MB 160-597175/1-A)

Methods 904.0, 9320: Radium-228 prep batch 160-597774:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (LCS 160-597774/2-A), (MB 160-597774/1-A), (880-23869-B-2-B) and

Job ID: 570-123671-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

(880-23869-C-2-C DU)

Method 905: Strontium-90 batch 597176
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (LCS 160-597176/2-A), (LCSD 160-597176/3-A) and (MB 160-597176/1-A)

Method 905: Strontium-90 batch 598093
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date
EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (LCS 160-598093/2-A), (LCSD 160-598093/3-A) and (MB 160-598093/1-A)

Method 906.0: Tritium 598269
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (LCS 160-598269/2-A), (MB 160-598269/1-A), (160-48571-B-3-A), (160-48571-B-3-B DU), (160-48571-B-5-A) and (160-48571-B-5-B MS)

Method A-01-R: Isotopic Uranium batch 597538
The detection goal was not met for the following sample(s). Sample were prepped at a reduced volume due to the presence of matrix interferences: EPBLLC_011023 (570-123671-1) and EPBMC_011023 (570-123671-4). Analytical results are reported with the detection limit achieved.

Methods A-01-R, U-02-RC: Isotopic Uranium batch 597538
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (LCS 160-597538/2-A), (MB 160-597538/1-A) and (570-123671-T-2-F DU)

Method A-01-R: Isotopic Uranium batch 598867
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3), EPBMC_011023 (570-123671-4), (LCS 160-597806/2-A), (MB 160-597806/1-A), (570-123902-K-2-B) and (570-123902-K-2-C DU)

Method ExtChrom: Uranium Prep Batch 160-597806:

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4).

Method ExtChrom: Uranium Prep Batch 160-597538

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBLLC_011023 (570-123671-1), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4).

Job ID: 570-123671-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method LSC_Dist_Susp:

Method PrecSep_0: Radium-228 Prep Batch 160-597175

The following samples were prepared at a reduced aliquot due to Matrix: EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2) and EPBBC_010923 (570-123671-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0:

Method PrecSep_0:

Method PrecSep-21: Radium-226 Prep Batch 160-597154

The following samples were prepared at a reduced aliquot due to Matrix: EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2) and EPBBC_010923 (570-123671-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21:

Method PrecSep-21:

Method PrecSep-7: Strontium-90 Prep Batch 160-597176

The following samples were prepared at a reduced aliquot due to Matrix: EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-597624

The following samples were prepared at a reduced aliquot due to Matrix: EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium 90 Prep Batch 160-598093

The following samples were prepared at a reduced aliquot due to Matrix: EPBLLC_011023 (570-123671-1), EPBMC_010923 (570-123671-2), EPBBC_010923 (570-123671-3) and EPBMC_011023 (570-123671-4). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7:

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-5

Client Sample ID: EPBLLC_011023 — Lab Sample ID: 570-123671-1

No Detections.

Client Sample ID: EPBMC_010923 — Lab Sample ID: 570-123671-2

No Detections.

Client Sample ID: EPBBC_010923 — Lab Sample ID: 570-123671-3

No Detections.

Client Sample ID: EPBMC_011023 — Lab Sample ID: 570-123671-4

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**136**	**G**	46.7	49.2	3.00	53.9	pCi/L	01/24/23 13:13	02/09/23 14:19	1
Gross Beta	**93.5**	**G**	19.0	21.1	4.00	21.2	pCi/L	01/24/23 13:13	02/09/23 14:19	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	3.06	U G	2.14	2.17	3.00	3.25	pCi/L	01/25/23 14:53	02/06/23 18:35	1
Gross Beta	**3.42**		0.834	0.902	4.00	0.956	pCi/L	01/25/23 14:53	02/06/23 18:35	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	3.95	U G	3.31	3.34	3.00	5.12	pCi/L	01/24/23 13:13	02/09/23 14:19	1
Gross Beta	**8.15**		1.75	1.93	4.00	1.98	pCi/L	01/24/23 13:13	02/09/23 14:19	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**61.1**	**G**	22.6	23.7	3.00	28.8	pCi/L	01/24/23 13:13	02/09/23 14:20	1
Gross Beta	**51.6**	**G**	10.7	11.9	4.00	11.4	pCi/L	01/24/23 13:13	02/09/23 14:20	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	6.88	U G	7.02	7.07	3.00	11.3	pCi/L	01/24/23 13:13	02/09/23 14:20	1
Gross Beta	**4.99**		2.23	2.29	4.00	3.14	pCi/L	01/24/23 13:13	02/09/23 14:20	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.824	U	1.20	1.21	3.00	2.05	pCi/L	01/24/23 13:13	02/09/23 14:20	1
Gross Beta	**2.37**		0.711	0.750	4.00	0.893	pCi/L	01/24/23 13:13	02/09/23 14:20	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.527	U	1.48	1.48	3.00	2.70	pCi/L	01/24/23 13:13	02/09/23 14:20	1
Gross Beta	**2.18**		0.704	0.737	4.00	0.908	pCi/L	01/24/23 13:13	02/09/23 14:20	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	2.61	U	1.97	1.99	3.00	2.98	pCi/L	01/24/23 13:13	02/09/23 14:20	1
Gross Beta	**1.94**		0.716	0.742	4.00	0.932	pCi/L	01/24/23 13:13	02/09/23 14:20	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.62	U	4.92	4.93	20.0	6.06	pCi/L	01/17/23 13:13	02/06/23 17:30	1
Potassium-40	-76.5	U	101	101		139	pCi/L	01/17/23 13:13	02/06/23 17:30	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.53	U	7.13	7.13	20.0	8.40	pCi/L	01/17/23 13:13	02/06/23 17:30	1
Potassium-40	**143**		45.2	48.3		26.4	pCi/L	01/17/23 13:13	02/06/23 17:30	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-3.21	U	8.59	8.60	20.0	10.4	pCi/L	01/17/23 13:13	02/06/23 20:18	1
Potassium-40	12.7	U	80.9	80.9		116	pCi/L	01/17/23 13:13	02/06/23 20:18	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.481	U	6.65	6.65	20.0	7.92	pCi/L	01/17/23 13:13	02/06/23 19:37	1
Potassium-40	6.82	U	105	105		107	pCi/L	01/17/23 13:13	02/06/23 19:37	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	4.23	U	7.96	7.98	20.0	9.73	pCi/L	01/19/23 14:55	02/10/23 13:09	1
Potassium-40	**99.7**		88.3	89.1		91.6	pCi/L	01/19/23 14:55	02/10/23 13:09	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	3.11	U	5.67	5.69	20.0	6.59	pCi/L	01/19/23 14:56	02/10/23 13:10	1
Potassium-40	**106**		38.0	40.0		25.1	pCi/L	01/19/23 14:56	02/10/23 13:10	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.11	U	6.70	6.71	20.0	7.96	pCi/L	01/19/23 14:56	02/10/23 13:11	1
Potassium-40	37.1	U	64.1	64.3		67.4	pCi/L	01/19/23 14:56	02/10/23 13:11	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.35	U	7.11	7.11	20.0	8.82	pCi/L	01/19/23 14:56	02/10/23 13:12	1
Potassium-40	21.9	U	82.0	82.0		116	pCi/L	01/19/23 14:56	02/10/23 13:12	1

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**1.63**		0.501	0.522	1.00	0.437	pCi/L	01/17/23 10:52	02/08/23 09:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.6*		*40 - 110*	*01/17/23 10:52*	*02/08/23 09:40*	*1*

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0647	U	0.0796	0.0798	1.00	0.131	pCi/L	01/17/23 10:52	02/08/23 09:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*01/17/23 10:52*	*02/08/23 09:40*	*1*

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0839	U	0.329	0.329	1.00	0.612	pCi/L	01/17/23 10:52	02/08/23 09:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.9*		*40 - 110*	*01/17/23 10:52*	*02/08/23 09:41*	*1*

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**1.12**		0.513	0.523	1.00	0.609	pCi/L	01/17/23 10:52	02/08/23 09:41	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*64.8*		*40 - 110*	*01/17/23 10:52*	*02/08/23 09:41*	*1*

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.146**		0.0945	0.0954	1.00	0.129	pCi/L	01/23/23 10:32	02/14/23 08:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*01/23/23 10:32*	*02/14/23 08:42*	*1*

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0103	U	0.0508	0.0508	1.00	0.103	pCi/L	01/23/23 10:32	02/14/23 08:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.1*		*40 - 110*	*01/23/23 10:32*	*02/14/23 08:42*	*1*

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0113	U	0.0479	0.0479	1.00	0.0978	pCi/L	01/23/23 10:32	02/14/23 08:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*01/23/23 10:32*	*02/14/23 08:42*	*1*

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.106	U	0.0830	0.0835	1.00	0.120	pCi/L	01/23/23 10:32	02/14/23 08:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*01/23/23 10:32*	*02/14/23 08:25*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**4.05**	**G**	1.79	1.83	1.00	2.36	pCi/L	01/17/23 11:26	01/24/23 11:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.6*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:29*	*1*
Y Carrier	*86.0*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:29*	*1*

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.309	U	0.401	0.402	1.00	0.669	pCi/L	01/17/23 11:26	01/24/23 11:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:29*	*1*
Y Carrier	*83.0*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:29*	*1*

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.96	U G	1.45	1.47	1.00	2.19	pCi/L	01/17/23 11:26	01/24/23 11:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*72.9*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:29*	*1*
Y Carrier	*84.9*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:29*	*1*

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.45	U G	1.64	1.65	1.00	2.69	pCi/L	01/17/23 11:26	01/24/23 11:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*64.8*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:29*	*1*
Y Carrier	*91.2*		*40 - 110*	*01/17/23 11:26*	*01/24/23 11:29*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.146	U	0.355	0.355	1.00	0.631	pCi/L	01/23/23 10:58	01/27/23 12:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:46*	*1*
Y Carrier	*85.2*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:46*	*1*

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.523	U	0.462	0.464	1.00	0.728	pCi/L	01/23/23 10:58	01/27/23 12:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.1*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:23*	*1*
Y Carrier	*84.5*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:23*	*1*

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0307	U	0.428	0.428	1.00	0.804	pCi/L	01/23/23 10:58	01/27/23 12:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:24*	*1*
Y Carrier	*82.2*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:24*	*1*

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.433	U	0.411	0.413	1.00	0.654	pCi/L	01/23/23 10:58	01/27/23 12:25	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.6*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:25*	*1*
Y Carrier	*86.7*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:25*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.165	U	1.07	1.07	3.00	1.89	pCi/L	01/17/23 11:33	01/26/23 17:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*64.1*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:48*	*1*
Y Carrier	*78.5*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:48*	*1*

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.308	U	0.399	0.400	3.00	0.665	pCi/L	01/17/23 11:33	01/26/23 17:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.8*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:48*	*1*
Y Carrier	*71.8*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:48*	*1*

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.232	U	0.798	0.798	3.00	1.49	pCi/L	01/17/23 11:33	01/26/23 17:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*81.6*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:48*	*1*
Y Carrier	*76.6*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:48*	*1*

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.423	U	0.950	0.950	3.00	1.77	pCi/L	01/17/23 11:33	01/26/23 17:48	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*76.1*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:48*	*1*
Y Carrier	*72.9*		*40 - 110*	*01/17/23 11:33*	*01/26/23 17:48*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.352	U	0.402	0.403	3.00	0.662	pCi/L	01/24/23 15:23	02/01/23 15:47	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*79.4*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:47*	*1*
Y Carrier	*90.8*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:47*	*1*

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.0435	U	0.288	0.288	3.00	0.508	pCi/L	01/24/23 15:23	02/01/23 15:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*90.2*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:49*	*1*
Y Carrier	*87.9*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:49*	*1*

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.205	U	0.267	0.268	3.00	0.517	pCi/L	01/24/23 15:23	02/01/23 16:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*88.6*		*40 - 110*	*01/24/23 15:23*	*02/01/23 16:35*	*1*
Y Carrier	*89.0*		*40 - 110*	*01/24/23 15:23*	*02/01/23 16:35*	*1*

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.162	U	0.294	0.294	3.00	0.500	pCi/L	01/24/23 15:23	02/01/23 15:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*89.4*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:49*	*1*
Y Carrier	*83.4*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:49*	*1*

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	213	U	169	170	500	264	pCi/L	01/26/23 08:47	02/01/23 15:21	1

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	131	U	156	157	500	258	pCi/L	01/26/23 08:47	02/01/23 15:43	1

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	190	U	168	169	500	269	pCi/L	01/26/23 08:47	02/01/23 16:06	1

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	60.8	U	152	152	500	268	pCi/L	01/26/23 08:47	02/01/23 16:28	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	9.62	G	2.49	2.57	1.00	1.01	pCi/L	01/19/23 14:12	01/30/23 21:43	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*58.9*		*30 - 110*	*01/19/23 14:12*	*01/30/23 21:43*	*1*

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	1.09		0.332	0.337	1.00	0.140	pCi/L	01/19/23 14:12	01/30/23 21:43	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*73.5*		*30 - 110*	*01/19/23 14:12*	*01/30/23 21:43*	*1*

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	1.11		0.498	0.502	1.00	0.326	pCi/L	01/19/23 14:12	01/30/23 21:43	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*70.0*		*30 - 110*	*01/19/23 14:12*	*01/30/23 21:43*	*1*

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	3.78	G	1.85	1.86	1.00	1.23	pCi/L	01/19/23 14:12	01/31/23 14:25	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*43.8*		*30 - 110*	*01/19/23 14:12*	*01/31/23 14:25*	*1*

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBLLC_011023
Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	6.84		1.09	1.16	1.00	0.345	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*90.0*		*30 - 110*	*01/23/23 13:17*	*01/27/23 11:32*	*1*

Client Sample ID: EPBMC_010923
Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	1.17		0.412	0.417	1.00	0.234	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*82.2*		*30 - 110*	*01/23/23 13:17*	*01/27/23 11:32*	*1*

Client Sample ID: EPBBC_010923
Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	1.12		0.579	0.583	1.00	0.459	pCi/L	01/23/23 13:17	01/27/23 11:35	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*48.1*		*30 - 110*	*01/23/23 13:17*	*01/27/23 11:35*	*1*

Client Sample ID: EPBMC_011023
Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.890		0.405	0.408	1.00	0.296	pCi/L	01/23/23 13:17	01/27/23 11:29	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*90.8*		*30 - 110*	*01/23/23 13:17*	*01/27/23 11:29*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-5

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
570-123671-1	EPBLLC_011023	72.6
570-123671-2	EPBMC_010923	85.8
570-123671-3	EPBBC_010923	72.9
570-123671-4	EPBMC_011023	64.8
880-23869-C-2-B DU	Duplicate	92.3
LCS 160-597154/2-A	Lab Control Sample	87.7
LCS 160-597771/2-A	Lab Control Sample	99.7
LCSD 160-597154/3-A	Lab Control Sample Dup	91.3
MB 160-597154/1-A	Method Blank	94.7
MB 160-597771/1-A	Method Blank	94.0

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Dissolved

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
570-123671-1	EPBLLC_011023	92.3
570-123671-2	EPBMC_010923	91.1
570-123671-3	EPBBC_010923	91.7
570-123671-4	EPBMC_011023	92.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
570-123671-1	EPBLLC_011023	72.6	86.0
570-123671-2	EPBMC_010923	85.8	83.0
570-123671-3	EPBBC_010923	72.9	84.9
570-123671-4	EPBMC_011023	64.8	91.2
880-23869-C-2-C DU	Duplicate	92.3	84.5
LCS 160-597175/2-A	Lab Control Sample	87.7	82.6
LCS 160-597774/2-A	Lab Control Sample	99.7	81.9
LCSD 160-597175/3-A	Lab Control Sample Dup	91.3	81.9
MB 160-597175/1-A	Method Blank	94.7	84.5
MB 160-597774/1-A	Method Blank	94.0	86.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123671-5
Project/Site: Boeing SSFL ISRA and BMP

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123671-1	EPBLLC_011023	92.3	85.2
570-123671-2	EPBMC_010923	91.1	84.5
570-123671-3	EPBBC_010923	91.7	82.2
570-123671-4	EPBMC_011023	92.6	86.7

Tracer/Carrier Legend
Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123671-1	EPBLLC_011023	64.1	78.5
570-123671-2	EPBMC_010923	86.8	71.8
570-123671-3	EPBBC_010923	81.6	76.6
570-123671-4	EPBMC_011023	76.1	72.9
LCS 160-597176/2-A	Lab Control Sample	82.2	72.1
LCS 160-598093/2-A	Lab Control Sample	87.6	86.4
LCSD 160-597176/3-A	Lab Control Sample Dup	82.8	70.3
LCSD 160-598093/3-A	Lab Control Sample Dup	85.5	87.9
MB 160-597176/1-A	Method Blank	79.4	74.0
MB 160-598093/1-A	Method Blank	84.7	84.9

Tracer/Carrier Legend
Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123671-1	EPBLLC_011023	79.4	90.8
570-123671-2	EPBMC_010923	90.2	87.9
570-123671-3	EPBBC_010923	88.6	89.0
570-123671-4	EPBMC_011023	89.4	83.4

Tracer/Carrier Legend
Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-123671-1	EPBLLC_011023	58.9
570-123671-2	EPBMC_010923	73.5

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123671-5
Project/Site: Boeing SSFL ISRA and BMP

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	U-232 (30-110)
570-123671-2 DU	EPBMC_010923	92.9
570-123671-3	EPBBC_010923	70.0
570-123671-4	EPBMC_011023	43.8
LCS 160-597538/2-A	Lab Control Sample	80.5
LCS 160-597806/2-A	Lab Control Sample	84.6
MB 160-597538/1-A	Method Blank	80.4
MB 160-597806/1-A	Method Blank	88.9

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	U-232 (30-110)
570-123671-1	EPBLLC_011023	90.0
570-123671-2	EPBMC_010923	82.2
570-123671-3	EPBBC_010923	48.1
570-123671-4	EPBMC_011023	90.8
570-123902-K-2-C DU	Duplicate	85.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-598080/1-A
Matrix: Water
Analysis Batch: 599978

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598080

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.5560	U	0.637	0.640	3.00	1.04	pCi/L	01/24/23 13:13	02/09/23 09:09	1
Gross Beta	-0.08801	U	0.455	0.456	4.00	0.821	pCi/L	01/24/23 13:13	02/09/23 09:09	1

Lab Sample ID: LCS 160-598080/2-A
Matrix: Water
Analysis Batch: 599978

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598080

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	54.75		7.88	3.00	1.80	pCi/L	108	75 - 125

Lab Sample ID: LCSB 160-598080/3-A
Matrix: Water
Analysis Batch: 599978

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598080

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	69.84		7.51	4.00	0.954	pCi/L	95	75 - 125

Lab Sample ID: MB 160-598184/1-A
Matrix: Water
Analysis Batch: 599340

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598184

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.6385	U	0.676	0.680	3.00	1.09	pCi/L	01/25/23 14:53	02/06/23 18:34	1
Gross Beta	-0.3300	U	0.484	0.485	4.00	0.905	pCi/L	01/25/23 14:53	02/06/23 18:34	1

Lab Sample ID: LCS 160-598184/2-A
Matrix: Water
Analysis Batch: 599340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598184

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	53.25		7.93	3.00	2.89	pCi/L	105	75 - 125

Lab Sample ID: LCSB 160-598184/3-A
Matrix: Water
Analysis Batch: 599340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598184

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	71.49		7.69	4.00	0.954	pCi/L	97	75 - 125

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued)

Lab Sample ID: 570-123671-2 MS
Matrix: Water
Analysis Batch: 599338

Client Sample ID: EPBMC_010923
Prep Type: Total/NA
Prep Batch: 598184

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	3.06	U G	50.5	38.12		6.17	3.00	2.58	pCi/L	69	60 - 140

Lab Sample ID: 570-123671-2 MSBT
Matrix: Water
Analysis Batch: 599338

Client Sample ID: EPBMC_010923
Prep Type: Total/NA
Prep Batch: 598184

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	3.42		73.7	75.33		8.07	4.00	0.997	pCi/L	98	60 - 140

Lab Sample ID: 570-123671-2 DU
Matrix: Water
Analysis Batch: 599338

Client Sample ID: EPBMC_010923
Prep Type: Total/NA
Prep Batch: 598184

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	3.06	U G	0.2100	U	1.22	3.00	2.29	pCi/L	0.84	1
Gross Beta	3.42		3.749		0.883	4.00	0.877	pCi/L	0.18	1

Lab Sample ID: 570-123671-3 MS
Matrix: Water
Analysis Batch: 599966

Client Sample ID: EPBBC_010923
Prep Type: Dissolved
Prep Batch: 598080

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	0.527	U	50.5	41.77		6.99	3.00	2.74	pCi/L	82	60 - 140

Lab Sample ID: 570-123671-3 MSBT
Matrix: Water
Analysis Batch: 599966

Client Sample ID: EPBBC_010923
Prep Type: Dissolved
Prep Batch: 598080

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	2.18		73.7	76.09		8.15	4.00	0.952	pCi/L	100	60 - 140

Lab Sample ID: 570-123671-3 DU
Matrix: Water
Analysis Batch: 599966

Client Sample ID: EPBBC_010923
Prep Type: Dissolved
Prep Batch: 598080

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	0.527	U	1.688	U G	2.15	3.00	3.56	pCi/L	0.32	1
Gross Beta	2.18		2.638		0.789	4.00	0.875	pCi/L	0.30	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597241/1-A
Matrix: Water
Analysis Batch: 599334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597241

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.826	U	8.51	8.52	20.0	10.3	pCi/L	01/17/23 13:03	02/03/23 22:10	1
Potassium-40	-36.61	U	86.6	86.7		115	pCi/L	01/17/23 13:03	02/03/23 22:10	1

Lab Sample ID: LCS 160-597241/2-A
Matrix: Water
Analysis Batch: 599336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597241

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	138000		16400		297	pCi/L	102	75 - 125
Cesium-137	41000	42160		5020	20.0	79.9	pCi/L	103	75 - 125
Cobalt-60	18200	18990		2260		44.3	pCi/L	105	75 - 125

Lab Sample ID: 570-123234-AI-1-E DU
Matrix: Water
Analysis Batch: 599354

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597241

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-5.12	U	-0.5107	U	7.06	20.0	8.40	pCi/L	0.29	1
Potassium-40	-33.9	U	67.97		68.0		67.4	pCi/L	0.58	1

Lab Sample ID: MB 160-597546/1-A
Matrix: Water
Analysis Batch: 599987

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597546

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.364	U	6.34	6.35	20.0	7.51	pCi/L	01/19/23 14:55	02/10/23 08:51	1
Potassium-40	38.73	U	64.5	64.6		65.8	pCi/L	01/19/23 14:55	02/10/23 08:51	1

Lab Sample ID: LCS 160-597546/2-A
Matrix: Water
Analysis Batch: 600126

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597546

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	139400		16600		396	pCi/L	103	75 - 125
Cesium-137	41000	40870		4870	20.0	76.9	pCi/L	100	75 - 125
Cobalt-60	18100	17830		2130		63.9	pCi/L	98	75 - 125

Lab Sample ID: 570-123671-1 DU
Matrix: Water
Analysis Batch: 599988

Client Sample ID: EPBLLC_011023
Prep Type: Dissolved
Prep Batch: 597546

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	4.23	U	2.958	U	5.53	20.0	6.44	pCi/L	0.09	1
Potassium-40	99.7		45.50	U	77.8		80.4	pCi/L	0.32	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-597154/1-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597154

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.006957	U	0.0458	0.0458	1.00	0.0910	pCi/L	01/17/23 10:52	02/08/23 09:29	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.7*		*40 - 110*	*01/17/23 10:52*	*02/08/23 09:29*	*1*

Lab Sample ID: LCS 160-597154/2-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597154

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	11.79		1.20	1.00	0.0822	pCi/L	104	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.7*		*40 - 110*

Lab Sample ID: LCSD 160-597154/3-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597154

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.35		1.16	1.00	0.0760	pCi/L	100	75 - 125	0.19	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*91.3*		*40 - 110*

Lab Sample ID: MB 160-597771/1-A
Matrix: Water
Analysis Batch: 600303

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597771

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02603	U	0.0443	0.0444	1.00	0.0494	pCi/L	01/23/23 10:32	02/14/23 08:39	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.0*		*40 - 110*	*01/23/23 10:32*	*02/14/23 08:39*	*1*

Lab Sample ID: LCS 160-597771/2-A
Matrix: Water
Analysis Batch: 600303

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597771

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.74		1.09	1.00	0.0432	pCi/L	95	75 - 125		

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-597771/2-A
Matrix: Water
Analysis Batch: 600303

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597771

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	99.7		40 - 110

Lab Sample ID: 880-23869-C-2-B DU
Matrix: Water
Analysis Batch: 600303

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597771

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	-0.0352	U		0.006244	U	0.0522	1.00	0.102	pCi/L			0.39	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	92.3		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-597175/1-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597175

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.05046	U	0.253	0.253	1.00	0.464	pCi/L	01/17/23 11:26	01/24/23 11:23	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110	01/17/23 11:26	01/24/23 11:23	1
Y Carrier	84.5		40 - 110	01/17/23 11:26	01/24/23 11:23	1

Lab Sample ID: LCS 160-597175/2-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597175

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.25	9.815		1.34	1.00	0.590	pCi/L	119	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	87.7		40 - 110
Y Carrier	82.6		40 - 110

Lab Sample ID: LCSD 160-597175/3-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597175

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.25	10.40		1.37	1.00	0.516	pCi/L	126	75 - 125	0.21	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-597175/3-A
Matrix: Water
Analysis Batch: 598066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597175

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	91.3		40 - 110
Y Carrier	81.9		40 - 110

Lab Sample ID: MB 160-597774/1-A
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597774

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.8428		0.378	0.385	1.00	0.306	pCi/L	01/23/23 10:58	01/27/23 12:34	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110	01/23/23 10:58	01/27/23 12:34	1
Y Carrier	86.7		40 - 110	01/23/23 10:58	01/27/23 12:34	1

Lab Sample ID: LCS 160-597774/2-A
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597774

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.24	9.007		1.23	1.00	0.285	pCi/L	109	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	99.7		40 - 110
Y Carrier	81.9		40 - 110

Lab Sample ID: 880-23869-C-2-C DU
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597774

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.293	U		0.2611	U	0.327	1.00	0.540	pCi/L			0.05	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	92.3		40 - 110
Y Carrier	84.5		40 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-597176/1-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597176

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.03721	U	0.223	0.223	3.00	0.408	pCi/L	01/17/23 11:33	01/26/23 17:45	1

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	79.4		40 - 110	01/17/23 11:33	01/26/23 17:45	1
Y Carrier	74.0		40 - 110	01/17/23 11:33	01/26/23 17:45	1

Lab Sample ID: LCS 160-597176/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 598283 — **Prep Batch: 597176**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.38	7.564		0.882	3.00	0.355	pCi/L	103	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	82.2		40 - 110
Y Carrier	72.1		40 - 110

Lab Sample ID: LCSD 160-597176/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 598283 — **Prep Batch: 597176**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.38	7.695		0.910	3.00	0.459	pCi/L	104	75 - 125	0.07	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	82.8		40 - 110
Y Carrier	70.3		40 - 110

Lab Sample ID: MB 160-598093/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 598871 — **Prep Batch: 598093**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.03468	U	0.135	0.135	3.00	0.252	pCi/L	01/24/23 15:23	02/01/23 15:51	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	84.7		40 - 110	01/24/23 15:23	02/01/23 15:51	1
Y Carrier	84.9		40 - 110	01/24/23 15:23	02/01/23 15:51	1

Lab Sample ID: LCS 160-598093/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 598871 — **Prep Batch: 598093**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	5.824		0.653	3.00	0.278	pCi/L	79	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	87.6		40 - 110
Y Carrier	86.4		40 - 110

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCSD 160-598093/3-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598093

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	6.122		0.674	3.00	0.220	pCi/L	83	75 - 125	0.22	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.5*		*40 - 110*
Y Carrier	*87.9*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-598269/1-A
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598269

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	137.8	U	159	159	500	261	pCi/L	01/26/23 08:47	02/01/23 10:49	1

Lab Sample ID: LCS 160-598269/2-A
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598269

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2110	2226		377	500	263	pCi/L	105	75 - 125		

Lab Sample ID: 160-48571-B-5-B MS
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598269

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	153	U	2140	2086		358	500	253	pCi/L	90	60 - 140		

Lab Sample ID: 160-48571-B-3-B DU
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598269

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	102	U		145.0	U	161	500	263	pCi/L			0.14	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-597538/1-A
Matrix: Water
Analysis Batch: 598766

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597538

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.08454	U	0.1204	0.1205	1.00	0.175	pCi/L	01/19/23 14:12	01/30/23 21:45	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Tracer	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	80.4		30 - 110	01/19/23 14:12	01/30/23 21:45	1

Lab Sample ID: LCS 160-597538/2-A
Matrix: Water
Analysis Batch: 598767

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597538

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.89		1.52	1.00	0.204	pCi/L	101	75 - 125		
Uranium-238			13.0	12.29		1.47	1.00	0.135	pCi/L	94	75 - 125		

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	80.5		30 - 110

Lab Sample ID: 570-123671-2 DU
Matrix: Water
Analysis Batch: 598726

Client Sample ID: EPBMC_010923
Prep Type: Total/NA
Prep Batch: 597538

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	1.09			1.050		0.326	1.00	0.143	pCi/L			0.06	1

Tracer	DU %Yield	DU Qualifier	Limits
Uranium-232	92.9		30 - 110

Lab Sample ID: MB 160-597806/1-A
Matrix: Water
Analysis Batch: 598399

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597806

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1420		0.1193	0.1196	1.00	0.134	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Tracer	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Uranium-232	88.9		30 - 110	01/23/23 13:17	01/27/23 11:32	1

Lab Sample ID: LCS 160-597806/2-A
Matrix: Water
Analysis Batch: 598400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597806

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.58		1.50	1.00	0.117	pCi/L	99	75 - 125		
Uranium-238			13.0	12.67		1.51	1.00	0.102	pCi/L	97	75 - 125		

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	84.6		30 - 110

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-5

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: 570-123902-K-2-C DU
Matrix: Water
Analysis Batch: 598414

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 597806

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.356			0.1046	U	0.1246	1.00	0.162	pCi/L			0.72	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Uranium-232	*85.8*		*30 - 110*

Rad

Prep Batch: 597154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	PrecSep-21	
570-123671-2	EPBMC_010923	Total/NA	Water	PrecSep-21	
570-123671-3	EPBBC_010923	Total/NA	Water	PrecSep-21	
570-123671-4	EPBMC_011023	Total/NA	Water	PrecSep-21	
MB 160-597154/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597154/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-597154/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 597175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	PrecSep_0	
570-123671-2	EPBMC_010923	Total/NA	Water	PrecSep_0	
570-123671-3	EPBBC_010923	Total/NA	Water	PrecSep_0	
570-123671-4	EPBMC_011023	Total/NA	Water	PrecSep_0	
MB 160-597175/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597175/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-597175/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 597176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	PrecSep-7	
570-123671-2	EPBMC_010923	Total/NA	Water	PrecSep-7	
570-123671-3	EPBBC_010923	Total/NA	Water	PrecSep-7	
570-123671-4	EPBMC_011023	Total/NA	Water	PrecSep-7	
MB 160-597176/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-597176/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597176/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	Fill_Geo-0	
570-123671-2	EPBMC_010923	Total/NA	Water	Fill_Geo-0	
570-123671-3	EPBBC_010923	Total/NA	Water	Fill_Geo-0	
570-123671-4	EPBMC_011023	Total/NA	Water	Fill_Geo-0	
MB 160-597241/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597241/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123234-AI-1-E DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Filtration Batch: 597254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	Filtration	
570-123671-1	EPBLLC_011023	Dissolved	Water	Filtration	
570-123671-1	EPBLLC_011023	Dissolved	Water	Filtration	
570-123671-1	EPBLLC_011023	Dissolved	Water	Filtration	
570-123671-2	EPBMC_010923	Dissolved	Water	Filtration	
570-123671-2	EPBMC_010923	Dissolved	Water	Filtration	
570-123671-2	EPBMC_010923	Dissolved	Water	Filtration	
570-123671-3	EPBBC_010923	Dissolved	Water	Filtration	
570-123671-3	EPBBC_010923	Dissolved	Water	Filtration	
570-123671-3	EPBBC_010923	Dissolved	Water	Filtration	
570-123671-3	EPBBC_010923	Dissolved	Water	Filtration	

Rad (Continued)

Filtration Batch: 597254 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-4	EPBMC_011023	Dissolved	Water	Filtration	
570-123671-4	EPBMC_011023	Dissolved	Water	Filtration	
570-123671-4	EPBMC_011023	Dissolved	Water	Filtration	
570-123671-3 MS	EPBBC_010923	Dissolved	Water	Filtration	
570-123671-3 MSBT	EPBBC_010923	Dissolved	Water	Filtration	
570-123671-1 DU	EPBLLC_011023	Dissolved	Water	Filtration	
570-123671-3 DU	EPBBC_010923	Dissolved	Water	Filtration	

Filtration Batch: 597489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-K-2-C DU	Duplicate	Dissolved	Water	Filtration	

Prep Batch: 597538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	ExtChrom	
570-123671-2	EPBMC_010923	Total/NA	Water	ExtChrom	
570-123671-3	EPBBC_010923	Total/NA	Water	ExtChrom	
570-123671-4	EPBMC_011023	Total/NA	Water	ExtChrom	
MB 160-597538/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597538/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123671-2 DU	EPBMC_010923	Total/NA	Water	ExtChrom	

Prep Batch: 597546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	Fill_Geo-0	597254
570-123671-2	EPBMC_010923	Dissolved	Water	Fill_Geo-0	597254
570-123671-3	EPBBC_010923	Dissolved	Water	Fill_Geo-0	597254
570-123671-4	EPBMC_011023	Dissolved	Water	Fill_Geo-0	597254
MB 160-597546/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597546/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123671-1 DU	EPBLLC_011023	Dissolved	Water	Fill_Geo-0	597254

Prep Batch: 597771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	PrecSep-21	597254
570-123671-2	EPBMC_010923	Dissolved	Water	PrecSep-21	597254
570-123671-3	EPBBC_010923	Dissolved	Water	PrecSep-21	597254
570-123671-4	EPBMC_011023	Dissolved	Water	PrecSep-21	597254
MB 160-597771/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597771/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
880-23869-C-2-B DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 597774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	PrecSep_0	597254
570-123671-2	EPBMC_010923	Dissolved	Water	PrecSep_0	597254
570-123671-3	EPBBC_010923	Dissolved	Water	PrecSep_0	597254
570-123671-4	EPBMC_011023	Dissolved	Water	PrecSep_0	597254
MB 160-597774/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597774/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
880-23869-C-2-C DU	Duplicate	Total/NA	Water	PrecSep_0	

Rad

Prep Batch: 597806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	ExtChrom	597254
570-123671-2	EPBMC_010923	Dissolved	Water	ExtChrom	597254
570-123671-3	EPBBC_010923	Dissolved	Water	ExtChrom	597254
570-123671-4	EPBMC_011023	Dissolved	Water	ExtChrom	597254
MB 160-597806/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597806/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123902-K-2-C DU	Duplicate	Dissolved	Water	ExtChrom	597489

Prep Batch: 598080

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	Evaporation	597254
570-123671-1	EPBLLC_011023	Total/NA	Water	Evaporation	
570-123671-2	EPBMC_010923	Dissolved	Water	Evaporation	597254
570-123671-3	EPBBC_010923	Dissolved	Water	Evaporation	597254
570-123671-3	EPBBC_010923	Total/NA	Water	Evaporation	
570-123671-4	EPBMC_011023	Dissolved	Water	Evaporation	597254
570-123671-4	EPBMC_011023	Total/NA	Water	Evaporation	
MB 160-598080/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598080/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598080/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123671-3 MS	EPBBC_010923	Dissolved	Water	Evaporation	597254
570-123671-3 MSBT	EPBBC_010923	Dissolved	Water	Evaporation	597254
570-123671-3 DU	EPBBC_010923	Dissolved	Water	Evaporation	597254

Prep Batch: 598093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Dissolved	Water	PrecSep-7	597254
570-123671-2	EPBMC_010923	Dissolved	Water	PrecSep-7	597254
570-123671-3	EPBBC_010923	Dissolved	Water	PrecSep-7	597254
570-123671-4	EPBMC_011023	Dissolved	Water	PrecSep-7	597254
MB 160-598093/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-598093/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-598093/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 598184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-2	EPBMC_010923	Total/NA	Water	Evaporation	
MB 160-598184/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598184/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598184/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123671-2 MS	EPBMC_010923	Total/NA	Water	Evaporation	
570-123671-2 MSBT	EPBMC_010923	Total/NA	Water	Evaporation	
570-123671-2 DU	EPBMC_010923	Total/NA	Water	Evaporation	

Prep Batch: 598269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123671-1	EPBLLC_011023	Total/NA	Water	LSC_Dist_Susp	
570-123671-2	EPBMC_010923	Total/NA	Water	LSC_Dist_Susp	
570-123671-3	EPBBC_010923	Total/NA	Water	LSC_Dist_Susp	
570-123671-4	EPBMC_011023	Total/NA	Water	LSC_Dist_Susp	
MB 160-598269/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	

Rad (Continued)

Prep Batch: 598269 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-598269/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
160-48571-B-5-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
160-48571-B-3-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-5

Client Sample ID: EPBLLC_011023

Date Collected: 01/10/23 09:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	Evaporation			66.67 mL	1.0 g	598080	01/24/23 13:13	MST	EET SL
Dissolved	Analysis	900.0		1			599966	02/09/23 14:20	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			10.6762 mL	1.0 g	598080	01/24/23 13:13	MST	EET SL
Total/NA	Analysis	900.0		1			599966	02/09/23 14:19	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 14:51	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597546	01/19/23 14:55	SRE	EET SL
Dissolved	Analysis	901.1		1			600126	02/10/23 13:09	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597241	01/17/23 13:13	JML	EET SL
Total/NA	Analysis	901.1		1			599360	02/06/23 17:30	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep-21			758.61 mL	1.0 g	597771	01/23/23 10:32	DJP	EET SL
Dissolved	Analysis	903.0		1			600303	02/14/23 08:42	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			250.27 mL	1.0 g	597154	01/17/23 10:52	DJP	EET SL
Total/NA	Analysis	903.0		1			599672	02/08/23 09:40	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep_0			758.61 mL	1.0 g	597774	01/23/23 10:58	DJP	EET SL
Dissolved	Analysis	904.0		1	1.0 mL	1.0 mL	598555	01/27/23 12:46	SCB	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			250.27 mL	1.0 g	597175	01/17/23 11:26	DJP	EET SL
Total/NA	Analysis	904.0		1			598066	01/24/23 11:29	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep-7			498.20 mL	1.0 g	598093	01/24/23 15:23	DJP	EET SL
Dissolved	Analysis	905		1			598876	02/01/23 15:47	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			254.31 mL	1.0 g	597176	01/17/23 11:33	DJP	EET SL
Total/NA	Analysis	905		1			598283	01/26/23 17:48	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			103.99 mL	1.0 g	598269	01/26/23 08:47	SEH	EET SL
Total/NA	Analysis	906.0		1			599474	02/01/23 15:21	REV	EET SL
	Instrument ID: LSCBROWN									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 14:51	SRE	EET SL
Dissolved	Prep	ExtChrom			249.31 mL	1.0 mL	597806	01/23/23 13:17	MAL	EET SL
Dissolved	Analysis	A-01-R		1			598415	01/27/23 11:32	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			99.95 mL	1.0 mL	597538	01/19/23 14:12	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598723	01/30/23 21:43	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-5

Client Sample ID: EPBMC_010923

Date Collected: 01/09/23 13:05
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	Evaporation			200.00 mL	1.0 g	598080	01/24/23 13:13	MST	EET SL
Dissolved	Analysis	900.0		1			599966	02/09/23 14:20	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			199.99 mL	1.0 g	598184	01/25/23 14:53	MST	EET SL
Total/NA	Analysis	900.0		1			599340	02/06/23 18:35	SCB	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 14:51	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597546	01/19/23 14:56	SRE	EET SL
Dissolved	Analysis	901.1		1			599987	02/10/23 13:10	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597241	01/17/23 13:13	JML	EET SL
Total/NA	Analysis	901.1		1			599354	02/06/23 17:30	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep-21			747.66 mL	1.0 g	597771	01/23/23 10:32	DJP	EET SL
Dissolved	Analysis	903.0		1			600303	02/14/23 08:42	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			747.97 mL	1.0 g	597154	01/17/23 10:52	DJP	EET SL
Total/NA	Analysis	903.0		1			599672	02/08/23 09:40	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep_0			747.66 mL	1.0 g	597774	01/23/23 10:58	DJP	EET SL
Dissolved	Analysis	904.0		1			598557	01/27/23 12:23	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			747.97 mL	1.0 g	597175	01/17/23 11:26	DJP	EET SL
Total/NA	Analysis	904.0		1			598066	01/24/23 11:29	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep-7			508.92 mL	1.0 g	598093	01/24/23 15:23	DJP	EET SL
Dissolved	Analysis	905		1			598874	02/01/23 15:49	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-7			508.18 mL	1.0 g	597176	01/17/23 11:33	DJP	EET SL
Total/NA	Analysis	905		1			598283	01/26/23 17:48	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			96.83 mL	1.0 g	598269	01/26/23 08:47	SEH	EET SL
Total/NA	Analysis	906.0		1			599474	02/01/23 15:43	REV	EET SL
	Instrument ID: LSCBROWN									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 14:51	SRE	EET SL
Dissolved	Prep	ExtChrom			350.24 mL	1.0 mL	597806	01/23/23 13:17	MAL	EET SL
Dissolved	Analysis	A-01-R		1			598422	01/27/23 11:32	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			499.63 mL	1.0 mL	597538	01/19/23 14:12	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598725	01/30/23 21:43	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-5

Client Sample ID: EPBBC_010923

Date Collected: 01/09/23 10:30
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	Evaporation			200.01 mL	1.0 g	598080	01/24/23 13:13	MST	EET SL
Dissolved	Analysis	900.0		1			599966	02/09/23 14:20	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			100 mL	1.0 g	598080	01/24/23 13:13	MST	EET SL
Total/NA	Analysis	900.0		1			599966	02/09/23 14:19	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 14:51	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597546	01/19/23 14:56	SRE	EET SL
Dissolved	Analysis	901.1		1			599988	02/10/23 13:11	SCB	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597241	01/17/23 13:13	JML	EET SL
Total/NA	Analysis	901.1		1			599360	02/06/23 20:18	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep-21			745.61 mL	1.0 g	597771	01/23/23 10:32	DJP	EET SL
Dissolved	Analysis	903.0		1			600303	02/14/23 08:42	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			256.84 mL	1.0 g	597154	01/17/23 10:52	DJP	EET SL
Total/NA	Analysis	903.0		1			599672	02/08/23 09:41	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep_0			745.61 mL	1.0 g	597774	01/23/23 10:58	DJP	EET SL
Dissolved	Analysis	904.0		1			598557	01/27/23 12:24	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			256.84 mL	1.0 g	597175	01/17/23 11:26	DJP	EET SL
Total/NA	Analysis	904.0		1			598066	01/24/23 11:29	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep-7			497.32 mL	1.0 g	598093	01/24/23 15:23	DJP	EET SL
Dissolved	Analysis	905		1			598874	02/01/23 16:35	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-7			256.01 mL	1.0 g	597176	01/17/23 11:33	DJP	EET SL
Total/NA	Analysis	905		1			598283	01/26/23 17:48	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			102.28 mL	1.0 g	598269	01/26/23 08:47	SEH	EET SL
Total/NA	Analysis	906.0		1			599474	02/01/23 16:06	REV	EET SL
	Instrument ID: LSCBROWN									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 14:51	SRE	EET SL
Dissolved	Prep	ExtChrom			295.70 mL	1.0 mL	597806	01/23/23 13:17	MAL	EET SL
Dissolved	Analysis	A-01-R		1			598423	01/27/23 11:35	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			249.95 mL	1.0 mL	597538	01/19/23 14:12	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598727	01/30/23 21:43	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-5

Client Sample ID: EPBMC_011023

Date Collected: 01/10/23 11:00
Date Received: 01/11/23 19:10

Lab Sample ID: 570-123671-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	Evaporation			200.00 mL	1.0 g	598080	01/24/23 13:13	MST	EET SL
Dissolved	Analysis	900.0		1			599966	02/09/23 14:20	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			16.9813 mL	1.0 g	598080	01/24/23 13:13	MST	EET SL
Total/NA	Analysis	900.0		1			599966	02/09/23 14:20	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 14:51	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597546	01/19/23 14:56	SRE	EET SL
Dissolved	Analysis	901.1		1			599985	02/10/23 13:12	EMH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597241	01/17/23 13:13	JML	EET SL
Total/NA	Analysis	901.1		1			599353	02/06/23 19:37	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep-21			748.05 mL	1.0 g	597771	01/23/23 10:32	DJP	EET SL
Dissolved	Analysis	903.0		1			600305	02/14/23 08:25	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-21			246.49 mL	1.0 g	597154	01/17/23 10:52	DJP	EET SL
Total/NA	Analysis	903.0		1			599672	02/08/23 09:41	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep_0			748.05 mL	1.0 g	597774	01/23/23 10:58	DJP	EET SL
Dissolved	Analysis	904.0		1			598557	01/27/23 12:25	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			246.49 mL	1.0 g	597175	01/17/23 11:26	DJP	EET SL
Total/NA	Analysis	904.0		1			598066	01/24/23 11:29	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 15:59	SRE	EET SL
Dissolved	Prep	PrecSep-7			502.18 mL	1.0 g	598093	01/24/23 15:23	DJP	EET SL
Dissolved	Analysis	905		1			598874	02/01/23 15:49	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-7			259.76 mL	1.0 g	597176	01/17/23 11:33	DJP	EET SL
Total/NA	Analysis	905		1			598283	01/26/23 17:48	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			97.93 mL	1.0 g	598269	01/26/23 08:47	SEH	EET SL
Total/NA	Analysis	906.0		1			599474	02/01/23 16:28	REV	EET SL
	Instrument ID: LSCBROWN									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597254	01/17/23 14:51	SRE	EET SL
Dissolved	Prep	ExtChrom			250.06 mL	1.0 mL	597806	01/23/23 13:17	MAL	EET SL
Dissolved	Analysis	A-01-R		1			598520	01/27/23 11:29	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			99.99 mL	1.0 mL	597538	01/19/23 14:12	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598822	01/31/23 14:25	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-5

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123671-5
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	02-15-23
ANAB	Dept. of Energy	L2305.01	02-15-23
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-5

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123671-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123671-1	EPBLLC_011023	Water	01/10/23 09:30	01/11/23 19:10
570-123671-2	EPBMC_010923	Water	01/09/23 13:05	01/11/23 19:10
570-123671-3	EPBBC_010923	Water	01/09/23 10:30	01/11/23 19:10
570-123671-4	EPBMC_011023	Water	01/10/23 11:00	01/11/23 19:10

123671

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: 01/09/2023

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 01/10/2023	COC No: 1 of 1 COCs
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8605	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier Pick Up	Sampler: M - Dallaleh / J. Vanderwaal
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			For Lab Use Only:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
(619) 280-9210 Phone	TAT if different from Below			Lab Sampling:
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-010-001-08	☐ 1 week			Job / SDG No.: 0129095-020-06
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			
H&A P O #	☐ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	3O4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn: – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
									2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must FITSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availab ity only need to be partially filled to meet the volume requirement as stated here.
1	EPBLLC_011023	1-10-23	0930	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2	EPBMC_010923	1-9-23	1305	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3	EPBBC_010923	1-9-23	1030	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	~~EPBCC_~~			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	~~EPBLVC_~~			G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
4	EPBMC_011023	1-10-23	1100	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to km filer@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich AP@haleyaldrich.com Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.01 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No. | Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:

Relinquished by: Michelle Dallaleh	Company: H&A	Date/Time: 1/11/23 1400	Received by: EC	EC	Date/Time: 1/11/23 1400
Relinquished by:	Company: EC	Date/Time: 1/11/23 1910	Received by:		Date/Time: 1/11/23 1910
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 2.1/2.1 1.8/1.8 SCII

SAP COC 2019/2020 VERSION 3

Dated 1/8/2016

570-123671 Chain of Custody

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s).	COC No. 570-203935 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin. California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North ,	Due Date Requested 1/23/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G Amchlor, H - Ascorbic Acid, I Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901 1_Cs/FIII_Geo_0 K-40 and Ceslum-137	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/FIII_Geo_0 (MOD) K-40 and Ceslum-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PreoSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PreoSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_011023 (570-123671-2)	1/9/23	13 05 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11 00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time: 1/12/23 1303	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No 570-203935 2
Client Contact: Shipping/Receiving	Phone.	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin. California	Page Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North ,	Due Date Requested 1/23/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/ProcSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906 0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBMC_011023 (570-123671-2)	1/9/23	13 05 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10 30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11 00 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date.	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1303				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900 0/Evaporation (MOD) Gross Alpha/Beta	900 0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PreoSop_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PreoSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PreoSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/12/23 1303				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No: 570-203935 2
Client Contact: Shipping/Receiving	Phone.	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days)			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PreSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906 0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_011023 (570-123671-1)	1/10/23	09 30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/12/23 1303				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/23/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PrecSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																			
EPBMC_011023 (570-123671-2)	1/9/23	13:05 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11:00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: FEDEX	Date/Time: 1/12/23 1303	Company	Received by: FEDEX	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: B Gonzalez	Date/Time: 1/13/23 9:00AM	Company ETA STL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact. Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/23/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCl; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	906_Sr90/PrecSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBMC_011023 (570-123671-2)	1/9/23	13:05 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11:00 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
														18

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	FEDEX	1/12/23 1303		FEDEX		
2	Relinquished by:	Date/Time:	Company	Received by: B Gonzales	Date/Time: 1/13/23 9:00 AM	Company ETAS TL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fil_Geo_0 K-40 and Ceslum-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fil_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PrecSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
																				3+3=6	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/12/23 1303		FEDEX		
2	FEDEX			B Gonzalez	1/13/23 9:00 am	ETSTL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitnc Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
														(9)

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FED EX	1/12/23 1303		FED EX		
2	Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 1/13/23 9:00AM	Company ETASTL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/23/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PrecSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
Preservation Code:																					
EPBMC_011023 (570-123671-2)	1/9/23	13:05 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11:00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

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Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	FEDEX	1/12/23 1303		FEDEX		
2	Relinquished by:	Date/Time:	Company	Received by: B Gonzalez	Date/Time: 1/13/23 9:00AM	Company ETA STL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-1
Address: 13715 Rider Trail North, ,	Due Date Requested: 1/23/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
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Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
Preservation Code:														
EPBMC_011023 (570-123671-2)	1/9/23	13:05 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBBC_011023 (570-123671-3)	1/9/23	10:30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBMC_011023 (570-123671-4)	1/10/23	11:00 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
													18	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FEDEX	1/12/23 1303		FEDEX		
2	Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 1/13/23 9:00 AM	Company ESTL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	900.0/Evaporation (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PrecSep_21 (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
																					3+3=(9)

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	FEDEX	1/12/23 1303		FEDEX		
2	Relinquished by: FEDEX	Date/Time:	Company	Received by: B Gonzalez	Date/Time: 1/13/23 9:00 am	Company EAST
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-203935.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123671-5
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/13/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_011023 (570-123671-1)	1/10/23	09:30 Pacific		Water			X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
														(9)

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FED EX	1/12/23 1303		FED EX		
2	Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 1/13/23 9:00AM	Company ETAS TL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123671-5

Login Number: 123671
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123671-5

Login Number: 123671
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/13/23 03:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123900-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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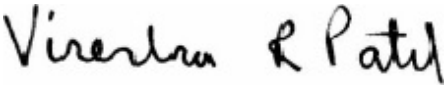
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-1

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123900-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123900-1

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.3º C.

Metals
Method 200.8: The method blank for preparation batch 570-296325 and analytical batch 570-296449 contained Copper and Lead above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: LXBMP0010_20230110 (570-123900-1) and LXBMP0012_20230110 (570-123900-2). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: The sample duplicate (DUP) precision for analytical batch 570-296115 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-1

Client Sample ID: LXBMP0010_20230110 — Lab Sample ID: 570-123900-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	0.95	J,DX MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	4.8	MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	0.47	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.64	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	6.8		1.0	0.83	mg/L	1		SM 2540D	Total/NA

Client Sample ID: LXBMP0012_20230110 — Lab Sample ID: 570-123900-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.7	J,DX MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	2.2	MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	0.90	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Total Suspended Solids	21		2.0	1.7	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: LXBMP0010_20230110
Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/17/23 08:06	01/17/23 13:01	1
Copper	**0.95**	**J,DX MB**	2.0	0.32	ug/L		01/17/23 08:06	01/17/23 13:01	1
Lead	**4.8**	**MB**	1.0	0.12	ug/L		01/17/23 08:06	01/17/23 13:01	1

Client Sample ID: LXBMP0012_20230110
Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/17/23 08:06	01/17/23 13:04	1
Copper	**1.7**	**J,DX MB**	2.0	0.32	ug/L		01/17/23 08:06	01/17/23 13:04	1
Lead	**2.2**	**MB**	1.0	0.12	ug/L		01/17/23 08:06	01/17/23 13:04	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: LXBMP0010_20230110
Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/16/23 10:33	1
Copper	**0.47**	**J,DX BU**	2.0	0.32	ug/L			01/16/23 10:33	1
Lead	**0.64**	**J,DX BU**	1.0	0.12	ug/L			01/16/23 10:33	1

Client Sample ID: LXBMP0012_20230110
Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/16/23 10:35	1
Copper	**0.90**	**J,DX BU**	2.0	0.32	ug/L			01/16/23 10:35	1
Lead	ND	BU	1.0	0.12	ug/L			01/16/23 10:35	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-1

General Chemistry

Client Sample ID: LXBMP0010_20230110
Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	6.8		1.0	0.83	mg/L			01/16/23 11:39	1

Client Sample ID: LXBMP0012_20230110
Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	21		2.0	1.7	mg/L			01/16/23 11:39	1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-296325/1-A
Matrix: Water
Analysis Batch: 296449

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 296325

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/17/23 08:06	01/17/23 12:28	1
Copper	0.946	J,DX	2.0	0.32	ug/L		01/17/23 08:06	01/17/23 12:28	1
Lead	0.132	J,DX	1.0	0.12	ug/L		01/17/23 08:06	01/17/23 12:28	1

Lab Sample ID: LCS 570-296325/2-A
Matrix: Water
Analysis Batch: 296449

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 296325

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	81.7		ug/L		102	85 - 115
Copper	80.0	84.8		ug/L		106	85 - 115
Lead	80.0	82.5		ug/L		103	85 - 115

Lab Sample ID: LCSD 570-296325/3-A
Matrix: Water
Analysis Batch: 296449

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 296325

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	82.8		ug/L		104	85 - 115	1	20
Copper	80.0	86.4		ug/L		108	85 - 115	2	20
Lead	80.0	83.3		ug/L		104	85 - 115	1	20

Lab Sample ID: 570-123812-A-1-B MS
Matrix: Water
Analysis Batch: 296466

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 296325

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		100	101		ug/L		101	80 - 120
Copper	7.1	MB	100	108		ug/L		101	80 - 120
Lead	3.2	MB	100	105		ug/L		102	80 - 120

Lab Sample ID: 570-123812-A-1-C MSD
Matrix: Water
Analysis Batch: 296466

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 296325

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		100	102		ug/L		102	80 - 120	1	20
Copper	7.1	MB	100	110		ug/L		103	80 - 120	2	20
Lead	3.2	MB	100	105		ug/L		102	80 - 120	0	20

Lab Sample ID: 570-123617-D-1-C MS
Matrix: Water
Analysis Batch: 296129

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		100	93.0		ug/L		93	80 - 120
Copper	3.1		100	95.8		ug/L		93	80 - 120
Lead	ND		100	92.1		ug/L		92	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-123617-D-1-D MSD
Matrix: Water
Analysis Batch: 296129

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		100	94.5		ug/L		95	80 - 120	2	20
Copper	3.1		100	97.4		ug/L		94	80 - 120	2	20
Lead	ND		100	93.5		ug/L		94	80 - 120	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-296115/1
Matrix: Water
Analysis Batch: 296115

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/16/23 11:35	1

Lab Sample ID: LCS 570-296115/2
Matrix: Water
Analysis Batch: 296115

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	86.0		mg/L		86	77 - 116

Lab Sample ID: LCSD 570-296115/3
Matrix: Water
Analysis Batch: 296115

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	93.0		mg/L		93	77 - 116	8	10

Lab Sample ID: 570-123900-2 DU
Matrix: Water
Analysis Batch: 296115

Client Sample ID: LXBMP0012_20230110
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	21		29.8		mg/L		34	10

Metals

Filtration Batch: 295715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1	LXBMP0010_20230110	Dissolved	Water	Filtration	
570-123900-2	LXBMP0012_20230110	Dissolved	Water	Filtration	
570-123617-D-1-C MS	Matrix Spike	Dissolved	Water	Filtration	
570-123617-D-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 296129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1	LXBMP0010_20230110	Dissolved	Water	200.8	295715
570-123900-2	LXBMP0012_20230110	Dissolved	Water	200.8	295715
570-123617-D-1-C MS	Matrix Spike	Dissolved	Water	200.8	295715
570-123617-D-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	295715

Prep Batch: 296325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1	LXBMP0010_20230110	Total Recoverable	Water	200.8	
570-123900-2	LXBMP0012_20230110	Total Recoverable	Water	200.8	
MB 570-296325/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-296325/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-296325/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-123812-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	
570-123812-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 296449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1	LXBMP0010_20230110	Total Recoverable	Water	200.8	296325
570-123900-2	LXBMP0012_20230110	Total Recoverable	Water	200.8	296325
MB 570-296325/1-A	Method Blank	Total Recoverable	Water	200.8	296325
LCS 570-296325/2-A	Lab Control Sample	Total Recoverable	Water	200.8	296325
LCSD 570-296325/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	296325

Analysis Batch: 296466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123812-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	296325
570-123812-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	296325

General Chemistry

Analysis Batch: 296115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1	LXBMP0010_20230110	Total/NA	Water	SM 2540D	
570-123900-2	LXBMP0012_20230110	Total/NA	Water	SM 2540D	
MB 570-296115/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-296115/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-296115/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-123900-2 DU	LXBMP0012_20230110	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-1

Client Sample ID: LXBMP0010_20230110

Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295715	01/13/23 11:57	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			296129	01/16/23 10:33	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Total Recoverable	Prep	200.8			50 mL	50 mL	296325	01/17/23 08:06	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296449	01/17/23 13:01	Y2WS	EET CAL 4
	Instrument ID:	ICPMS10								
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	296115	01/16/23 11:39	BDH9	EET CAL 4
	Instrument ID:	NOEQUIP								

Client Sample ID: LXBMP0012_20230110

Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295715	01/13/23 11:57	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			296129	01/16/23 10:35	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Total Recoverable	Prep	200.8			50 mL	50 mL	296325	01/17/23 08:06	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296449	01/17/23 13:04	Y2WS	EET CAL 4
	Instrument ID:	ICPMS10								
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	296115	01/16/23 11:39	BDH9	EET CAL 4
	Instrument ID:	NOEQUIP								

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123900-1
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-1

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123900-1	LXBMP0010_20230110	Water	01/10/23 09:30	01/12/23 17:55
570-123900-2	LXBMP0012_20230110	Water	01/10/23 09:00	01/12/23 17:55

2310C

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other

Eurofins Calscience, Inc.

TestAmerica s services under this CoC shal be performed accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc. its subsidiaries and affil ates, and TestAmerica Laboratories Inc

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	▪ 2 weeks			
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002 009 and/or 011 Watersheds	▫ 2 days			
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200 8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0002_			G	WM	8	Y	Y	X	X	X	X	X	X	X
ILBMP0004_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010_20230110	01/10/23	0930	G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_20230110	01/10/23	0900	G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1

570-123900 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ▫ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.	
Relinquished by:	Company: SHA	Date/Time: ~~01/11/23 1135~~	Received by: FC	Date/Time: 1-12-23 1050
Relinquished by: FC	Company: 1/12/23/1755	Date/Time: 1/12/23/1050	Received by	Date/Time: 1/13/23 17..
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

19/1.9 2 3/2 3 5C12 VM
5c11

Form No. CA-C-WI-045 Rev 1.2, dated 1/8/2016

1/19/2023

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123900-1

Login Number: 123900
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/6/2023 4:30:55 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123900-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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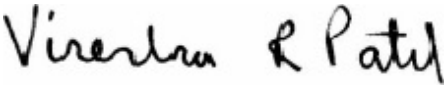
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123900-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123900-2

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.3º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: LXBMP0010_20230110 (570-123900-1), LXBMP0012_20230110 (570-123900-2), (CCV 320-651543/2) and (MB 320-649091/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-2

Client Sample ID: LXBMP0010_20230110 — Lab Sample ID: 570-123900-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000050	J,DX q MB	0.000048	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.00000034	J,DX MB	0.000048	0.00000011	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000029	J,DX MB	0.000048	0.00000013	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000020	J,DX q MB	0.000048	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000016	J,DX MB	0.000048	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000012	J,DX q MB	0.000048	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000091	J,DX q MB	0.000048	0.00000010	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000048	J,DX q MB	0.000048	0.00000099	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000041	J,DX q MB	0.000048	0.00000096	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000057	J,DX MB	0.000048	0.00000088	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000027	J,DX MB	0.000048	0.00000079	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000011	J,DX MB	0.000048	0.00000037	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000010	J,DX MB	0.000048	0.00000039	ug/L	1		1613B	Total/NA
OCDD	0.00022	MB	0.000096	0.0000013	ug/L	1		1613B	Total/NA
OCDF	0.000037	J,DX MB	0.000096	0.00000016	ug/L	1		1613B	Total/NA
Total TCDD	0.0000016	J,DX q MB	0.0000096	0.00000017	ug/L	1		1613B	Total/NA
Total TCDF	0.0000010	J,DX q MB	0.0000096	0.00000070	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000050	J,DX q MB	0.000048	0.00000020	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000013	J,DX MB	0.000048	0.00000011	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000085	J,DX q MB	0.000048	0.00000021	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000077	J,DX q MB	0.000048	0.00000088	ug/L	1		1613B	Total/NA
Total HpCDD	0.000048	J,DX MB	0.000048	0.00000079	ug/L	1		1613B	Total/NA
Total HpCDF	0.000029	J,DX MB	0.000048	0.00000037	ug/L	1		1613B	Total/NA

Client Sample ID: LXBMP0012_20230110 — Lab Sample ID: 570-123900-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000019	J,DX MB	0.000048	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000035	J,DX q MB	0.000048	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000027	J,DX q MB	0.000048	0.00000078	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000019	J,DX q MB	0.000048	0.00000075	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000040	J,DX q MB	0.000048	0.00000084	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: LXBMP0012_20230110 (Continued)

Lab Sample ID: 570-123900-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,4,6,7,8-HxCDF	0.00000014	J,DX q MB	0.000048	0.000000071	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000026	J,DX q MB	0.000048	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000012	J,DX q MB	0.000048	0.00000014	ug/L	1		1613B	Total/NA
OCDD	0.000025	J,DX MB	0.000096	0.00000037	ug/L	1		1613B	Total/NA
OCDF	0.0000030	J,DX MB	0.000096	0.00000017	ug/L	1		1613B	Total/NA
Total TCDD	0.0000016	J,DX MB	0.0000096	0.00000020	ug/L	1		1613B	Total/NA
Total TCDF	0.0000010	J,DX q MB	0.0000096	0.00000080	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000035	J,DX q MB	0.000048	0.00000016	ug/L	1		1613B	Total/NA
Total PeCDF	0.00000044	J,DX q MB	0.000048	0.00000010	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000040	J,DX q MB	0.000048	0.00000016	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000013	J,DX q MB	0.000048	0.000000071	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000065	J,DX q MB	0.000048	0.00000022	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000021	J,DX q MB	0.000048	0.00000014	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: LXBMP0010_20230110
Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000096	0.00000017	ug/L		01/25/23 04:38	01/28/23 20:21	1
1,2,3,7,8-PeCDD	**0.00000050**	**J,DX q MB**	0.000048	0.00000020	ug/L		01/25/23 04:38	01/28/23 20:21	1
1,2,3,7,8-PeCDF	**0.00000034**	**J,DX MB**	0.000048	0.00000011	ug/L		01/25/23 04:38	01/28/23 20:21	1
2,3,4,7,8-PeCDF	**0.00000029**	**J,DX MB**	0.000048	0.00000013	ug/L		01/25/23 04:38	01/28/23 20:21	1
1,2,3,4,7,8-HxCDD	**0.0000020**	**J,DX q MB**	0.000048	0.00000023	ug/L		01/25/23 04:38	01/28/23 20:21	1
1,2,3,6,7,8-HxCDD	**0.0000016**	**J,DX MB**	0.000048	0.00000023	ug/L		01/25/23 04:38	01/28/23 20:21	1
1,2,3,7,8,9-HxCDD	**0.0000012**	**J,DX q MB**	0.000048	0.00000021	ug/L		01/25/23 04:38	01/28/23 20:21	1
1,2,3,4,7,8-HxCDF	**0.00000091**	**J,DX q MB**	0.000048	0.00000010	ug/L		01/25/23 04:38	01/28/23 20:21	1
1,2,3,6,7,8-HxCDF	**0.00000048**	**J,DX q MB**	0.000048	0.00000099	ug/L		01/25/23 04:38	01/28/23 20:21	1
1,2,3,7,8,9-HxCDF	**0.00000041**	**J,DX q MB**	0.000048	0.00000096	ug/L		01/25/23 04:38	01/28/23 20:21	1
2,3,4,6,7,8-HxCDF	**0.00000057**	**J,DX MB**	0.000048	0.00000088	ug/L		01/25/23 04:38	01/28/23 20:21	1
1,2,3,4,6,7,8-HpCDD	**0.000027**	**J,DX MB**	0.000048	0.00000079	ug/L		01/25/23 04:38	01/28/23 20:21	1
1,2,3,4,6,7,8-HpCDF	**0.000011**	**J,DX MB**	0.000048	0.00000037	ug/L		01/25/23 04:38	01/28/23 20:21	1
1,2,3,4,7,8,9-HpCDF	**0.0000010**	**J,DX MB**	0.000048	0.00000039	ug/L		01/25/23 04:38	01/28/23 20:21	1
OCDD	**0.00022**	**MB**	0.000096	0.0000013	ug/L		01/25/23 04:38	01/28/23 20:21	1
OCDF	**0.000037**	**J,DX MB**	0.000096	0.00000016	ug/L		01/25/23 04:38	01/28/23 20:21	1
Total TCDD	**0.0000016**	**J,DX q MB**	0.0000096	0.00000017	ug/L		01/25/23 04:38	01/28/23 20:21	1
Total TCDF	**0.0000010**	**J,DX q MB**	0.0000096	0.00000070	ug/L		01/25/23 04:38	01/28/23 20:21	1
Total PeCDD	**0.00000050**	**J,DX q MB**	0.000048	0.00000020	ug/L		01/25/23 04:38	01/28/23 20:21	1
Total PeCDF	**0.0000013**	**J,DX MB**	0.000048	0.00000011	ug/L		01/25/23 04:38	01/28/23 20:21	1
Total HxCDD	**0.0000085**	**J,DX q MB**	0.000048	0.00000021	ug/L		01/25/23 04:38	01/28/23 20:21	1
Total HxCDF	**0.0000077**	**J,DX q MB**	0.000048	0.00000088	ug/L		01/25/23 04:38	01/28/23 20:21	1
Total HpCDD	**0.000048**	**J,DX MB**	0.000048	0.00000079	ug/L		01/25/23 04:38	01/28/23 20:21	1
Total HpCDF	**0.000029**	**J,DX MB**	0.000048	0.00000037	ug/L		01/25/23 04:38	01/28/23 20:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*84*		*25 - 164*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-2,3,7,8-TCDF	*88*		*24 - 169*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-1,2,3,7,8-PeCDD	*81*		*25 - 181*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-1,2,3,7,8-PeCDF	*86*		*24 - 185*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-2,3,4,7,8-PeCDF	*78*		*21 - 178*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-1,2,3,4,7,8-HxCDD	*73*		*32 - 141*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-1,2,3,6,7,8-HxCDD	*82*		*28 - 130*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-1,2,3,4,7,8-HxCDF	*76*		*26 - 152*	*01/25/23 04:38*	*01/28/23 20:21*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LXBMP0010_20230110
Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,6,7,8-HxCDF	*85*		*26 - 123*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-1,2,3,7,8,9-HxCDF	*94*		*29 - 147*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-2,3,4,6,7,8-HxCDF	*94*		*28 - 136*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*83*		*23 - 140*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*79*		*28 - 143*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*88*		*26 - 138*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-OCDD	*93*		*17 - 157*	*01/25/23 04:38*	*01/28/23 20:21*	*1*
13C-OCDF	*95*		*17 - 157*	*01/25/23 04:38*	*01/28/23 20:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*	*01/25/23 04:38*	*01/28/23 20:21*	*1*

Client Sample ID: LXBMP0012_20230110
Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000096	0.00000020	ug/L		01/25/23 04:38	01/28/23 21:07	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000016	ug/L		01/25/23 04:38	01/28/23 21:07	1
1,2,3,7,8-PeCDF	ND		0.000048	0.00000010	ug/L		01/25/23 04:38	01/28/23 21:07	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000012	ug/L		01/25/23 04:38	01/28/23 21:07	1
1,2,3,4,7,8-HxCDD	**0.0000019**	**J,DX MB**	0.000048	0.00000018	ug/L		01/25/23 04:38	01/28/23 21:07	1
1,2,3,6,7,8-HxCDD	**0.00000035**	**J,DX q MB**	0.000048	0.00000018	ug/L		01/25/23 04:38	01/28/23 21:07	1
1,2,3,7,8,9-HxCDD	ND		0.000048	0.00000016	ug/L		01/25/23 04:38	01/28/23 21:07	1
1,2,3,4,7,8-HxCDF	**0.00000027**	**J,DX q MB**	0.000048	0.00000078	ug/L		01/25/23 04:38	01/28/23 21:07	1
1,2,3,6,7,8-HxCDF	**0.00000019**	**J,DX q MB**	0.000048	0.00000075	ug/L		01/25/23 04:38	01/28/23 21:07	1
1,2,3,7,8,9-HxCDF	**0.00000040**	**J,DX q MB**	0.000048	0.00000084	ug/L		01/25/23 04:38	01/28/23 21:07	1
2,3,4,6,7,8-HxCDF	**0.00000014**	**J,DX q MB**	0.000048	0.00000071	ug/L		01/25/23 04:38	01/28/23 21:07	1
1,2,3,4,6,7,8-HpCDD	**0.0000026**	**J,DX q MB**	0.000048	0.0000002	ug/L		01/25/23 04:38	01/28/23 21:07	1
1,2,3,4,6,7,8-HpCDF	**0.0000012**	**J,DX q MB**	0.000048	0.00000014	ug/L		01/25/23 04:38	01/28/23 21:07	1
1,2,3,4,7,8,9-HpCDF	ND		0.000048	0.00000016	ug/L		01/25/23 04:38	01/28/23 21:07	1
OCDD	**0.000025**	**J,DX MB**	0.000096	0.00000037	ug/L		01/25/23 04:38	01/28/23 21:07	1
OCDF	**0.0000030**	**J,DX MB**	0.000096	0.00000017	ug/L		01/25/23 04:38	01/28/23 21:07	1
Total TCDD	**0.0000016**	**J,DX MB**	0.0000096	0.00000020	ug/L		01/25/23 04:38	01/28/23 21:07	1
Total TCDF	**0.0000010**	**J,DX q MB**	0.0000096	0.00000080	ug/L		01/25/23 04:38	01/28/23 21:07	1
Total PeCDD	**0.00000035**	**J,DX q MB**	0.000048	0.00000016	ug/L		01/25/23 04:38	01/28/23 21:07	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LXBMP0012_20230110
Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total PeCDF	0.00000044	J,DX q MB	0.000048	0.00000010	ug/L		01/25/23 04:38	01/28/23 21:07	1
Total HxCDD	0.0000040	J,DX q MB	0.000048	0.00000016	ug/L		01/25/23 04:38	01/28/23 21:07	1
Total HxCDF	0.0000013	J,DX q MB	0.000048	0.00000071	ug/L		01/25/23 04:38	01/28/23 21:07	1
Total HpCDD	0.0000065	J,DX q MB	0.000048	0.00000022	ug/L		01/25/23 04:38	01/28/23 21:07	1
Total HpCDF	0.0000021	J,DX q MB	0.000048	0.00000014	ug/L		01/25/23 04:38	01/28/23 21:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*81*		*25 - 164*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-2,3,7,8-TCDF	*86*		*24 - 169*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-1,2,3,7,8-PeCDD	*79*		*25 - 181*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-1,2,3,7,8-PeCDF	*84*		*24 - 185*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-2,3,4,7,8-PeCDF	*83*		*21 - 178*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-1,2,3,4,7,8-HxCDD	*84*		*32 - 141*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-1,2,3,6,7,8-HxCDD	*87*		*28 - 130*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-1,2,3,4,7,8-HxCDF	*84*		*26 - 152*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-1,2,3,6,7,8-HxCDF	*95*		*26 - 123*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-1,2,3,7,8,9-HxCDF	*92*		*29 - 147*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-2,3,4,6,7,8-HxCDF	*95*		*28 - 136*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*81*		*23 - 140*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*28 - 143*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*87*		*26 - 138*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-OCDD	*88*		*17 - 157*	*01/25/23 04:38*	*01/28/23 21:07*	*1*
13C-OCDF	*90*		*17 - 157*	*01/25/23 04:38*	*01/28/23 21:07*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*01/25/23 04:38*	*01/28/23 21:07*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: LXBMP0010_20230110
Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000096	0.00000033	ug/L		01/25/23 04:38	02/03/23 19:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*82*		*24 - 169*	*01/25/23 04:38*	*02/03/23 19:36*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*109*		*35 - 197*	*01/25/23 04:38*	*02/03/23 19:36*	*1*

Client Sample ID: LXBMP0012_20230110
Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000096	0.00000033	ug/L		01/25/23 04:38	02/03/23 20:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*83*		*24 - 169*	*01/25/23 04:38*	*02/03/23 20:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*111*		*35 - 197*	*01/25/23 04:38*	*02/03/23 20:13*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-123900-1	LXBMP0010_20230110	93
570-123900-1 - RA	LXBMP0010_20230110	109
570-123900-2	LXBMP0012_20230110	94
570-123900-2 - RA	LXBMP0012_20230110	111
MB 320-649091/1-A	Method Blank	95
MB 320-649091/1-A - RA	Method Blank	107

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-649091/2-A	Lab Control Sample	92
LCSD 320-649091/3-A	Lab Control Sample Dup	93

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-123900-1	LXBMP0010_20230110	84	88	81	86	78	73	82	76
570-123900-1 - RA	LXBMP0010_20230110		82						
570-123900-2	LXBMP0012_20230110	81	86	79	84	83	84	87	84
570-123900-2 - RA	LXBMP0012_20230110		83						
MB 320-649091/1-A	Method Blank	79	84	77	82	83	81	89	84
MB 320-649091/1-A - RA	Method Blank		78						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-123900-1	LXBMP0010_20230110	85	94	94	83	79	88	93	95
570-123900-1 - RA	LXBMP0010_20230110								
570-123900-2	LXBMP0012_20230110	95	92	95	81	83	87	88	90
570-123900-2 - RA	LXBMP0012_20230110								
MB 320-649091/1-A	Method Blank	93	89	93	76	78	81	84	86
MB 320-649091/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-649091/2-A	Lab Control Sample	76	80	75	80	79	78	81	76
LCSD 320-649091/3-A	Lab Control Sample Dup	81	86	81	85	83	80	85	80

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-649091/2-A	Lab Control Sample	86	86	88	75	76	79	85	86
LCSD 320-649091/3-A	Lab Control Sample Dup	90	92	93	81	82	87	91	93

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123900-2
Project/Site: Boeing SSFL ISRA and BMP

TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-649091/1-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649091

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000024	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8-PeCDD	0.000000800	J,DX	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8-PeCDF	0.000000544	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1
2,3,4,7,8-PeCDF	0.000000644	J,DX	0.000050	0.00000017	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,7,8-HxCDD	0.00000283	J,DX	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,6,7,8-HxCDD	0.000000633	J,DX q	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8,9-HxCDD	0.000000719	J,DX q	0.000050	0.00000018	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,7,8-HxCDF	0.000000820	J,DX	0.000050	0.00000012	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,6,7,8-HxCDF	0.000000777	J,DX q	0.000050	0.00000012	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,7,8,9-HxCDF	0.00000120	J,DX	0.000050	0.00000013	ug/L		01/25/23 04:38	01/28/23 15:42	1
2,3,4,6,7,8-HxCDF	0.000000608	J,DX	0.000050	0.00000011	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,6,7,8-HpCDD	0.00000229	J,DX	0.000050	0.00000026	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,6,7,8-HpCDF	0.00000121	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1
1,2,3,4,7,8,9-HpCDF	0.000000899	J,DX	0.000050	0.00000018	ug/L		01/25/23 04:38	01/28/23 15:42	1
OCDD	0.0000158	J,DX q	0.00010	0.00000025	ug/L		01/25/23 04:38	01/28/23 15:42	1
OCDF	0.00000284	J,DX	0.00010	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total TCDD	0.00000396	J,DX q	0.000010	0.00000024	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total TCDF	0.000000659	J,DX q	0.000010	0.00000013	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total PeCDD	0.000000800	J,DX	0.000050	0.00000020	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total PeCDF	0.00000119	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HxCDD	0.00000418	J,DX q	0.000050	0.00000018	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HxCDF	0.00000341	J,DX q	0.000050	0.00000011	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HpCDD	0.00000499	J,DX q	0.000050	0.00000026	ug/L		01/25/23 04:38	01/28/23 15:42	1
Total HpCDF	0.00000235	J,DX q	0.000050	0.00000015	ug/L		01/25/23 04:38	01/28/23 15:42	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*25 - 164*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-2,3,7,8-TCDF	*84*		*24 - 169*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,7,8-PeCDD	*77*		*25 - 181*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,7,8-PeCDF	*82*		*24 - 185*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-2,3,4,7,8-PeCDF	*83*		*21 - 178*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*32 - 141*	*01/25/23 04:38*	*01/28/23 15:42*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-649091/1-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649091

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	89		28 - 130	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,7,8-HxCDF	84		26 - 152	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,6,7,8-HxCDF	93		26 - 123	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,7,8,9-HxCDF	89		29 - 147	01/25/23 04:38	01/28/23 15:42	1
13C-2,3,4,6,7,8-HxCDF	93		28 - 136	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,6,7,8-HpCDD	76		23 - 140	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,6,7,8-HpCDF	78		28 - 143	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	01/25/23 04:38	01/28/23 15:42	1
13C-OCDD	84		17 - 157	01/25/23 04:38	01/28/23 15:42	1
13C-OCDF	86		17 - 157	01/25/23 04:38	01/28/23 15:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	95		35 - 197	01/25/23 04:38	01/28/23 15:42	1

Lab Sample ID: LCS 320-649091/2-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649091

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000203		ug/L		102	67 - 158
2,3,7,8-TCDF	0.000200	0.000205		ug/L		103	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000967		ug/L		97	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000964		ug/L		96	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000993		ug/L		99	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000925		ug/L		93	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000965		ug/L		97	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000925		ug/L		92	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000974		ug/L		97	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000945		ug/L		95	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000954		ug/L		95	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000959		ug/L		96	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000949		ug/L		95	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000968		ug/L		97	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000955		ug/L		95	78 - 138
OCDD	0.00200	0.00189		ug/L		94	78 - 144
OCDF	0.00200	0.00197		ug/L		99	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	76		20 - 175
13C-2,3,7,8-TCDF	80		22 - 152
13C-1,2,3,7,8-PeCDD	75		21 - 227
13C-1,2,3,7,8-PeCDF	80		21 - 192
13C-2,3,4,7,8-PeCDF	79		13 - 328
13C-1,2,3,4,7,8-HxCDD	78		21 - 193
13C-1,2,3,6,7,8-HxCDD	81		25 - 163
13C-1,2,3,4,7,8-HxCDF	76		19 - 202
13C-1,2,3,6,7,8-HxCDF	86		21 - 159
13C-1,2,3,7,8,9-HxCDF	86		17 - 205

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-649091/2-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649091

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,4,6,7,8-HxCDF	88		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	75		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	76		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	85		13 - 199
13C-OCDF	86		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

Lab Sample ID: LCSD 320-649091/3-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649091

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000207		ug/L		103	67 - 158	2	50
2,3,7,8-TCDF			0.000200	0.000210		ug/L		105	75 - 158	2	50
1,2,3,7,8-PeCDD			0.00100	0.000981		ug/L		98	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.00100		ug/L		100	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.00101		ug/L		101	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000956		ug/L		96	70 - 164	3	50
1,2,3,6,7,8-HxCDD			0.00100	0.00100		ug/L		100	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.000997		ug/L		100	64 - 162	8	50
1,2,3,4,7,8-HxCDF			0.00100	0.000994		ug/L		99	72 - 134	2	50
1,2,3,6,7,8-HxCDF			0.00100	0.000990		ug/L		99	84 - 130	5	50
1,2,3,7,8,9-HxCDF			0.00100	0.000975		ug/L		97	78 - 130	2	50
2,3,4,6,7,8-HxCDF			0.00100	0.000996		ug/L		100	70 - 156	4	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000985		ug/L		99	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00100		ug/L		100	82 - 122	4	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000984		ug/L		98	78 - 138	3	50
OCDD			0.00200	0.00219		ug/L		109	78 - 144	15	50
OCDF			0.00200	0.00206		ug/L		103	63 - 170	4	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	81		20 - 175
13C-2,3,7,8-TCDF	86		22 - 152
13C-1,2,3,7,8-PeCDD	81		21 - 227
13C-1,2,3,7,8-PeCDF	85		21 - 192
13C-2,3,4,7,8-PeCDF	83		13 - 328
13C-1,2,3,4,7,8-HxCDD	80		21 - 193
13C-1,2,3,6,7,8-HxCDD	85		25 - 163
13C-1,2,3,4,7,8-HxCDF	80		19 - 202
13C-1,2,3,6,7,8-HxCDF	90		21 - 159
13C-1,2,3,7,8,9-HxCDF	92		17 - 205
13C-2,3,4,6,7,8-HxCDF	93		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	81		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	82		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	87		20 - 186

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-649091/3-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649091

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-OCDD	91		13 - 199
13C-OCDF	93		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	93		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-649091/1-A
Matrix: Water
Analysis Batch: 651543

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649091

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000035	ug/L		01/25/23 04:38	02/03/23 17:08	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	78		24 - 169	01/25/23 04:38	02/03/23 17:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	107		35 - 197	01/25/23 04:38	02/03/23 17:08	1

Specialty Organics

Prep Batch: 649091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1 - RA	LXBMP0010_20230110	Total/NA	Water	1613B	
570-123900-1	LXBMP0010_20230110	Total/NA	Water	1613B	
570-123900-2 - RA	LXBMP0012_20230110	Total/NA	Water	1613B	
570-123900-2	LXBMP0012_20230110	Total/NA	Water	1613B	
MB 320-649091/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-649091/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-649091/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-649091/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 650047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1	LXBMP0010_20230110	Total/NA	Water	1613B	649091
570-123900-2	LXBMP0012_20230110	Total/NA	Water	1613B	649091
MB 320-649091/1-A	Method Blank	Total/NA	Water	1613B	649091
LCS 320-649091/2-A	Lab Control Sample	Total/NA	Water	1613B	649091
LCSD 320-649091/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	649091

Analysis Batch: 651543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1 - RA	LXBMP0010_20230110	Total/NA	Water	1613B	649091
570-123900-2 - RA	LXBMP0012_20230110	Total/NA	Water	1613B	649091
MB 320-649091/1-A - RA	Method Blank	Total/NA	Water	1613B	649091

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-2

Client Sample ID: LXBMP0010_20230110

Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1045.5 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651543	02/03/23 19:36	GRB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1045.5 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650047	01/28/23 20:21	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: LXBMP0012_20230110

Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1039.2 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651543	02/03/23 20:13	GRB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1039.2 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650047	01/28/23 21:07	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-2

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123900-1	LXBMP0010_20230110	Water	01/10/23 09:30	01/12/23 17:55
570-123900-2	LXBMP0012_20230110	Water	01/10/23 09:00	01/12/23 17:55

23 IOC

Chain of Custody Record for Chain of Custody Record

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2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other

TestAmerica s services under this CoC shal be performed accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc. its subsidiaries and affil ates, and TestAmerica Laboratories Inc

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	▫ 2 weeks			
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002 009 and/or 011 Watersheds	▫ 2 days			
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0002_			G	WM	8	Y	Y	X	X	X	X	X	X	X
ILBMP0004_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010_20230110	01/10/23	0930	G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_20230110	01/10/23	0900	G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X
								4	1	2	1	1	1	1

570-123900 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ▫ Yes | Custody Seal No. | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
	SHA	~~01/12/23 1735~~	FC	1/12/23 1050
Relinquished by:	Company:	Date/Time:	Received by	Date/Time:
	EC 1/12/23/1755	1/12/23/1050		1/13/23 17..
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

19/1.9 2 3/2 3 5C12 VM 5c11

Form No. CA-C-WI-045 Rev 1.2, dated 1/8/2016

2/6/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204093.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123900-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/30/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
LXBMP0010_20230110 (570-123900-1)	1/10/23	09:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
LXBMP0012_20230110 (570-123900-2)	1/10/23	09:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	01/13/23 14:20	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123900-2

Login Number: 123900
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123900-2

Login Number: 123900
List Number: 3
Creator: Fisher, Jamyiah L

List Source: Eurofins Sacramento
List Creation: 01/16/23 11:40 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/19/2023 4:04:44 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123900-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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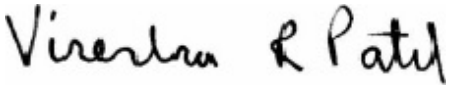
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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1/19/2023 4:04:44 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Job ID: 570-123900-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123900-3

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.3º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Client Sample ID: LXBMP0010_20230110 — Lab Sample ID: 570-123900-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0049		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0024		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: LXBMP0012_20230110 — Lab Sample ID: 570-123900-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.021		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.019		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: LXBMP0010_20230110
Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0049		0.00050	0.000079	ug/L			01/17/23 18:31	1

Client Sample ID: LXBMP0012_20230110
Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.021		0.00050	0.000079	ug/L			01/17/23 18:35	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: LXBMP0010_20230110
Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0024		0.00050	0.000079	ug/L			01/17/23 18:48	1

Client Sample ID: LXBMP0012_20230110
Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.019		0.00050	0.000079	ug/L			01/17/23 18:52	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-415709/18
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 14:43	1

Lab Sample ID: MB 580-415709/19
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 14:47	1

Lab Sample ID: MB 580-415709/20
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 14:51	1

Lab Sample ID: LCS 580-415709/26
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00460		ug/L		92	77 - 123		

Lab Sample ID: LCSD 580-415709/27
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00468		ug/L		94	77 - 123	2	24

Lab Sample ID: 570-123916-E-1 MS
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00080		0.00500	0.00551		ug/L		94	71 - 125		

Lab Sample ID: 570-123916-E-1 MSD
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00080		0.00500	0.00544		ug/L		93	71 - 125	1	24

Lab Sample ID: 580-122215-A-1 MS
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00054		0.00500	0.00539		ug/L		97	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-122215-A-1 MSD
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00054		0.00500	0.00530		ug/L		95	71 - 125	2	24

Lab Sample ID: MB 580-415460/1-A
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 18:23	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Metals

Filtration Batch: 415460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1	LXBMP0010_20230110	Dissolved	Water	Filtration	
570-123900-2	LXBMP0012_20230110	Dissolved	Water	Filtration	
MB 580-415460/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 415709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1	LXBMP0010_20230110	Dissolved	Water	1631E	415460
570-123900-1	LXBMP0010_20230110	Total/NA	Water	1631E	
570-123900-2	LXBMP0012_20230110	Dissolved	Water	1631E	415460
570-123900-2	LXBMP0012_20230110	Total/NA	Water	1631E	
MB 580-415460/1-A	Method Blank	Dissolved	Water	1631E	415460
MB 580-415709/18	Method Blank	Total/NA	Water	1631E	
MB 580-415709/19	Method Blank	Total/NA	Water	1631E	
MB 580-415709/20	Method Blank	Total/NA	Water	1631E	
LCS 580-415709/26	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-415709/27	Lab Control Sample Dup	Total/NA	Water	1631E	
570-123916-E-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-123916-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-122215-A-1 MS	Matrix Spike	Total/NA	Water	1631E	
580-122215-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Client Sample ID: LXBMP0010_20230110

Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415460	01/16/23 10:41	DRM	EET SEA
Dissolved	Analysis	1631E		1			415709	01/17/23 18:48	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415709	01/17/23 18:31	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: LXBMP0012_20230110

Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415460	01/16/23 10:41	DRM	EET SEA
Dissolved	Analysis	1631E		1			415709	01/17/23 18:52	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415709	01/17/23 18:35	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123900-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123900-1	LXBMP0010_20230110	Water	01/10/23 09:30	01/12/23 17:55
570-123900-2	LXBMP0012_20230110	Water	01/10/23 09:00	01/12/23 17:55

2310C

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other

Eurofins Calscience, Inc.

TestAmerica s services under this CoC shal be performed accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc. its subsidiaries and affil ates, and TestAmerica Laboratories Inc

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	▪ 2 weeks			
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002 009 and/or 011 Watersheds	▫ 2 days			
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200 8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0002_			G	WM	8	Y	Y	X	X	X	X	X	X	X
ILBMP0004_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010_20230110	01/10/23	0930	G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_20230110	01/10/23	0900	G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X
								4	1	2	1	1	1	1

570-123900 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ▫ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.	
Relinquished by:	Company: SHA	Date/Time: ~~01/11/23 1135~~	Received by: FC	Date/Time: 1/12/23 1050
Relinquished by: FC	Company: 1/12/23/1755	Date/Time: 1/12/23/1050	Received by	Date/Time: 1/13/23 17..
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

19/1.9 2 3/2 3 5C12 VM
5c11

Form No. CA-C-WI-045 Rev 1.2, dated 1/8/2016

1/19/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204079.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123900-3
Address: 5755 8th Street East, ,	Due Date Requested: 1/30/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0010_20230110 (570-123900-1)	1/10/23	09:30 Pacific		Water			X	X	2	
LXBMP0012_20230110 (570-123900-2)	1/10/23	09:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		6/13/23 13:20	EC		1/4/23 925	EDN
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123900-3

Login Number: 123900
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123900-3

Login Number: 123900
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/16/23 10:37 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123900-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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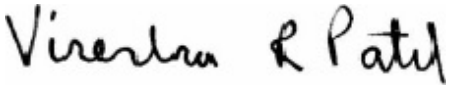
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123900-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123900-4

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.9º C and 2.3º C.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-4

Client Sample ID: LXBMP0010_20230110 — Lab Sample ID: 570-123900-1

No Detections.

Client Sample ID: LXBMP0012_20230110 — Lab Sample ID: 570-123900-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	4.21		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	3.81		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	69.55		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	73.76		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	22.43		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: LXBMP0010_20230110
Date Collected: 01/10/23 09:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/04/23 13:34	1

Client Sample ID: LXBMP0012_20230110
Date Collected: 01/10/23 09:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123900-2
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**4.21**		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	**3.81**		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	**69.55**		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	**73.76**		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	**22.43**		0.01	0.01	%			02/04/23 13:34	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	01/10/23
Date Received:	01/12/23
Work Order No:	570-123900
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
LXBMP0010_20230110		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

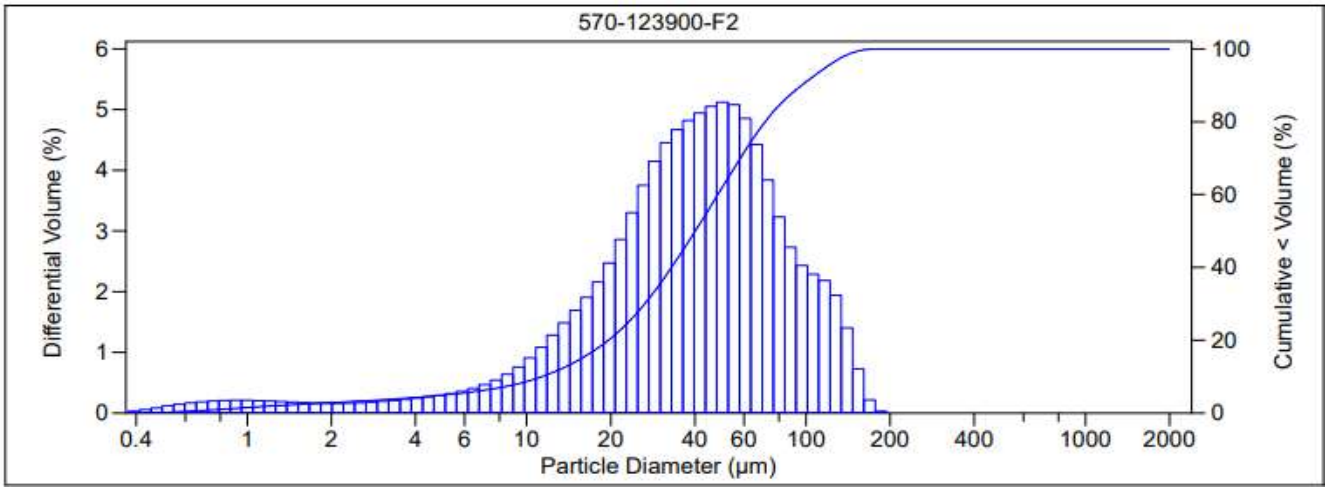
Haley & Aldrich, Inc.

Date Sampled:	01/10/23
Date Received:	01/12/23
Work Order No:	570-123900
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
LXBMP0010_20230110		VF clay+colloids	0.048

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	3.81	22.43	69.55	4.21	73.76



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

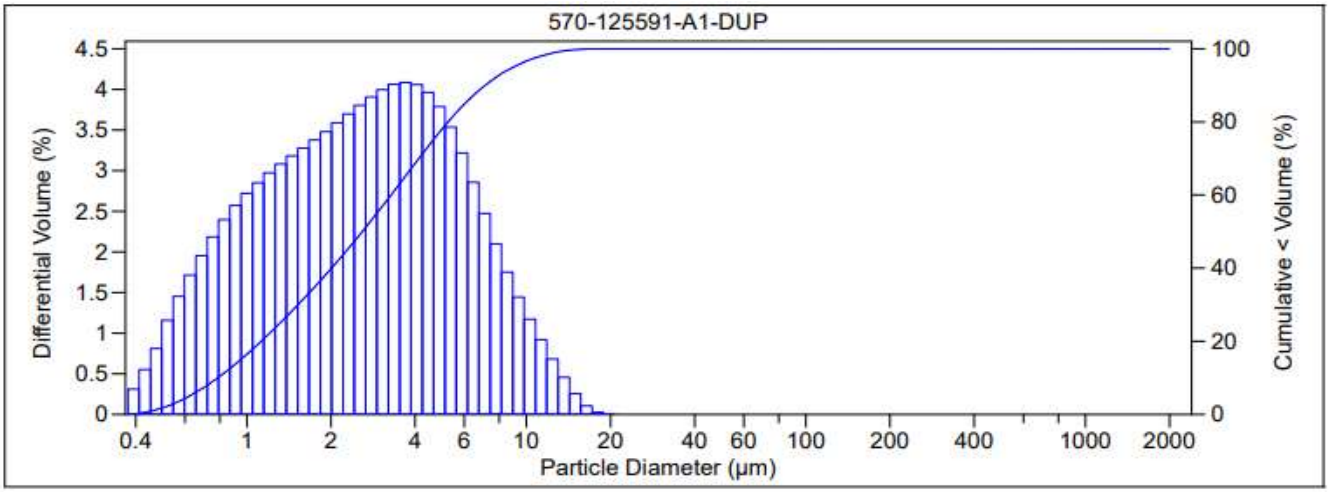
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125590
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13130

Sample ID	Depth ft	Description	Mean Grain Size mm
130-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	32.31	67.69	100.00



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

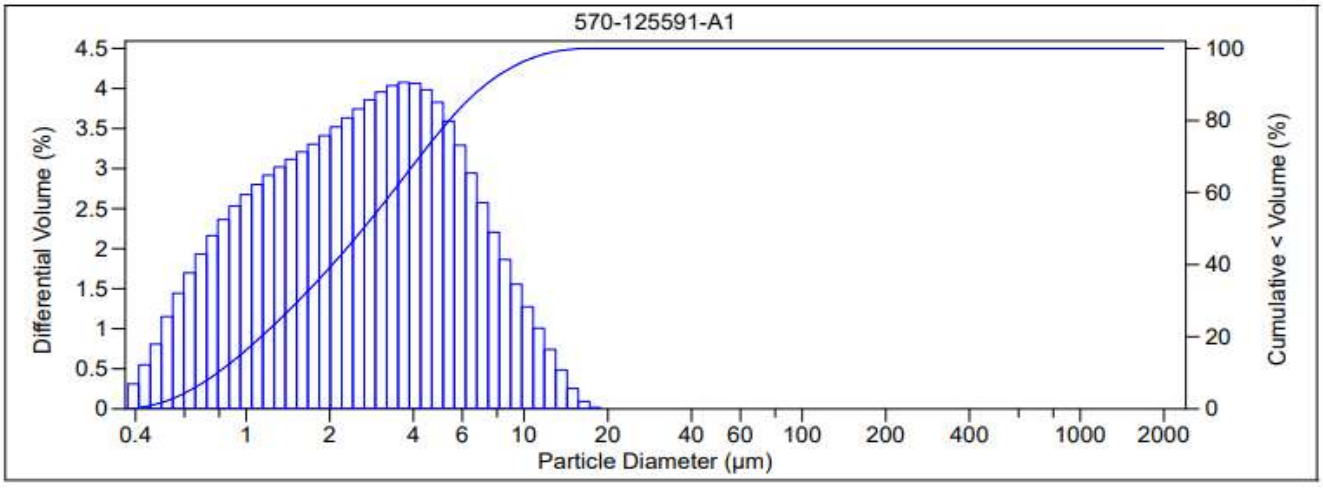
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125591
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13131

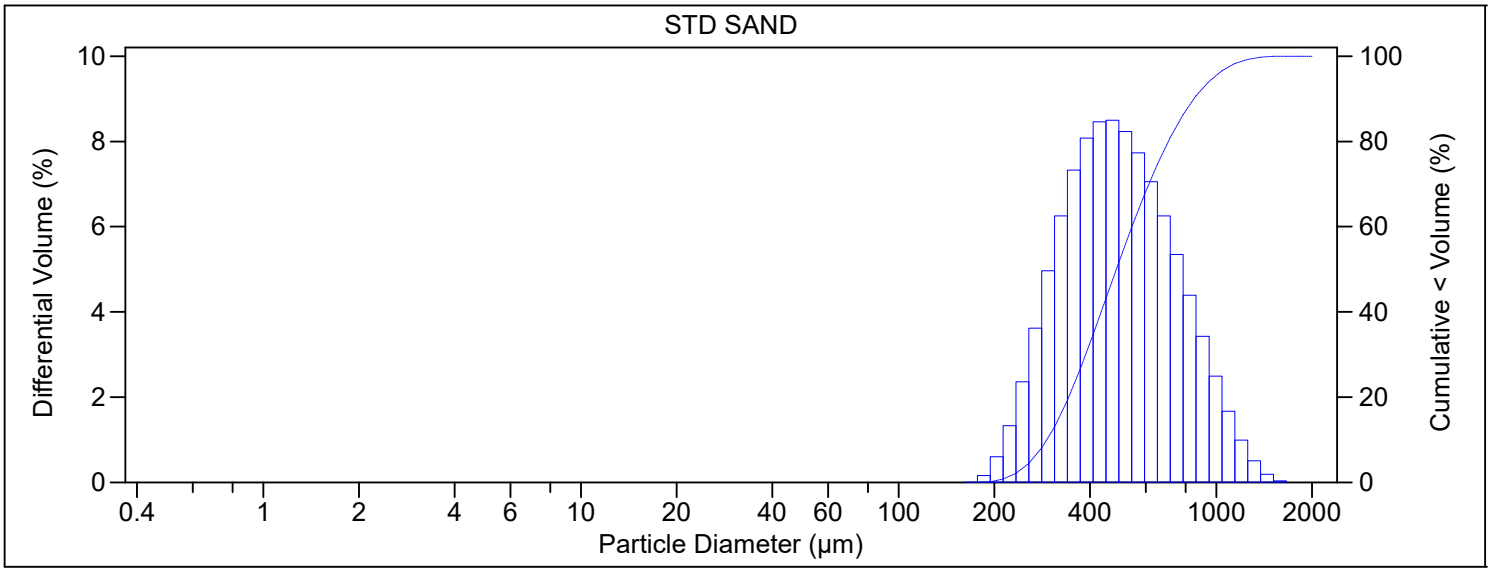
Sample ID	Depth ft	Description	Mean Grain Size mm
131-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	33.28	66.72	100.00



V 3.0

File name:	C:\LS13320\STD SAND_ 3 Feb 2023_19.52.20.$ls		
	STD SAND_ 3 Feb 2023_19.52.20.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	22		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	19:51 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 3 Feb 2023_19.52.20.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	534.6 µm	S.D.:	224.4 µm
Median:	485.0 µm	Variance:	50358 µm^2
Mean/Median ratio:	1.102	Skewness:	1.068 Right skewed
Mode:	471.1 µm	Kurtosis:	1.067 Leptokurtic

d_{10}: 292.7 µm d_{50}: 485.0 µm d_{90}: 851.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.02	Median:	1.04	Deviation:	0.60
Skewness:	-0.06	Kurtosis:	0.93		

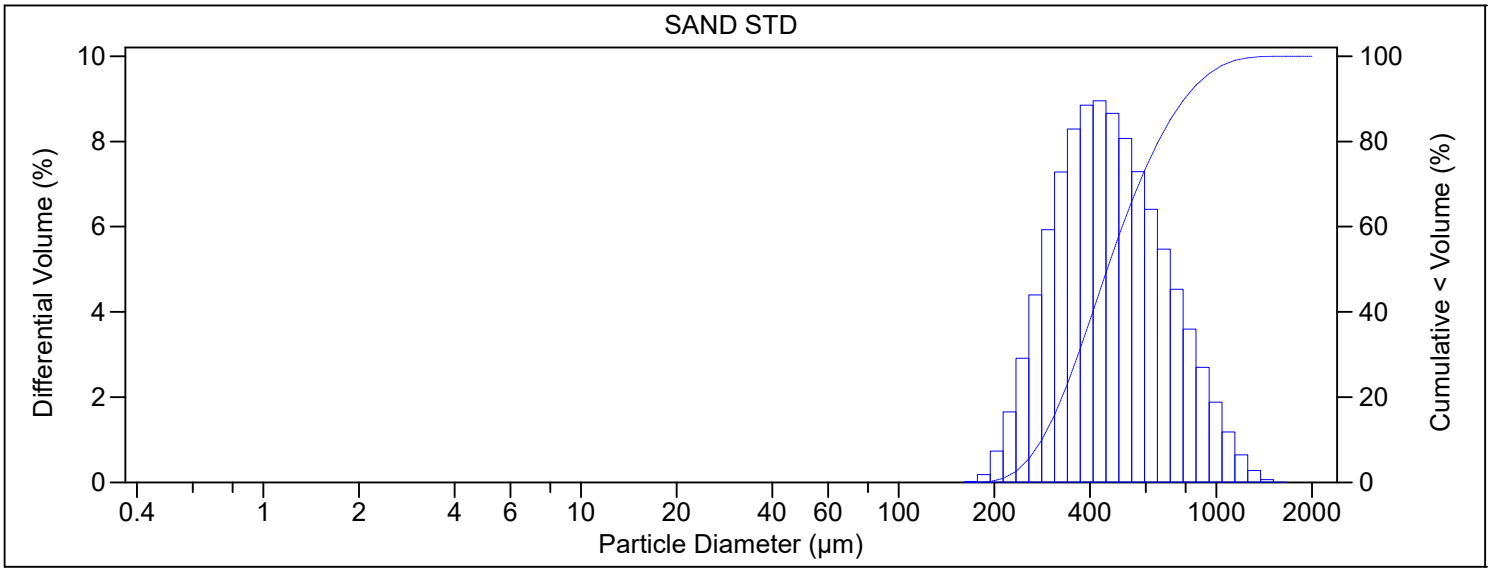
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
260.7 µm	323.9 µm	365.7 µm	434.7 µm	485.0 µm	656.2 µm	756.9 µm	981.3 µm

Particle Diameter µm	STD SAND_ 3 Feb 2023 _19.52.20 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	3.75
250	49.0
500	42.8
1000	4.50
2000	

STD SAND_ 3 Feb 2023_19.52.20.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.99
0.412	0	22.73	0	1255	0.51
0.452	0	24.95	0	1377	0.19
0.496	0	27.39	0	1512	0.034
0.545	0	30.07	0	1660	0.0013
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.011		
3.206	0	176.9	0.16		
3.519	0	194.2	0.60		
3.863	0	213.2	1.33		
4.241	0	234.1	2.36		
4.656	0	256.9	3.62		
5.111	0	282.1	4.97		
5.611	0	309.6	6.26		
6.159	0	339.9	7.33		
6.761	0	373.1	8.07		
7.422	0	409.6	8.46		
8.148	0	449.7	8.50		
8.944	0	493.6	8.23		
9.819	0	541.9	7.73		
10.78	0	594.9	7.06		
11.83	0	653.0	6.25		
12.99	0	716.9	5.35		
14.26	0	786.9	4.39		
15.65	0	863.9	3.43		
17.18	0	948.3	2.50		
18.86	0	1041	1.67		

File name:	C:\LS13320\SAND STD_ 3 Feb 2023_20.33.47.$ls		
	SAND STD_ 3 Feb 2023_20.33.47.$ls		
File ID:	SAND STD		
Sample ID:	SAND STD		
Operator:	C6FB		
Run number:	24		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:32 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) SAND STD_ 3 Feb 2023_20.33.47.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	501.8 µm	S.D.:	207.4 µm
Median:	453.7 µm	Variance:	42999 µm^2
Mean/Median ratio:	1.106	Skewness:	1.134 Right skewed
Mode:	429.2 µm	Kurtosis:	1.262 Leptokurtic

d_{10}: 282.5 µm d_{50}: 453.7 µm d_{90}: 794.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.11	Median:	1.14	Deviation:	0.58
Skewness:	-0.08	Kurtosis:	0.94		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
253.0 µm	310.4 µm	347.5 µm	408.6 µm	453.7 µm	611.0 µm	703.9 µm	919.1 µm

Particle Diameter µm	SAND STD_ 3 Feb 2023 _20.33.47 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	4.62
250	54.3
500	38.1
1000	3.02
2000	

SAND STD_ 3 Feb 2023_20.33.47.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.65
0.412	0	22.73	0	1255	0.28
0.452	0	24.95	0	1377	0.068
0.496	0	27.39	0	1512	0.0041
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.012		
3.206	0	176.9	0.19		
3.519	0	194.2	0.74		
3.863	0	213.2	1.65		
4.241	0	234.1	2.91		
4.656	0	256.9	4.40		
5.111	0	282.1	5.93		
5.611	0	309.6	7.28		
6.159	0	339.9	8.29		
6.761	0	373.1	8.85		
7.422	0	409.6	8.95		
8.148	0	449.7	8.66		
8.944	0	493.6	8.07		
9.819	0	541.9	7.29		
10.78	0	594.9	6.41		
11.83	0	653.0	5.48		
12.99	0	716.9	4.53		
14.26	0	786.9	3.59		
15.65	0	863.9	2.70		
17.18	0	948.3	1.88		
18.86	0	1041	1.18		

QC Sample Results

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-125591-A-1 DU
Matrix: Water
Analysis Batch: 301228

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Liy&Nhss Hyt 0P00931 ((m	)) P72			) 7P3		G				1	20
Loycsn Bytr N0P5((Ho 1((m	v D			v D		G				v l	20
Leten Bytr N0P125 Ho 0P25((m	v D			v D		G				v l	20
ucyVni NFonyHnc Hyt 2 ((m	v D			v D		G				v l	20
%nre8(Bytr N0P25 Ho 0P5 ((m	v D			v D		G				v l	20
BeiHN0P00931 Ho 0P0) 25((m	99P26			92P91		G				9	20
ToHyi BeiHyt r Liy&N0 Ho 0P0) 2) ((m	100P00			100P00		G				0	20
4nc&Loycsn Bytr N1 Ho 2((m	v D			v D		G				v l	20
4nc&Leten Bytr N0P0) 25 Ho 0P125 ((m	v D			v D		G				v l	20

Geotechnical

Analysis Batch: 301228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123900-1	LXBMP0010_20230110	Total/NA	Water	D4464	
570-123900-2	LXBMP0012_20230110	Total/NA	Water	D4464	
LCS 570-301228/22	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-301228/24	Lab Control Sample Dup	Total/NA	Water	D4464	
570-125591-A-1 DU	Duplicate	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-4

Client Sample ID: LXBMP0010_20230110

Lab Sample ID: 570-123900-1

Date Collected: 01/10/23 09:30

Matrix: Water

Date Received: 01/12/23 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/u A	Analysis	D4464		1			30122N	02/04/23 13:34	C6FB	EET CAL 4
	InstrmOent ID: u QEU=IP									

Client Sample ID: LXBMP0012_20230110

Lab Sample ID: 570-123900-2

Date Collected: 01/10/23 09:00

Matrix: Water

Date Received: 01/12/23 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/u A	Analysis	D4464		1			30122N	02/04/23 13:34	C6FB	EET CAL 4
	InstrmOent ID: u QEU=IP									

Laboratory References:

EET CAL 4 f Emro8ns Calscience Tmstin, 2N41 Dow Avenme, Tmstin, CA 927N0, TEL (714)N95-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-129300-P

j ro/ectSBite: goeinF BBLRIBMA and gs j

Laboratory: Eurofins Calscience

All accreditationf SertiNcationf held by thif laboratory are lif ted. p ot all accreditationf SertiNcationf are azzlicable to thif rezort.

Authority	Program	Identification Number	Expiration Date
AriZona	Btate	A80690	11-1u-29
CaliNornia	Rof AnFelef CoQnty Banitation Dif trictf	10103	07-91-29
CaliNornia	BCAv s D RAj	17RA0313	11-90-29
CaliNornia	Btate	9062	07-91-29
p eQada	Btate	CA00111	06-01-29
E reFon	p 4 RAj	P175	02-02-2P
UBDA	UB Lederal j roFramf	j 990-22-00053	05-2P-29
Waf hinFton	Btate	C31u-16	10-11-29

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-4

Method	Method Description	Protocol	Laboratory
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4

Protocol References:

ASTM = ASTM International

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123900-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123900-1	LXBMP0010_20230110	Water	01/10/23 09:30	01/12/23 17:55
570-123900-2	LXBMP0012_20230110	Water	01/10/23 09:00	01/12/23 17:55

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other

Eurofins Calscience, Inc.

TestAmerica s services under this CoC shal be performed accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc. its subsidiaries and affil ates, and TestAmerica Laboratories Inc

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	▪ 2 weeks			
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002 009 and/or 011 Watersheds	▫ 2 days			
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010_			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0002_			G	WM	8	Y	Y	X	X	X	X	X	X	X
ILBMP0004_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0005_			G	WM	8	Y	N	X	X	X	X	X	X	X
ILBMP0008_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003_			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004_			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010_20230110	01/10/23	0930	G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_20230110	01/10/23	0900	G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007_			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01_			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02_			G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1

570-123900 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments *ECI #44009815*
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ▫ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.	
Relinquished by:	Company: SHA	Date/Time: ~~01/11/23 1735~~	Received by: FC	Date/Time: 1-12-23 1050
Relinquished by: FC	Company: 1/12/23/1755	Date/Time: 1/12/23/1050	Received by	Date/Time: 1/13/23 17..
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

19/1.9 2 3/2 3 5C12 VM
5c11

Form No. CA-C-WI-045 Rev 1.2, dated 1/8/2016

2/7/2023

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123900-4

Login Number: 123900
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123901-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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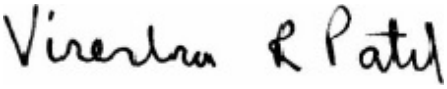
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired
EY	Result exceeds normal dynamic range; reported as a min. est.
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123901-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123901-1

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.5º C, 1.7º C and 2.1º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-295749. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 624.1: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: BGBMP0003_20230110 (570-123901-1) and LXBMP0011_20230110 (570-123901-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-296163 and analytical batch 570-298493 recovered outside control limits for the following analytes: Benzidine. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 625.1 SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 570-296163 and analytical batch 570-298493 recovered outside control limits for the following analytes: Benzidine.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following samples were received and analyzed outside of holding time: BGBMP0003_20230110 (570-123901-1) and LXBMP0011_20230110 (570-123901-2).

Method 218.6: The following samples were received, prepared and analyzed outside of holding time: BGBMP0003_20230110 (570-123901-1) and LXBMP0011_20230110 (570-123901-2).

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 570-295613 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Fluoride for analytical batch 570-295613 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 300.0: The following sample was received outside of holding time: LXBMP0011_20230110 (570-123901-2).

Method 300.0: The following sample was received outside of holding time: BGBMP0003_20230110 (570-123901-1).

Method 314.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-296367 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Perchlorate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 314.0: Due to the high concentration of Perchlorate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-296367 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Job ID: 570-123901-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: BGBMP0003_20230110 (570-123901-1) and LXBMP0011_20230110 (570-123901-2). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-295726.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: BGBMP0003_20230110 (570-123901-1) and LXBMP0011_20230110 (570-123901-2). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296163. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 625 Sim

Method 625: The following samples formed emulsions during the extraction procedure: BGBMP0003_20230110 (570-123901-1) and LXBMP0011_20230110 (570-123901-2). The emulsions were broken up using Na2SO4.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Client Sample ID: BGBMP0003_20230110 — Lab Sample ID: 570-123901-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	5.7		5.2	3.7	ug/L	1		625.1 SIM	Total/NA
Nitrate as N	1.1	BU BV	0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	3.1		1.0	0.24	mg/L	1		300.0	Total/NA
Boron	45	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	44	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.64	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	9.4		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	0.84	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	1.3	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	260		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	8.8		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	2.2		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	0.56	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Aluminum	270		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	0.62	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	6.3	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.42	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	0.90	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	70	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	1.2	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.3	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	0.39	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Zinc	3.5	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved
Aluminum	150	BU	15	8.6	ug/L	1		200.8	Dissolved
Total Suspended Solids	4.9		1.3	1.0	mg/L	1		SM 2540D	Total/NA

Client Sample ID: LXBMP0011_20230110 — Lab Sample ID: 570-123901-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	7.4		5.1	3.6	ug/L	1		625.1 SIM	Total/NA
Fluoride	0.079	J,DX	0.10	0.046	mg/L	1		300.0	Total/NA
Nitrite as N	0.070	J,DX BU BV	0.10	0.043	mg/L	1		300.0	Total/NA
Nitrate as N	0.80	BU BV	0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	2.5		1.0	0.24	mg/L	1		300.0	Total/NA
Boron	38	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	39	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.53	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	25		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	1.4	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: LXBMP0011_20230110 (Continued)

Lab Sample ID: 570-123901-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	3.6		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	970		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	30		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	2.7		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	1.6		1.0	0.12	ug/L	1		200.8	Total Recoverable
Zinc	6.2	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Aluminum	690		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	0.40	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	13	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.40	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	1.8	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	84	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	1.5	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.6	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Zinc	2.8	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved
Aluminum	120	BU	15	8.6	ug/L	1		200.8	Dissolved
Total Suspended Solids	21		2.5	2.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: BGBMP0003_20230110
Lab Sample ID: 570-123901-1
Date Collected: 01/10/23 13:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		2.0	0.82	ug/L			01/13/23 16:20	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*60 - 140*		*01/13/23 16:20*	*2*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*01/13/23 16:20*	*2*
Dibromofluoromethane	*107*		*60 - 140*		*01/13/23 16:20*	*2*
Toluene-d8 (Surr)	*99*		*60 - 140*		*01/13/23 16:20*	*2*

Client Sample ID: LXBMP0011_20230110
Lab Sample ID: 570-123901-2
Date Collected: 01/10/23 10:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		2.0	0.82	ug/L			01/13/23 16:42	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*60 - 140*		*01/13/23 16:42*	*2*
4-Bromofluorobenzene (Surr)	*94*		*60 - 140*		*01/13/23 16:42*	*2*
Dibromofluoromethane	*107*		*60 - 140*		*01/13/23 16:42*	*2*
Toluene-d8 (Surr)	*99*		*60 - 140*		*01/13/23 16:42*	*2*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**5.7**		5.2	3.7	ug/L		01/16/23 13:07	01/17/23 18:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*103*		*28 - 127*	*01/16/23 13:07*	*01/17/23 18:35*	*1*
2-Fluorobiphenyl (Surr)	*76*		*31 - 120*	*01/16/23 13:07*	*01/17/23 18:35*	*1*
2-Fluorophenol (Surr)	*33*		*17 - 120*	*01/16/23 13:07*	*01/17/23 18:35*	*1*
Nitrobenzene-d5 (Surr)	*78*		*27 - 120*	*01/16/23 13:07*	*01/17/23 18:35*	*1*
Phenol-d6 (Surr)	*23*		*10 - 120*	*01/16/23 13:07*	*01/17/23 18:35*	*1*
p-Terphenyl-d14 (Surr)	*94*		*45 - 120*	*01/16/23 13:07*	*01/17/23 18:35*	*1*

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**7.4**		5.1	3.6	ug/L		01/16/23 13:07	01/25/23 14:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*115*		*28 - 127*	*01/16/23 13:07*	*01/25/23 14:10*	*1*
2-Fluorobiphenyl (Surr)	*76*		*31 - 120*	*01/16/23 13:07*	*01/25/23 14:10*	*1*
2-Fluorophenol (Surr)	*40*		*17 - 120*	*01/16/23 13:07*	*01/25/23 14:10*	*1*
Nitrobenzene-d5 (Surr)	*110*		*27 - 120*	*01/16/23 13:07*	*01/25/23 14:10*	*1*
Phenol-d6 (Surr)	*27*		*10 - 120*	*01/16/23 13:07*	*01/25/23 14:10*	*1*
p-Terphenyl-d14 (Surr)	*79*		*45 - 120*	*01/16/23 13:07*	*01/25/23 14:10*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			01/13/23 03:59	1

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			01/13/23 04:11	1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: BGBMP0003_20230110
Lab Sample ID: 570-123901-1
Date Collected: 01/10/23 13:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	2.0	0.19	ug/L			01/13/23 09:22	10

Client Sample ID: LXBMP0011_20230110
Lab Sample ID: 570-123901-2
Date Collected: 01/10/23 10:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			01/13/23 09:34	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			01/13/23 10:14	1
Nitrite as N	ND	BU BV	0.10	0.043	mg/L			01/13/23 10:14	1
Nitrate as N	**1.1**	**BU BV**	0.10	0.020	mg/L			01/13/23 10:14	1
Sulfate	**3.1**		1.0	0.24	mg/L			01/13/23 10:14	1

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.079**	**J,DX**	0.10	0.046	mg/L			01/13/23 10:31	1
Nitrite as N	**0.070**	**J,DX BU BV**	0.10	0.043	mg/L			01/13/23 10:31	1
Nitrate as N	**0.80**	**BU BV**	0.10	0.020	mg/L			01/13/23 10:31	1
Sulfate	**2.5**		1.0	0.24	mg/L			01/13/23 10:31	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/17/23 22:20	1

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/17/23 22:41	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	45	J,DX	500	3.5	ug/L		01/17/23 09:00	01/17/23 22:19	1

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	38	J,DX	500	3.5	ug/L		01/17/23 09:00	01/17/23 22:56	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	44	J,DX BU	500	3.5	ug/L			01/14/23 02:56	1

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	39	J,DX BU	500	3.5	ug/L			01/14/23 02:59	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/17/23 09:37	01/17/23 14:30	1
Arsenic	**0.64**	**J,DX**	1.0	0.16	ug/L		01/17/23 09:37	01/17/23 14:30	1
Barium	**9.4**		1.0	0.17	ug/L		01/17/23 09:37	01/17/23 14:30	1
Beryllium	ND		0.50	0.26	ug/L		01/17/23 09:37	01/17/23 14:30	1
Cadmium	ND		1.0	0.13	ug/L		01/17/23 09:37	01/17/23 14:30	1
Chromium	**0.84**	**J,DX**	2.0	0.14	ug/L		01/17/23 09:37	01/17/23 14:30	1
Copper	**1.3**	**J,DX**	2.0	0.32	ug/L		01/17/23 09:37	01/17/23 14:30	1
Iron	**260**		20	3.7	ug/L		01/17/23 09:37	01/17/23 14:30	1
Manganese	**8.8**		1.0	0.41	ug/L		01/17/23 09:37	01/17/23 14:30	1
Nickel	**2.2**		2.0	0.17	ug/L		01/17/23 09:37	01/17/23 14:30	1
Lead	**0.56**	**J,DX**	1.0	0.12	ug/L		01/17/23 09:37	01/17/23 14:30	1
Antimony	ND		2.0	0.36	ug/L		01/17/23 09:37	01/17/23 14:30	1
Selenium	ND		2.0	0.52	ug/L		01/17/23 09:37	01/17/23 14:30	1
Thallium	ND		1.0	0.11	ug/L		01/17/23 09:37	01/17/23 14:30	1
Zinc	ND		20	2.8	ug/L		01/17/23 09:37	01/17/23 14:30	1
Aluminum	**270**		15	8.6	ug/L		01/17/23 09:37	01/17/23 14:30	1

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/17/23 09:37	01/17/23 14:33	1
Arsenic	**0.53**	**J,DX**	1.0	0.16	ug/L		01/17/23 09:37	01/17/23 14:33	1
Barium	**25**		1.0	0.17	ug/L		01/17/23 09:37	01/17/23 14:33	1
Beryllium	ND		0.50	0.26	ug/L		01/17/23 09:37	01/17/23 14:33	1
Cadmium	ND		1.0	0.13	ug/L		01/17/23 09:37	01/17/23 14:33	1
Chromium	**1.4**	**J,DX**	2.0	0.14	ug/L		01/17/23 09:37	01/17/23 14:33	1
Copper	**3.6**		2.0	0.32	ug/L		01/17/23 09:37	01/17/23 14:33	1
Iron	**970**		20	3.7	ug/L		01/17/23 09:37	01/17/23 14:33	1
Manganese	**30**		1.0	0.41	ug/L		01/17/23 09:37	01/17/23 14:33	1
Nickel	**2.7**		2.0	0.17	ug/L		01/17/23 09:37	01/17/23 14:33	1
Lead	**1.6**		1.0	0.12	ug/L		01/17/23 09:37	01/17/23 14:33	1
Antimony	ND		2.0	0.36	ug/L		01/17/23 09:37	01/17/23 14:33	1
Selenium	ND		2.0	0.52	ug/L		01/17/23 09:37	01/17/23 14:33	1
Thallium	ND		1.0	0.11	ug/L		01/17/23 09:37	01/17/23 14:33	1
Zinc	**6.2**	**J,DX**	20	2.8	ug/L		01/17/23 09:37	01/17/23 14:33	1
Aluminum	**690**		15	8.6	ug/L		01/17/23 09:37	01/17/23 14:33	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/16/23 10:38	1
Arsenic	**0.62**	**J,DX BU**	1.0	0.16	ug/L			01/16/23 10:38	1
Barium	**6.3**	**BU**	1.0	0.17	ug/L			01/16/23 10:38	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/16/23 10:38	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/16/23 10:38	1
Chromium	**0.42**	**J,DX BU**	2.0	0.14	ug/L			01/16/23 10:38	1
Copper	**0.90**	**J,DX BU**	2.0	0.32	ug/L			01/16/23 10:38	1
Iron	**70**	**BU**	20	3.7	ug/L			01/16/23 10:38	1
Manganese	**1.2**	**BU**	1.0	0.41	ug/L			01/16/23 10:38	1
Nickel	**1.3**	**J,DX BU**	2.0	0.17	ug/L			01/16/23 10:38	1
Lead	ND	BU	1.0	0.12	ug/L			01/16/23 10:38	1
Antimony	**0.39**	**J,DX BU**	2.0	0.36	ug/L			01/16/23 10:38	1
Selenium	ND	BU	2.0	0.52	ug/L			01/16/23 10:38	1
Thallium	ND	BU	1.0	0.11	ug/L			01/16/23 10:38	1
Zinc	**3.5**	**J,DX BU**	20	2.8	ug/L			01/16/23 10:38	1
Aluminum	**150**	**BU**	15	8.6	ug/L			01/16/23 10:38	1

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/16/23 10:40	1
Arsenic	**0.40**	**J,DX BU**	1.0	0.16	ug/L			01/16/23 10:40	1
Barium	**13**	**BU**	1.0	0.17	ug/L			01/16/23 10:40	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/16/23 10:40	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/16/23 10:40	1
Chromium	**0.40**	**J,DX BU**	2.0	0.14	ug/L			01/16/23 10:40	1
Copper	**1.8**	**J,DX BU**	2.0	0.32	ug/L			01/16/23 10:40	1
Iron	**84**	**BU**	20	3.7	ug/L			01/16/23 10:40	1
Manganese	**1.5**	**BU**	1.0	0.41	ug/L			01/16/23 10:40	1
Nickel	**1.6**	**J,DX BU**	2.0	0.17	ug/L			01/16/23 10:40	1
Lead	ND	BU	1.0	0.12	ug/L			01/16/23 10:40	1
Antimony	ND	BU	2.0	0.36	ug/L			01/16/23 10:40	1
Selenium	ND	BU	2.0	0.52	ug/L			01/16/23 10:40	1
Thallium	ND	BU	1.0	0.11	ug/L			01/16/23 10:40	1
Zinc	**2.8**	**J,DX BU**	20	2.8	ug/L			01/16/23 10:40	1
Aluminum	**120**	**BU**	15	8.6	ug/L			01/16/23 10:40	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

General Chemistry

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			01/17/23 17:49	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/17/23 15:47	1
Total Suspended Solids (SM 2540D)	**4.9**		1.3	1.0	mg/L			01/13/23 12:25	1

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			01/17/23 17:49	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/17/23 15:54	1
Total Suspended Solids (SM 2540D)	**21**		2.5	2.1	mg/L			01/13/23 12:25	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-123901-1	BGBMP0003_20230110	106	95	107	99
570-123901-2	LXBMP0011_20230110	107	94	107	99
LCS 570-295749/4	Lab Control Sample	96	100	97	100
LCSD 570-295749/5	Lab Control Sample Dup	96	102	97	100
MB 570-295749/7	Method Blank	104	95	105	98

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-123901-1	BGBMP0003_20230110	103	76	33	78	23	94
570-123901-2	LXBMP0011_20230110	115	76	40	110	27	79
LCS 570-296163/2-A	Lab Control Sample	97	107	64	93	45	117
LCSD 570-296163/3-A	Lab Control Sample Dup	106	103	65	97	46	114
MB 570-296163/1-A	Method Blank	60	77	40	77	27	100

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-295749/7
Matrix: Water
Analysis Batch: 295749

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/13/23 15:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*60 - 140*		*01/13/23 15:35*	*1*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*01/13/23 15:35*	*1*
Dibromofluoromethane	*105*		*60 - 140*		*01/13/23 15:35*	*1*
Toluene-d8 (Surr)	*98*		*60 - 140*		*01/13/23 15:35*	*1*

Lab Sample ID: LCS 570-295749/4
Matrix: Water
Analysis Batch: 295749

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	19.4		ug/L		97	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*60 - 140*
4-Bromofluorobenzene (Surr)	*100*		*60 - 140*
Dibromofluoromethane	*97*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: LCSD 570-295749/5
Matrix: Water
Analysis Batch: 295749

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene			20.0	18.3		ug/L		92	65 - 135	6	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*60 - 140*
4-Bromofluorobenzene (Surr)	*102*		*60 - 140*
Dibromofluoromethane	*97*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-296163/1-A
Matrix: Water
Analysis Batch: 298493

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296163

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/16/23 13:07	01/25/23 11:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*60*		*28 - 127*	*01/16/23 13:07*	*01/25/23 11:19*	*1*
2-Fluorobiphenyl (Surr)	*77*		*31 - 120*	*01/16/23 13:07*	*01/25/23 11:19*	*1*
2-Fluorophenol (Surr)	*40*		*17 - 120*	*01/16/23 13:07*	*01/25/23 11:19*	*1*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-296163/1-A
Matrix: Water
Analysis Batch: 298493

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296163

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	77		27 - 120	01/16/23 13:07	01/25/23 11:19	1
Phenol-d6 (Surr)	27		10 - 120	01/16/23 13:07	01/25/23 11:19	1
p-Terphenyl-d14 (Surr)	100		45 - 120	01/16/23 13:07	01/25/23 11:19	1

Lab Sample ID: LCS 570-296163/2-A
Matrix: Water
Analysis Batch: 298493

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296163

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bis(2-ethylhexyl) phthalate	20.0	19.8		ug/L		99	29 - 137

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	97		28 - 127
2-Fluorobiphenyl (Surr)	107		31 - 120
2-Fluorophenol (Surr)	64		17 - 120
Nitrobenzene-d5 (Surr)	93		27 - 120
Phenol-d6 (Surr)	45		10 - 120
p-Terphenyl-d14 (Surr)	117		45 - 120

Lab Sample ID: LCSD 570-296163/3-A
Matrix: Water
Analysis Batch: 298493

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296163

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate	20.0	21.0		ug/L		105	29 - 137	6	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	106		28 - 127
2-Fluorobiphenyl (Surr)	103		31 - 120
2-Fluorophenol (Surr)	65		17 - 120
Nitrobenzene-d5 (Surr)	97		27 - 120
Phenol-d6 (Surr)	46		10 - 120
p-Terphenyl-d14 (Surr)	114		45 - 120

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-295597/4
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/13/23 02:48	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: LCS 570-295597/5
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	51.3		ug/L		102	95 - 107		

Lab Sample ID: LCSD 570-295597/6
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	51.5		ug/L		103	95 - 107	0	20

Lab Sample ID: 570-123848-E-1 MS
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	10		50.1	64.0		ug/L		108	85 - 121		

Lab Sample ID: 570-123848-E-1 MSD
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	10		50.1	63.9		ug/L		108	85 - 121	0	25

Lab Sample ID: MB 570-295599/1-A
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/13/23 08:46	1

Lab Sample ID: LCS 570-295599/2-A
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.4		ug/L		101	95 - 107		

Lab Sample ID: LCSD 570-295599/3-A
Matrix: Water
Analysis Batch: 295597

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	51.1		ug/L		102	95 - 107	1	20

Lab Sample ID: 570-123901-1 MS
Matrix: Water
Analysis Batch: 295597

Client Sample ID: BGBMP0003_20230110
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	ND	BU BV	50.1	49.8		ug/L		99	85 - 121		

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: 570-123901-1 MSD
Matrix: Water
Analysis Batch: 295597

Client Sample ID: BGBMP0003_20230110
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	ND	BU BV	50.1	49.6		ug/L		99	85 - 121	0	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-295612/5
Matrix: Water
Analysis Batch: 295612

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/13/23 08:50	1
Nitrate as N	ND		0.10	0.020	mg/L			01/13/23 08:50	1

Lab Sample ID: LCS 570-295612/6
Matrix: Water
Analysis Batch: 295612

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.50		mg/L		100	90 - 110
Nitrate as N	5.00	4.96		mg/L		99	90 - 110

Lab Sample ID: LCSD 570-295612/7
Matrix: Water
Analysis Batch: 295612

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.50		mg/L		100	90 - 110	0	15
Nitrate as N	5.00	4.97		mg/L		99	90 - 110	0	15

Lab Sample ID: 570-123909-E-1 MS
Matrix: Water
Analysis Batch: 295612

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	ND		2.50	2.75		mg/L		110	80 - 120

Lab Sample ID: 570-123909-E-1 MS
Matrix: Water
Analysis Batch: 295612

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	3.8		5.00	9.30		mg/L		110	80 - 120

Lab Sample ID: 570-123909-E-1 MSD
Matrix: Water
Analysis Batch: 295612

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	ND		2.50	2.73		mg/L		109	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 570-123909-E-1 MSD
Matrix: Water
Analysis Batch: 295612

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	3.8		5.00	9.27		mg/L		110	80 - 120	0	20

Lab Sample ID: MB 570-295613/5
Matrix: Water
Analysis Batch: 295613

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			01/13/23 08:50	1
Sulfate	ND		1.0	0.24	mg/L			01/13/23 08:50	1

Lab Sample ID: LCS 570-295613/6
Matrix: Water
Analysis Batch: 295613

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.50	2.64		mg/L		106	90 - 110
Sulfate	50.0	48.8		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-295613/7
Matrix: Water
Analysis Batch: 295613

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	2.50	2.61		mg/L		104	90 - 110	1	15
Sulfate	50.0	48.8		mg/L		98	90 - 110	0	15

Lab Sample ID: 570-123909-E-1 MS
Matrix: Water
Analysis Batch: 295613

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.17		2.50	2.14	LN	mg/L		79	80 - 120

Lab Sample ID: 570-123909-E-1 MSD
Matrix: Water
Analysis Batch: 295613

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.17		2.50	2.09	LN	mg/L		77	80 - 120	2	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-296367/7
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/17/23 13:59	1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCS 570-296367/8
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	23.9		ug/L		96	85 - 115		

Lab Sample ID: LCSD 570-296367/9
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	23.8		ug/L		95	85 - 115	0	15

Lab Sample ID: 570-123690-P-1 MS
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	120	EY	50.0	206	EY LM	ug/L		171	80 - 120		

Lab Sample ID: 570-123690-P-1 MSD
Matrix: Water
Analysis Batch: 296367

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	120	EY	50.0	185	EY LM	ug/L		130	80 - 120	10	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-296349/1-A
Matrix: Water
Analysis Batch: 296611

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 296349

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		01/17/23 09:00	01/17/23 22:12	1

Lab Sample ID: LCS 570-296349/2-A
Matrix: Water
Analysis Batch: 296611

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 296349

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	505		ug/L		101	85 - 115		

Lab Sample ID: LCSD 570-296349/3-A
Matrix: Water
Analysis Batch: 296611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 296349

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	509		ug/L		102	85 - 115	1	20

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 570-123901-1 MS
Matrix: Water
Analysis Batch: 296611

Client Sample ID: BGBMP0003_20230110
Prep Type: Total Recoverable
Prep Batch: 296349

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	45	J,DX	500	558		ug/L		103	80 - 120

Lab Sample ID: 570-123901-1 MSD
Matrix: Water
Analysis Batch: 296611

Client Sample ID: BGBMP0003_20230110
Prep Type: Total Recoverable
Prep Batch: 296349

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	45	J,DX	500	564		ug/L		104	80 - 120	1	20

Lab Sample ID: 570-123901-2 MS
Matrix: Water
Analysis Batch: 296611

Client Sample ID: LXBMP0011_20230110
Prep Type: Total Recoverable
Prep Batch: 296349

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	38	J,DX	500	562		ug/L		105	80 - 120

Lab Sample ID: 570-123901-2 MSD
Matrix: Water
Analysis Batch: 296611

Client Sample ID: LXBMP0011_20230110
Prep Type: Total Recoverable
Prep Batch: 296349

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	38	J,DX	500	554		ug/L		103	80 - 120	1	20

Lab Sample ID: MB 570-295726/1-A
Matrix: Water
Analysis Batch: 295997

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			01/14/23 02:18	1

Lab Sample ID: LCS 570-295726/2-A
Matrix: Water
Analysis Batch: 295997

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	469	J,DX	ug/L		94	85 - 115

Lab Sample ID: LCSD 570-295726/3-A
Matrix: Water
Analysis Batch: 295997

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	475	J,DX	ug/L		95	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-296366/1-A
Matrix: Water
Analysis Batch: 296505

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 296366

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/17/23 09:37	01/17/23 14:00	1
Arsenic	ND		1.0	0.16	ug/L		01/17/23 09:37	01/17/23 14:00	1
Barium	ND		1.0	0.17	ug/L		01/17/23 09:37	01/17/23 14:00	1
Beryllium	ND		0.50	0.26	ug/L		01/17/23 09:37	01/17/23 14:00	1
Cadmium	ND		1.0	0.13	ug/L		01/17/23 09:37	01/17/23 14:00	1
Chromium	ND		2.0	0.14	ug/L		01/17/23 09:37	01/17/23 14:00	1
Copper	ND		2.0	0.32	ug/L		01/17/23 09:37	01/17/23 14:00	1
Iron	ND		20	3.7	ug/L		01/17/23 09:37	01/17/23 14:00	1
Manganese	ND		1.0	0.41	ug/L		01/17/23 09:37	01/17/23 14:00	1
Nickel	ND		2.0	0.17	ug/L		01/17/23 09:37	01/17/23 14:00	1
Lead	ND		1.0	0.12	ug/L		01/17/23 09:37	01/17/23 14:00	1
Antimony	ND		2.0	0.36	ug/L		01/17/23 09:37	01/17/23 14:00	1
Selenium	ND		2.0	0.52	ug/L		01/17/23 09:37	01/17/23 14:00	1
Thallium	ND		1.0	0.11	ug/L		01/17/23 09:37	01/17/23 14:00	1
Zinc	ND		20	2.8	ug/L		01/17/23 09:37	01/17/23 14:00	1
Aluminum	ND		15	8.6	ug/L		01/17/23 09:37	01/17/23 14:00	1

Lab Sample ID: LCS 570-296366/2-A
Matrix: Water
Analysis Batch: 296505

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 296366

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	50.0	52.2		ug/L		104	85 - 115
Arsenic	100	102		ug/L		102	85 - 115
Barium	100	107		ug/L		107	85 - 115
Beryllium	100	107		ug/L		107	85 - 115
Cadmium	100	104		ug/L		104	85 - 115
Chromium	100	107		ug/L		107	85 - 115
Copper	100	111		ug/L		111	85 - 115
Iron	100	112		ug/L		112	85 - 115
Manganese	100	106		ug/L		106	85 - 115
Nickel	100	109		ug/L		109	85 - 115
Lead	100	104		ug/L		104	85 - 115
Antimony	100	86.9		ug/L		87	85 - 115
Selenium	100	101		ug/L		101	85 - 115
Thallium	100	104		ug/L		104	85 - 115
Zinc	100	101		ug/L		101	85 - 115
Aluminum	100	102		ug/L		102	85 - 115

Lab Sample ID: LCSD 570-296366/3-A
Matrix: Water
Analysis Batch: 296505

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 296366

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	50.0	52.4		ug/L		105	85 - 115	1	20
Arsenic	100	103		ug/L		103	85 - 115	1	20
Barium	100	105		ug/L		105	85 - 115	1	20
Beryllium	100	108		ug/L		108	85 - 115	1	20
Cadmium	100	105		ug/L		105	85 - 115	0	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-296366/3-A
Matrix: Water
Analysis Batch: 296505

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 296366

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium			100	108		ug/L		108	85 - 115	1	20
Copper			100	111		ug/L		111	85 - 115	0	20
Iron			100	114		ug/L		114	85 - 115	1	20
Manganese			100	107		ug/L		107	85 - 115	1	20
Nickel			100	110		ug/L		110	85 - 115	1	20
Lead			100	106		ug/L		106	85 - 115	2	20
Antimony			100	89.3		ug/L		89	85 - 115	3	20
Selenium			100	98.7		ug/L		99	85 - 115	2	20
Thallium			100	106		ug/L		106	85 - 115	2	20
Zinc			100	101		ug/L		101	85 - 115	0	20
Aluminum			100	103		ug/L		103	85 - 115	1	20

Lab Sample ID: 570-123795-A-1-B MS
Matrix: Water
Analysis Batch: 296505

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 296366

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	ND		50.0	52.3		ug/L		105	80 - 120
Arsenic	0.19	J,DX	100	102		ug/L		102	80 - 120
Barium	3.9		100	110		ug/L		106	80 - 120
Beryllium	ND		100	108		ug/L		108	80 - 120
Cadmium	0.16	J,DX	100	104		ug/L		104	80 - 120
Chromium	0.68	J,DX	100	108		ug/L		107	80 - 120
Copper	4.1		100	116		ug/L		112	80 - 120
Iron	75		100	184		ug/L		110	80 - 120
Manganese	4.2		100	111		ug/L		106	80 - 120
Nickel	0.45	J,DX	100	112		ug/L		111	80 - 120
Lead	0.33	J,DX	100	108		ug/L		108	80 - 120
Antimony	0.65	J,DX	100	105		ug/L		104	80 - 120
Selenium	ND		100	97.4		ug/L		97	80 - 120
Thallium	ND		100	108		ug/L		108	80 - 120
Zinc	110		100	206		ug/L		96	80 - 120
Aluminum	59		100	162		ug/L		103	80 - 120

Lab Sample ID: 570-123795-A-1-C MSD
Matrix: Water
Analysis Batch: 296505

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 296366

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	ND		50.0	52.6		ug/L		105	80 - 120	1	20
Arsenic	0.19	J,DX	100	103		ug/L		103	80 - 120	1	20
Barium	3.9		100	109		ug/L		105	80 - 120	1	20
Beryllium	ND		100	108		ug/L		108	80 - 120	1	20
Cadmium	0.16	J,DX	100	104		ug/L		104	80 - 120	0	20
Chromium	0.68	J,DX	100	108		ug/L		107	80 - 120	0	20
Copper	4.1		100	117		ug/L		113	80 - 120	0	20
Iron	75		100	182		ug/L		107	80 - 120	1	20
Manganese	4.2		100	111		ug/L		107	80 - 120	1	20
Nickel	0.45	J,DX	100	110		ug/L		110	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-123795-A-1-C MSD
Matrix: Water
Analysis Batch: 296505

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 296366

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lead	0.33	J,DX	100	107		ug/L		107	80 - 120	0	20
Antimony	0.65	J,DX	100	104		ug/L		103	80 - 120	1	20
Selenium	ND		100	98.6		ug/L		99	80 - 120	1	20
Thallium	ND		100	107		ug/L		107	80 - 120	1	20
Zinc	110		100	208		ug/L		98	80 - 120	1	20
Aluminum	59		100	166		ug/L		107	80 - 120	3	20

Lab Sample ID: MB 570-295715/1-A
Matrix: Water
Analysis Batch: 296079

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L			01/16/23 09:49	1
Arsenic	ND		1.0	0.16	ug/L			01/16/23 09:49	1
Barium	ND		1.0	0.17	ug/L			01/16/23 09:49	1
Beryllium	ND		0.50	0.26	ug/L			01/16/23 09:49	1
Cadmium	ND		1.0	0.13	ug/L			01/16/23 09:49	1
Chromium	ND		2.0	0.14	ug/L			01/16/23 09:49	1
Copper	ND		2.0	0.32	ug/L			01/16/23 09:49	1
Iron	ND		20	3.7	ug/L			01/16/23 09:49	1
Manganese	ND		1.0	0.41	ug/L			01/16/23 09:49	1
Nickel	ND		2.0	0.17	ug/L			01/16/23 09:49	1
Lead	ND		1.0	0.12	ug/L			01/16/23 09:49	1
Antimony	ND		2.0	0.36	ug/L			01/16/23 09:49	1
Selenium	ND		2.0	0.52	ug/L			01/16/23 09:49	1
Thallium	ND		1.0	0.11	ug/L			01/16/23 09:49	1
Zinc	ND		20	2.8	ug/L			01/16/23 09:49	1
Aluminum	ND		15	8.6	ug/L			01/16/23 09:49	1

Lab Sample ID: LCS 570-295715/2-A
Matrix: Water
Analysis Batch: 296079

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	50.0	44.6		ug/L		89	85 - 115
Arsenic	100	95.5		ug/L		96	85 - 115
Barium	100	97.2		ug/L		97	85 - 115
Beryllium	100	96.3		ug/L		96	85 - 115
Cadmium	100	97.4		ug/L		97	85 - 115
Chromium	100	97.3		ug/L		97	85 - 115
Copper	100	96.2		ug/L		96	85 - 115
Iron	100	96.5		ug/L		96	85 - 115
Manganese	100	97.1		ug/L		97	85 - 115
Nickel	100	97.7		ug/L		98	85 - 115
Lead	100	96.2		ug/L		96	85 - 115
Antimony	100	88.3		ug/L		88	85 - 115
Selenium	100	94.3		ug/L		94	85 - 115
Thallium	100	96.8		ug/L		97	85 - 115
Zinc	100	95.1		ug/L		95	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-295715/2-A
Matrix: Water
Analysis Batch: 296079

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	100	100		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-295715/3-A
Matrix: Water
Analysis Batch: 296079

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	50.0	45.4		ug/L		91	85 - 115	2	20
Arsenic	100	95.3		ug/L		95	85 - 115	0	20
Barium	100	98.5		ug/L		99	85 - 115	1	20
Beryllium	100	95.9		ug/L		96	85 - 115	0	20
Cadmium	100	98.5		ug/L		98	85 - 115	1	20
Chromium	100	97.6		ug/L		98	85 - 115	0	20
Copper	100	97.4		ug/L		97	85 - 115	1	20
Iron	100	97.2		ug/L		97	85 - 115	1	20
Manganese	100	97.5		ug/L		98	85 - 115	0	20
Nickel	100	98.7		ug/L		99	85 - 115	1	20
Lead	100	97.0		ug/L		97	85 - 115	1	20
Antimony	100	91.5		ug/L		92	85 - 115	4	20
Selenium	100	92.9		ug/L		93	85 - 115	1	20
Thallium	100	95.9		ug/L		96	85 - 115	1	20
Zinc	100	96.0		ug/L		96	85 - 115	1	20
Aluminum	100	102		ug/L		102	85 - 115	1	20

Lab Sample ID: 570-123617-D-1-C MS
Matrix: Water
Analysis Batch: 296129

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	ND		50.0	44.7		ug/L		89	80 - 120
Arsenic	0.23	J,DX	100	93.5		ug/L		93	80 - 120
Barium	9.1		100	103		ug/L		94	80 - 120
Beryllium	ND		100	93.2		ug/L		93	80 - 120
Cadmium	ND		100	93.0		ug/L		93	80 - 120
Chromium	0.36	J,DX	100	93.7		ug/L		93	80 - 120
Copper	3.1		100	95.8		ug/L		93	80 - 120
Iron	46		100	151		ug/L		105	80 - 120
Manganese	13		100	107		ug/L		94	80 - 120
Nickel	1.2	J,DX	100	93.7		ug/L		92	80 - 120
Lead	ND		100	92.1		ug/L		92	80 - 120
Antimony	0.60	J,DX	100	92.2		ug/L		92	80 - 120
Selenium	ND		100	92.5		ug/L		93	80 - 120
Thallium	ND		100	92.3		ug/L		92	80 - 120
Zinc	37		100	127		ug/L		91	80 - 120
Aluminum	68		100	164		ug/L		96	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-123617-D-1-D MSD
Matrix: Water
Analysis Batch: 296129

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	ND		50.0	45.0		ug/L		90	80 - 120	1	20
Arsenic	0.23	J,DX	100	93.5		ug/L		93	80 - 120	0	20
Barium	9.1		100	105		ug/L		96	80 - 120	1	20
Beryllium	ND		100	91.6		ug/L		92	80 - 120	2	20
Cadmium	ND		100	94.5		ug/L		95	80 - 120	2	20
Chromium	0.36	J,DX	100	96.5		ug/L		96	80 - 120	3	20
Copper	3.1		100	97.4		ug/L		94	80 - 120	2	20
Iron	46		100	154		ug/L		108	80 - 120	2	20
Manganese	13		100	108		ug/L		95	80 - 120	1	20
Nickel	1.2	J,DX	100	95.5		ug/L		94	80 - 120	2	20
Lead	ND		100	93.5		ug/L		94	80 - 120	1	20
Antimony	0.60	J,DX	100	94.4		ug/L		94	80 - 120	2	20
Selenium	ND		100	91.1		ug/L		91	80 - 120	2	20
Thallium	ND		100	93.5		ug/L		93	80 - 120	1	20
Zinc	37		100	127		ug/L		91	80 - 120	0	20
Aluminum	68		100	165		ug/L		97	80 - 120	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-296559/11
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/17/23 15:00	1

Lab Sample ID: LCS 570-296559/12
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	243		ug/L		97	90 - 110

Lab Sample ID: LCSD 570-296559/13
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	229		ug/L		92	90 - 110	6	20

Lab Sample ID: MRL 570-296559/10
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	5.17		ug/L		104	50 - 150

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: 570-123565-A-1 MS
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	ND		250	209		ug/L		84	70 - 130

Lab Sample ID: 570-123565-A-1 MSD
Matrix: Water
Analysis Batch: 296559

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	211		ug/L		84	70 - 130	1	30

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-295730/1
Matrix: Water
Analysis Batch: 295730

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/13/23 12:25	1

Lab Sample ID: LCS 570-295730/2
Matrix: Water
Analysis Batch: 295730

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	92.0		mg/L		92	77 - 116

Lab Sample ID: LCSD 570-295730/3
Matrix: Water
Analysis Batch: 295730

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	90.0		mg/L		90	77 - 116	2	10

Lab Sample ID: 570-123901-2 DU
Matrix: Water
Analysis Batch: 295730

Client Sample ID: LXBMP0011_20230110
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	21		19.5		mg/L		5	10

GC/MS VOA

Analysis Batch: 295749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	624.1	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	624.1	
MB 570-295749/7	Method Blank	Total/NA	Water	624.1	
LCS 570-295749/4	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-295749/5	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 296163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	625	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	625	
MB 570-296163/1-A	Method Blank	Total/NA	Water	625	
LCS 570-296163/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-296163/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 296373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	625.1 SIM	296163

Analysis Batch: 298493

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-2	LXBMP0011_20230110	Total/NA	Water	625.1 SIM	296163
MB 570-296163/1-A	Method Blank	Total/NA	Water	625.1 SIM	296163
LCS 570-296163/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	296163
LCSD 570-296163/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	296163

HPLC/IC

Analysis Batch: 295597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	218.6	295599
570-123901-1	BGBMP0003_20230110	Total/NA	Water	218.6	
570-123901-2	LXBMP0011_20230110	Dissolved	Water	218.6	295599
570-123901-2	LXBMP0011_20230110	Total/NA	Water	218.6	
MB 570-295597/4	Method Blank	Total/NA	Water	218.6	
MB 570-295599/1-A	Method Blank	Dissolved	Water	218.6	295599
LCS 570-295597/5	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-295599/2-A	Lab Control Sample	Dissolved	Water	218.6	295599
LCSD 570-295597/6	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-295599/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	295599
570-123848-E-1 MS	Matrix Spike	Total/NA	Water	218.6	
570-123848-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	218.6	
570-123901-1 MS	BGBMP0003_20230110	Dissolved	Water	218.6	295599
570-123901-1 MSD	BGBMP0003_20230110	Dissolved	Water	218.6	295599

Filtration Batch: 295599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	Filtration	
570-123901-2	LXBMP0011_20230110	Dissolved	Water	Filtration	
MB 570-295599/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-295599/2-A	Lab Control Sample	Dissolved	Water	Filtration	

HPLC/IC (Continued)

Filtration Batch: 295599 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-295599/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123901-1 MS	BGBMP0003_20230110	Dissolved	Water	Filtration	
570-123901-1 MSD	BGBMP0003_20230110	Dissolved	Water	Filtration	

Analysis Batch: 295612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	300.0	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	300.0	
MB 570-295612/5	Method Blank	Total/NA	Water	300.0	
LCS 570-295612/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-295612/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123909-E-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-123909-E-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-123909-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
570-123909-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 295613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	300.0	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	300.0	
MB 570-295613/5	Method Blank	Total/NA	Water	300.0	
LCS 570-295613/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-295613/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-123909-E-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-123909-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 296367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	314.0	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	314.0	
MB 570-296367/7	Method Blank	Total/NA	Water	314.0	
LCS 570-296367/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-296367/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-123690-P-1 MS	Matrix Spike	Total/NA	Water	314.0	
570-123690-P-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Metals

Filtration Batch: 295715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	Filtration	
570-123901-2	LXBMP0011_20230110	Dissolved	Water	Filtration	
MB 570-295715/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-295715/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295715/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123617-D-1-C MS	Matrix Spike	Dissolved	Water	Filtration	
570-123617-D-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 295726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	Filtration	

Metals (Continued)

Filtration Batch: 295726 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-2	LXBMP0011_20230110	Dissolved	Water	Filtration	
MB 570-295726/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-295726/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295726/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 295997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	200.7 Rev 4.4	295726
570-123901-2	LXBMP0011_20230110	Dissolved	Water	200.7 Rev 4.4	295726
MB 570-295726/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	295726
LCS 570-295726/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	295726
LCSD 570-295726/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	295726

Analysis Batch: 296079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-295715/1-A	Method Blank	Dissolved	Water	200.8	295715
LCS 570-295715/2-A	Lab Control Sample	Dissolved	Water	200.8	295715
LCSD 570-295715/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	295715

Analysis Batch: 296129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	200.8	295715
570-123901-2	LXBMP0011_20230110	Dissolved	Water	200.8	295715
570-123617-D-1-C MS	Matrix Spike	Dissolved	Water	200.8	295715
570-123617-D-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	295715

Prep Batch: 296349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total Recoverable	Water	200.7	
570-123901-2	LXBMP0011_20230110	Total Recoverable	Water	200.7	
MB 570-296349/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-296349/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-296349/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-123901-1 MS	BGBMP0003_20230110	Total Recoverable	Water	200.7	
570-123901-1 MSD	BGBMP0003_20230110	Total Recoverable	Water	200.7	
570-123901-2 MS	LXBMP0011_20230110	Total Recoverable	Water	200.7	
570-123901-2 MSD	LXBMP0011_20230110	Total Recoverable	Water	200.7	

Prep Batch: 296366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total Recoverable	Water	200.8	
570-123901-2	LXBMP0011_20230110	Total Recoverable	Water	200.8	
MB 570-296366/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-296366/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-296366/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-123795-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	
570-123795-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 296505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total Recoverable	Water	200.8	296366

Metals (Continued)

Analysis Batch: 296505 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-2	LXBMP0011_20230110	Total Recoverable	Water	200.8	296366
MB 570-296366/1-A	Method Blank	Total Recoverable	Water	200.8	296366
LCS 570-296366/2-A	Lab Control Sample	Total Recoverable	Water	200.8	296366
LCSD 570-296366/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	296366
570-123795-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	296366
570-123795-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	296366

Analysis Batch: 296611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total Recoverable	Water	200.7 Rev 4.4	296349
570-123901-2	LXBMP0011_20230110	Total Recoverable	Water	200.7 Rev 4.4	296349
MB 570-296349/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	296349
LCS 570-296349/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	296349
LCSD 570-296349/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	296349
570-123901-1 MS	BGBMP0003_20230110	Total Recoverable	Water	200.7 Rev 4.4	296349
570-123901-1 MSD	BGBMP0003_20230110	Total Recoverable	Water	200.7 Rev 4.4	296349
570-123901-2 MS	LXBMP0011_20230110	Total Recoverable	Water	200.7 Rev 4.4	296349
570-123901-2 MSD	LXBMP0011_20230110	Total Recoverable	Water	200.7 Rev 4.4	296349

General Chemistry

Analysis Batch: 295730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	SM 2540D	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	SM 2540D	
MB 570-295730/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-295730/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-295730/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-123901-2 DU	LXBMP0011_20230110	Total/NA	Water	SM 2540D	

Analysis Batch: 296555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	218.6 CR3	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	218.6 CR3	

Analysis Batch: 296559

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	Kelada 01	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	Kelada 01	
MB 570-296559/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-296559/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-296559/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-296559/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-123565-A-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-123565-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Client Sample ID: BGBMP0003_20230110

Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		2	5 mL	5 mL	295749	01/13/23 16:20	N1A	EET CAL 4
	Instrument ID: GCMSXX									
Total/NA	Prep	625			963.2 mL	2 mL	296163	01/16/23 13:07	OAJ3	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	296373	01/17/23 18:35	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Dissolved	Filtration	Filtration			100 mL	100 mL	295599	01/13/23 02:21	YO8L	EET CAL 4
Dissolved	Analysis	218.6		10	4 mL	4 mL	295597	01/13/23 09:22	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	295597	01/13/23 03:59	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	295612	01/13/23 10:14	UIP1	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	295613	01/13/23 10:14	UIP1	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	296367	01/17/23 22:20	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	295726	01/13/23 12:19	W1BQ	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			295997	01/14/23 02:56	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	296349	01/17/23 09:00	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			296611	01/17/23 22:19	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	295715	01/13/23 11:57	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			296129	01/16/23 10:38	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	296366	01/17/23 09:37	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296505	01/17/23 14:30	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			296555	01/17/23 17:49	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	296559	01/17/23 15:47	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	800 mL	1000 mL	295730	01/13/23 12:25	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: LXBMP0011_20230110

Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		2	5 mL	5 mL	295749	01/13/23 16:42	N1A	EET CAL 4
	Instrument ID: GCMSXX									
Total/NA	Prep	625			986.8 mL	2 mL	296163	01/16/23 13:07	OAJ3	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	298493	01/25/23 14:10	ULLI	EET CAL 4
	Instrument ID: GCMSEEE									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Client Sample ID: LXBMP0011_20230110

Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			100 mL	100 mL	295599	01/13/23 02:21	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	295597	01/13/23 09:34	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	295597	01/13/23 04:11	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	295612	01/13/23 10:31	UIP1	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	295613	01/13/23 10:31	UIP1	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	296367	01/17/23 22:41	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	295726	01/13/23 12:19	W1BQ	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			295997	01/14/23 02:59	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	296349	01/17/23 09:00	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			296611	01/17/23 22:56	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	295715	01/13/23 11:57	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			296129	01/16/23 10:40	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	296366	01/17/23 09:37	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296505	01/17/23 14:33	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			296555	01/17/23 17:49	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	296559	01/17/23 15:54	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	400 mL	1000 mL	295730	01/13/23 12:25	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123901-1	BGBMP0003_20230110	Water	01/10/23 13:00	01/12/23 17:55
570-123901-2	LXBMP0011_20230110	Water	01/10/23 10:00	01/12/23 17:55

123901

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs w Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc ts subsidiaries and affiliates, and TestAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☐ 2 weeks			Lab Sampling
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total recoverable (Method 218.6)	Chromium VI, total dissolved (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn, – (Total Dissolved)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1 250mL Amber	1 250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1 500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
* BGBMP0003_20230110	01/10/23	1300	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
* LXBMP0011_20230110	01/10/23	1000	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Sample date corrected to 01/10/23 (MD 2/2/2023)

570-123901 Chain of Custody

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd. ____ Corr'd. ____ Therm ID No. ____	
Relinquished by	Company: SHA	Date/Time: 1/12/23 1255	Received by	Date/Time: 1/12/23 1255
Relinquished by	Company: EC	Date/Time: 1/12/23 1705	Received by	Date/Time: 1/12/23 1705
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.1/2.1 1.5/1.5 1.7/1.7 5CC

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/8/2023

123901

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs w Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc ts subsidiaries and affiliates, and TestAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▫ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228 Sr-90 (E903.0/E903 E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As Ba, Be Cd Cr Cu, Fe Mn Ni, Pb, Se Sb, Tl; Method 200.7 B, Zn, – (Total Dissolved)	Method 200.8, Ag, Al, As, Ba Be, Cd Cr Cu Fe Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1 250mL Amber	1 250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1 500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
* BGBMP0003_20230110	01/09/23	1300	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
* LXBMP0011_20230110	01/10/23	1000	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
TB_			TB	WM	3	N	N															x			

570-123901 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

1	1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▫ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ▫ Yes | Custody Seal No. | Cooler Temp. (°C): Obs'd. ____ Corr'd. ____ Therm ID No. ____

	Company	Date/Time		Date/Time
Relinquished by	SITA		Received by	Date/Time
Relinquished by	EC 1/12/23 1755	1/12/23 1755	Received by	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.1/2.1 1.5/1.5 1.7/1.7 5C11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/8/2023

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals BMP Performance

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the BMP Performance program starting from data collected October 1st, 2022.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123901-1

Login Number: 123901
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/6/2023 4:34:35 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123901-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

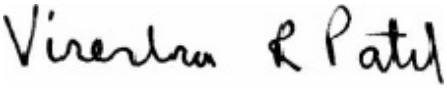
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123901-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123901-2

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.5º C, 1.7º C and 2.1º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: BGBMP0003_20230110 (570-123901-1), LXBMP0011_20230110 (570-123901-2), (CCV 320-651543/2) and (MB 320-649091/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-2

Client Sample ID: BGBMP0003_20230110 — Lab Sample ID: 570-123901-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000021	J,DX q MB	0.000052	0.00000017	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000017	J,DX q MB	0.000052	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000030	J,DX MB	0.000052	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000027	J,DX q MB	0.000052	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000039	J,DX MB	0.000052	0.0000000066	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000018	J,DX q MB	0.000052	0.0000000066	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000040	J,DX q MB	0.000052	0.0000000070	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000021	J,DX q MB	0.000052	0.0000000062	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000023	J,DX MB	0.000052	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00000096	J,DX MB	0.000052	0.00000013	ug/L	1		1613B	Total/NA
OCDD	0.000023	J,DX MB	0.00010	0.00000033	ug/L	1		1613B	Total/NA
OCDF	0.0000022	J,DX MB	0.00010	0.00000012	ug/L	1		1613B	Total/NA
Total TCDD	0.0000021	J,DX q MB	0.000010	0.00000021	ug/L	1		1613B	Total/NA
Total TCDF	0.0000029	J,DX q MB	0.000010	0.0000000082	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000021	J,DX q MB	0.000052	0.00000017	ug/L	1		1613B	Total/NA
Total PeCDF	0.00000038	J,DX q MB	0.000052	0.00000011	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000023	J,DX q MB	0.000052	0.00000016	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000015	J,DX q MB	0.000052	0.0000000062	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000050	J,DX MB	0.000052	0.00000022	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000016	J,DX MB	0.000052	0.00000013	ug/L	1		1613B	Total/NA

Client Sample ID: LXBMP0011_20230110 — Lab Sample ID: 570-123901-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000031	J,DX MB	0.000049	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000021	J,DX MB	0.000049	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000026	J,DX q MB	0.000049	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000036	J,DX q MB	0.000049	0.0000000090	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000021	J,DX q MB	0.000049	0.0000000094	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000021	J,DX MB	0.000049	0.0000000085	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000016	J,DX MB	0.000049	0.00000019	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample ID: LXBMP0011_20230110 (Continued)

Lab Sample ID: 570-123901-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDF	0.00000090	J,DX MB	0.000049	0.00000012	ug/L	1		1613B	Total/NA
OCDD	0.000011	J,DX q MB	0.000097	0.00000030	ug/L	1		1613B	Total/NA
OCDF	0.0000011	J,DX MB	0.000097	0.00000013	ug/L	1		1613B	Total/NA
Total TCDD	0.0000026	J,DX MB	0.0000097	0.00000019	ug/L	1		1613B	Total/NA
Total TCDF	0.00000086	J,DX q MB	0.0000097	0.00000069	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000031	J,DX MB	0.000049	0.00000015	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000023	J,DX q MB	0.000049	0.00000016	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000010	J,DX q MB	0.000049	0.00000085	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000035	J,DX q MB	0.000049	0.00000019	ug/L	1		1613B	Total/NA
Total HpCDF	0.00000090	J,DX MB	0.000049	0.00000012	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000021	ug/L		01/25/23 04:38	01/28/23 21:54	1
1,2,3,7,8-PeCDD	**0.00000021**	**J,DX q MB**	0.000052	0.00000017	ug/L		01/25/23 04:38	01/28/23 21:54	1
1,2,3,7,8-PeCDF	ND		0.000052	0.00000011	ug/L		01/25/23 04:38	01/28/23 21:54	1
2,3,4,7,8-PeCDF	ND		0.000052	0.00000012	ug/L		01/25/23 04:38	01/28/23 21:54	1
1,2,3,4,7,8-HxCDD	**0.0000017**	**J,DX q MB**	0.000052	0.00000018	ug/L		01/25/23 04:38	01/28/23 21:54	1
1,2,3,6,7,8-HxCDD	**0.00000030**	**J,DX MB**	0.000052	0.00000018	ug/L		01/25/23 04:38	01/28/23 21:54	1
1,2,3,7,8,9-HxCDD	**0.00000027**	**J,DX q MB**	0.000052	0.00000016	ug/L		01/25/23 04:38	01/28/23 21:54	1
1,2,3,4,7,8-HxCDF	**0.00000039**	**J,DX MB**	0.000052	0.00000066	ug/L		01/25/23 04:38	01/28/23 21:54	1
1,2,3,6,7,8-HxCDF	**0.00000018**	**J,DX q MB**	0.000052	0.00000066	ug/L		01/25/23 04:38	01/28/23 21:54	1
1,2,3,7,8,9-HxCDF	**0.00000040**	**J,DX q MB**	0.000052	0.00000070	ug/L		01/25/23 04:38	01/28/23 21:54	1
2,3,4,6,7,8-HxCDF	**0.00000021**	**J,DX q MB**	0.000052	0.00000062	ug/L		01/25/23 04:38	01/28/23 21:54	1
1,2,3,4,6,7,8-HpCDD	**0.0000023**	**J,DX MB**	0.000052	0.00000022	ug/L		01/25/23 04:38	01/28/23 21:54	1
1,2,3,4,6,7,8-HpCDF	**0.00000096**	**J,DX MB**	0.000052	0.00000013	ug/L		01/25/23 04:38	01/28/23 21:54	1
1,2,3,4,7,8,9-HpCDF	ND		0.000052	0.00000014	ug/L		01/25/23 04:38	01/28/23 21:54	1
OCDD	**0.000023**	**J,DX MB**	0.00010	0.00000033	ug/L		01/25/23 04:38	01/28/23 21:54	1
OCDF	**0.0000022**	**J,DX MB**	0.00010	0.00000012	ug/L		01/25/23 04:38	01/28/23 21:54	1
Total TCDD	**0.0000021**	**J,DX q MB**	0.000010	0.00000021	ug/L		01/25/23 04:38	01/28/23 21:54	1
Total TCDF	**0.0000029**	**J,DX q MB**	0.000010	0.00000082	ug/L		01/25/23 04:38	01/28/23 21:54	1
Total PeCDD	**0.00000021**	**J,DX q MB**	0.000052	0.00000017	ug/L		01/25/23 04:38	01/28/23 21:54	1
Total PeCDF	**0.00000038**	**J,DX q MB**	0.000052	0.00000011	ug/L		01/25/23 04:38	01/28/23 21:54	1
Total HxCDD	**0.0000023**	**J,DX q MB**	0.000052	0.00000016	ug/L		01/25/23 04:38	01/28/23 21:54	1
Total HxCDF	**0.0000015**	**J,DX q MB**	0.000052	0.00000062	ug/L		01/25/23 04:38	01/28/23 21:54	1
Total HpCDD	**0.0000050**	**J,DX MB**	0.000052	0.00000022	ug/L		01/25/23 04:38	01/28/23 21:54	1
Total HpCDF	**0.0000016**	**J,DX MB**	0.000052	0.00000013	ug/L		01/25/23 04:38	01/28/23 21:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*80*		*25 - 164*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-2,3,7,8-TCDF	*86*		*24 - 169*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*25 - 181*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-1,2,3,7,8-PeCDF	*85*		*24 - 185*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-2,3,4,7,8-PeCDF	*83*		*21 - 178*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-1,2,3,4,7,8-HxCDD	*78*		*32 - 141*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-1,2,3,6,7,8-HxCDD	*88*		*28 - 130*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-1,2,3,4,7,8-HxCDF	*81*		*26 - 152*	*01/25/23 04:38*	*01/28/23 21:54*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,6,7,8-HxCDF	*91*		*26 - 123*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-1,2,3,7,8,9-HxCDF	*93*		*29 - 147*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-2,3,4,6,7,8-HxCDF	*95*		*28 - 136*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*81*		*23 - 140*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*81*		*28 - 143*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*87*		*26 - 138*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-OCDD	*89*		*17 - 157*	*01/25/23 04:38*	*01/28/23 21:54*	*1*
13C-OCDF	*91*		*17 - 157*	*01/25/23 04:38*	*01/28/23 21:54*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*	*01/25/23 04:38*	*01/28/23 21:54*	*1*

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000097	0.00000019	ug/L		01/25/23 04:38	01/28/23 22:40	1
1,2,3,7,8-PeCDD	**0.00000031**	**J,DX MB**	0.000049	0.00000015	ug/L		01/25/23 04:38	01/28/23 22:40	1
1,2,3,7,8-PeCDF	ND		0.000049	0.00000010	ug/L		01/25/23 04:38	01/28/23 22:40	1
2,3,4,7,8-PeCDF	ND		0.000049	0.00000011	ug/L		01/25/23 04:38	01/28/23 22:40	1
1,2,3,4,7,8-HxCDD	**0.0000021**	**J,DX MB**	0.000049	0.00000018	ug/L		01/25/23 04:38	01/28/23 22:40	1
1,2,3,6,7,8-HxCDD	**0.00000026**	**J,DX q MB**	0.000049	0.00000019	ug/L		01/25/23 04:38	01/28/23 22:40	1
1,2,3,7,8,9-HxCDD	ND		0.000049	0.00000016	ug/L		01/25/23 04:38	01/28/23 22:40	1
1,2,3,4,7,8-HxCDF	**0.00000036**	**J,DX q MB**	0.000049	0.00000090	ug/L		01/25/23 04:38	01/28/23 22:40	1
1,2,3,6,7,8-HxCDF	ND		0.000049	0.00000089	ug/L		01/25/23 04:38	01/28/23 22:40	1
1,2,3,7,8,9-HxCDF	**0.00000021**	**J,DX q MB**	0.000049	0.00000094	ug/L		01/25/23 04:38	01/28/23 22:40	1
2,3,4,6,7,8-HxCDF	**0.00000021**	**J,DX MB**	0.000049	0.00000085	ug/L		01/25/23 04:38	01/28/23 22:40	1
1,2,3,4,6,7,8-HpCDD	**0.0000016**	**J,DX MB**	0.000049	0.00000019	ug/L		01/25/23 04:38	01/28/23 22:40	1
1,2,3,4,6,7,8-HpCDF	**0.00000090**	**J,DX MB**	0.000049	0.00000012	ug/L		01/25/23 04:38	01/28/23 22:40	1
1,2,3,4,7,8,9-HpCDF	ND		0.000049	0.00000014	ug/L		01/25/23 04:38	01/28/23 22:40	1
OCDD	**0.000011**	**J,DX q MB**	0.000097	0.00000030	ug/L		01/25/23 04:38	01/28/23 22:40	1
OCDF	**0.0000011**	**J,DX MB**	0.000097	0.00000013	ug/L		01/25/23 04:38	01/28/23 22:40	1
Total TCDD	**0.0000026**	**J,DX MB**	0.0000097	0.00000019	ug/L		01/25/23 04:38	01/28/23 22:40	1
Total TCDF	**0.00000086**	**J,DX q MB**	0.0000097	0.00000069	ug/L		01/25/23 04:38	01/28/23 22:40	1
Total PeCDD	**0.00000031**	**J,DX MB**	0.000049	0.00000015	ug/L		01/25/23 04:38	01/28/23 22:40	1
Total PeCDF	ND		0.000049	0.00000010	ug/L		01/25/23 04:38	01/28/23 22:40	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HxCDD	0.0000023	J,DX q MB	0.000049	0.00000016	ug/L		01/25/23 04:38	01/28/23 22:40	1
Total HxCDF	0.0000010	J,DX q MB	0.000049	0.00000085	ug/L		01/25/23 04:38	01/28/23 22:40	1
Total HpCDD	0.0000035	J,DX q MB	0.000049	0.0000019	ug/L		01/25/23 04:38	01/28/23 22:40	1
Total HpCDF	0.00000090	J,DX MB	0.000049	0.0000012	ug/L		01/25/23 04:38	01/28/23 22:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*78*		*25 - 164*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-2,3,7,8-TCDF	*82*		*24 - 169*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-1,2,3,7,8-PeCDD	*77*		*25 - 181*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-1,2,3,7,8-PeCDF	*81*		*24 - 185*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-2,3,4,7,8-PeCDF	*80*		*21 - 178*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-1,2,3,4,7,8-HxCDD	*79*		*32 - 141*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-1,2,3,6,7,8-HxCDD	*87*		*28 - 130*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-1,2,3,4,7,8-HxCDF	*82*		*26 - 152*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-1,2,3,6,7,8-HxCDF	*90*		*26 - 123*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-1,2,3,7,8,9-HxCDF	*90*		*29 - 147*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-2,3,4,6,7,8-HxCDF	*92*		*28 - 136*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*80*		*23 - 140*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*81*		*28 - 143*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*84*		*26 - 138*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-OCDD	*85*		*17 - 157*	*01/25/23 04:38*	*01/28/23 22:40*	*1*
13C-OCDF	*87*		*17 - 157*	*01/25/23 04:38*	*01/28/23 22:40*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*89*		*35 - 197*	*01/25/23 04:38*	*01/28/23 22:40*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.00000047	ug/L		01/25/23 04:38	02/03/23 20:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*81*		*24 - 169*	*01/25/23 04:38*	*02/03/23 20:50*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*108*		*35 - 197*	*01/25/23 04:38*	*02/03/23 20:50*	*1*

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000097	0.00000040	ug/L		01/25/23 04:38	02/03/23 21:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*76*		*24 - 169*	*01/25/23 04:38*	*02/03/23 21:27*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*99*		*35 - 197*	*01/25/23 04:38*	*02/03/23 21:27*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-123901-1	BGBMP0003_20230110	93
570-123901-1 - RA	BGBMP0003_20230110	108
570-123901-2	LXBMP0011_20230110	89
570-123901-2 - RA	LXBMP0011_20230110	99
MB 320-649091/1-A	Method Blank	95
MB 320-649091/1-A - RA	Method Blank	107

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-649091/2-A	Lab Control Sample	92
LCSD 320-649091/3-A	Lab Control Sample Dup	93

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-123901-1	BGBMP0003_20230110	80	86	80	85	83	78	88	81
570-123901-1 - RA	BGBMP0003_20230110		81						
570-123901-2	LXBMP0011_20230110	78	82	77	81	80	79	87	82
570-123901-2 - RA	LXBMP0011_20230110		76						
MB 320-649091/1-A	Method Blank	79	84	77	82	83	81	89	84
MB 320-649091/1-A - RA	Method Blank		78						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-123901-1	BGBMP0003_20230110	91	93	95	81	81	87	89	91
570-123901-1 - RA	BGBMP0003_20230110								
570-123901-2	LXBMP0011_20230110	90	90	92	80	81	84	85	87
570-123901-2 - RA	LXBMP0011_20230110								
MB 320-649091/1-A	Method Blank	93	89	93	76	78	81	84	86
MB 320-649091/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-649091/2-A	Lab Control Sample	76	80	75	80	79	78	81	76
LCSD 320-649091/3-A	Lab Control Sample Dup	81	86	81	85	83	80	85	80

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-649091/2-A	Lab Control Sample	86	86	88	75	76	79	85	86
LCSD 320-649091/3-A	Lab Control Sample Dup	90	92	93	81	82	87	91	93

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123901-2
Project/Site: Boeing SSFL ISRA and BMP

TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-649091/1-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649091

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2.9.7.8-Tl DD	ND		0P00010	0P0000002u	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
1.2.9.7.8-j nl DD	0P00000800	J.D4	0P00050	0P00000020	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
1.2.9.7.8-j nl DL	0P0000005uu	J.D4 x	0P00050	0P00000015	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
2.9.u.7.8-j nl DL	0P0000006uu	J.D4	0P00050	0P00000017	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
1.2.9.u.7.8-apl DD	0P00000289	J.D4	0P00050	0P00000020	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
1.2.9.6.7.8-apl DD	0P00000699	J.D4 x	0P00050	0P00000020	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
1.2.9.7.8.C-apl DD	0P00000071C	J.D4 x	0P00050	0P00000018	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
1.2.9.u.7.8-apl DL	0P00000820	J.D4	0P00050	0P00000012	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
1.2.9.6.7.8-apl DL	0P00000777	J.D4 x	0P00050	0P00000012	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
1.2.9.7.8.C-apl DL	0P00000120	J.D4	0P00050	0P00000019	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
2.9.u.6.7.8-apl DL	0P00000608	J.D4	0P00050	0P00000011	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
1.2.9.u.6.7.8-aql DD	0P0000022C	J.D4	0P00050	0P00000026	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
1.2.9.u.6.7.8-aql DL	0P00000121	J.D4 x	0P00050	0P00000015	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
1.2.9.u.7.8.C-aql DL	0P0000008CC	J.D4	0P00050	0P00000018	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
Ol DD	0P0000158	J.D4 x	0P00010	0P00000025	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
Ol DL	0P0000028u	J.D4	0P00010	0P00000020	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
Toyi Tl DD	0P000009C6	J.D4 x	0P00010	0P0000002u	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
Toyi Tl DL	0P00000065C	J.D4 x	0P00010	0P00000019	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
Toyi j nl DD	0P00000800	J.D4	0P00050	0P00000020	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
Toyi j nl DL	0P0000011C	J.D4 x	0P00050	0P00000015	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
Toyi apl DD	0P00000u18	J.D4 x	0P00050	0P00000018	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
Toyi apl DL	0P000009u1	J.D4 x	0P00050	0P00000011	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
Toyi aql DD	0P00000uCC	J.D4 x	0P00050	0P00000026	XFSR		01S25S29 0u:98	01S28S29 15:u2	1
Toyi aql DL	0P00000295	J.D4 x	0P00050	0P00000015	XFSR		01S25S29 0u:98	01S28S29 15:u2	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*25 - 164*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-2,3,7,8-TCDF	*84*		*24 - 169*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,7,8-PeCDD	*77*		*25 - 181*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,7,8-PeCDF	*82*		*24 - 185*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-2,3,4,7,8-PeCDF	*83*		*21 - 178*	*01/25/23 04:38*	*01/28/23 15:42*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*32 - 141*	*01/25/23 04:38*	*01/28/23 15:42*	*1*

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Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-649091/1-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649091

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	89		28 - 130	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,7,8-HxCDF	84		26 - 152	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,6,7,8-HxCDF	93		26 - 123	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,7,8,9-HxCDF	89		29 - 147	01/25/23 04:38	01/28/23 15:42	1
13C-2,3,4,6,7,8-HxCDF	93		28 - 136	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,6,7,8-HpCDD	76		23 - 140	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,6,7,8-HpCDF	78		28 - 143	01/25/23 04:38	01/28/23 15:42	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	01/25/23 04:38	01/28/23 15:42	1
13C-OCDD	84		17 - 157	01/25/23 04:38	01/28/23 15:42	1
13C-OCDF	86		17 - 157	01/25/23 04:38	01/28/23 15:42	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	95		35 - 197	01/25/23 04:38	01/28/23 15:42	1

Lab Sample ID: LCS 320-649091/2-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649091

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2.9.7.8-TI DD			0P00200	0P00209		XFSR		102	67 - 158		
2.9.7.8-TI DL			0P00200	0P00205		XFSR		109	75 - 158		
1.2.9.7.8-j nl DD			0P00100	0P000C67		XFSR		C7	70 - 1u2		
1.2.9.7.8-j nl DL			0P00100	0P000C6u		XFSR		C6	80 - 19u		
2.9.u.7.8-j nl DL			0P00100	0P000CC9		XFSR		CC	68 - 160		
1.2.9.u.7.8-a pl DD			0P00100	0P000C25		XFSR		C9	70 - 16u		
1.2.9.6.7.8-a pl DD			0P00100	0P000C65		XFSR		C7	76 - 19u		
1.2.9.7.8.C-a pl DD			0P00100	0P000C25		XFSR		C2	6u - 162		
1.2.9.u.7.8-a pl DL			0P00100	0P000C7u		XFSR		C7	72 - 19u		
1.2.9.6.7.8-a pl DL			0P00100	0P000Cu5		XFSR		C5	8u - 190		
1.2.9.7.8.C-a pl DL			0P00100	0P000C5u		XFSR		C5	78 - 190		
2.9.u.6.7.8-a pl DL			0P00100	0P000C5C		XFSR		C6	70 - 156		
1.2.9.u.6.7.8-a ql DD			0P00100	0P000CuC		XFSR		C5	70 - 1u0		
1.2.9.u.6.7.8-a ql DL			0P00100	0P000C68		XFSR		C7	82 - 122		
1.2.9.u.7.8.C-a ql DL			0P00100	0P000C55		XFSR		C5	78 - 198		
Ol DD			0P00200	0P018C		XFSR		Cu	78 - 1uu		
Ol DL			0P00200	0P01C7		XFSR		CC	69 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	76		20 - 175
13C-2,3,7,8-TCDF	80		22 - 152
13C-1,2,3,7,8-PeCDD	75		21 - 227
13C-1,2,3,7,8-PeCDF	80		21 - 192
13C-2,3,4,7,8-PeCDF	79		13 - 328
13C-1,2,3,4,7,8-HxCDD	78		21 - 193
13C-1,2,3,6,7,8-HxCDD	81		25 - 163
13C-1,2,3,4,7,8-HxCDF	76		19 - 202
13C-1,2,3,6,7,8-HxCDF	86		21 - 159
13C-1,2,3,7,8,9-HxCDF	86		17 - 205

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Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-649091/2-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649091

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,4,6,7,8-HxCDF	88		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	75		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	76		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	85		13 - 199
13C-OCDF	86		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

Lab Sample ID: LCSD 320-649091/3-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649091

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2.9.7.8-TI DD			0P000200	0P000207		XFSR		109	67 - 158	2	50
2.9.7.8-TI DL			0P000200	0P000210		XFSR		105	75 - 158	2	50
1.2.9.7.8-j nl DD			0P00100	0P000C81		XFSR		C8	70 - 1u2	1	50
1.2.9.7.8-j nl DL			0P00100	0P00100		XFSR		100	80 - 19u	u	50
2.9.u.7.8-j nl DL			0P00100	0P00101		XFSR		101	68 - 160	1	50
1.2.9.u.7.8-a pl DD			0P00100	0P000C56		XFSR		C6	70 - 16u	9	50
1.2.9.6.7.8-a pl DD			0P00100	0P00100		XFSR		100	76 - 19u	u	50
1.2.9.7.8.C-a pl DD			0P00100	0P000CC7		XFSR		100	6u - 162	8	50
1.2.9.u.7.8-a pl DL			0P00100	0P000CCu		XFSR		CC	72 - 19u	2	50
1.2.9.6.7.8-a pl DL			0P00100	0P000CC0		XFSR		CC	8u - 190	5	50
1.2.9.7.8.C-a pl DL			0P00100	0P000C75		XFSR		C7	78 - 190	2	50
2.9.u.6.7.8-a pl DL			0P00100	0P000CC6		XFSR		100	70 - 156	u	50
1.2.9.u.6.7.8-a ql DD			0P00100	0P000C85		XFSR		CC	70 - 1u0	u	50
1.2.9.u.6.7.8-a ql DL			0P00100	0P00100		XFSR		100	82 - 122	u	50
1.2.9.u.7.8.C-a ql DL			0P00100	0P000C8u		XFSR		C8	78 - 198	9	50
Ol DD			0P00200	0P0021C		XFSR		10C	78 - 1uu	15	50
Ol DL			0P00200	0P00206		XFSR		109	69 - 170	u	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	81		20 - 175
13C-2,3,7,8-TCDF	86		22 - 152
13C-1,2,3,7,8-PeCDD	81		21 - 227
13C-1,2,3,7,8-PeCDF	85		21 - 192
13C-2,3,4,7,8-PeCDF	83		13 - 328
13C-1,2,3,4,7,8-HxCDD	80		21 - 193
13C-1,2,3,6,7,8-HxCDD	85		25 - 163
13C-1,2,3,4,7,8-HxCDF	80		19 - 202
13C-1,2,3,6,7,8-HxCDF	90		21 - 159
13C-1,2,3,7,8,9-HxCDF	92		17 - 205
13C-2,3,4,6,7,8-HxCDF	93		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	81		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	82		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	87		20 - 186

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-649091/3-A
Matrix: Water
Analysis Batch: 650047

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649091

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-OCDD	91		13 - 199
13C-OCDF	93		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	93		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-649091/1-A
Matrix: Water
Analysis Batch: 651543

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649091

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2.9.7.8-TI DL - Md	ND		0P000010	0P00000095	XFSR		01S25S29 0u:98	02S09S29 17:08	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	78		24 - 169	01/25/23 04:38	02/03/23 17:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	107		35 - 197	01/25/23 04:38	02/03/23 17:08	1

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Prep Batch: 649091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1 - RA	BGBMP0003_20230110	Total/NA	Water	1613B	
570-123901-1	BGBMP0003_20230110	Total/NA	Water	1613B	
570-123901-2 - RA	LXBMP0011_20230110	Total/NA	Water	1613B	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	1613B	
MB 320-649091/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-649091/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-649091/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-649091/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 650047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	1613B	649091
570-123901-2	LXBMP0011_20230110	Total/NA	Water	1613B	649091
MB 320-649091/1-A	Method Blank	Total/NA	Water	1613B	649091
LCS 320-649091/2-A	Lab Control Sample	Total/NA	Water	1613B	649091
LCSD 320-649091/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	649091

Analysis Batch: 651543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1 - RA	BGBMP0003_20230110	Total/NA	Water	1613B	649091
570-123901-2 - RA	LXBMP0011_20230110	Total/NA	Water	1613B	649091
MB 320-649091/1-A - RA	Method Blank	Total/NA	Water	1613B	649091

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-2

Client Sample ID: BGBMP0003_20230110

Lab Sample ID: 570-123901-1

Date Collected: 01/10/23 13:00

Matrix: Water

Date Received: 01/12/23 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		953.5 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651543	02/03/23 20:50	GRB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			953.5 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650047	01/28/23 21:54	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: LXBMP0011_20230110

Lab Sample ID: 570-123901-2

Date Collected: 01/10/23 10:00

Matrix: Water

Date Received: 01/12/23 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1028.2 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651543	02/03/23 21:27	GRB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1028.2 mL	20.0 uL	649091	01/25/23 04:38	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	650047	01/28/23 22:40	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-2

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123901-1	BGBMP0003_20230110	Water	01/10/23 13:00	01/12/23 17:55
570-123901-2	LXBMP0011_20230110	Water	01/10/23 10:00	01/12/23 17:55

123901

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs w Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc ts subsidiaries and affiliates, and TestAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▫ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total recoverable (Method 218.6)	Chromium VI, total dissolved (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Dissolved)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1 250mL Amber	1 250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1 500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
* BGBMP0003_20230110	01/10/23	1300	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
* LXBMP0011_20230110	01/10/23	1000	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Sample date corrected to 01/10/23 (MD 2/2/2023)

570-123901 Chain of Custody

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▫ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd. ____ Corr'd. ____ Therm ID No. ____	
Relinquished by	Company: SHA	Date/Time: 1/12/23 1255	Received by	Date/Time: 1/12/23 1255
Relinquished by	Company: EC	Date/Time: 1/12/23 1705	Received by	Date/Time: 1/12/23 1705
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.1/2.1 1.5/1.5 1.7/1.7 ~~SCC~~ SCC

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

123901

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs w Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc ts subsidiaries and affiliates, and TestAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☐ 2 weeks			Lab Sampling
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228 Sr-90 (E903.0/E903 E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As Ba, Be Cd Cr Cu, Fe Mn Ni, Pb, Se Sb, Tl; Method 200.7 B, Zn, – (Total Dissolved)	Method 200.8, Ag, Al, As, Ba Be, Cd Cr Cu Fe Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1 250mL Amber	1 250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1 500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
* BGBMP0003_20230110	01/09/23	1300	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
* LXBMP0011_20230110	01/10/23	1000	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
TB_			TB	WM	3	N	N															x			

570-123901 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

	1	1	1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5					

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C): Obs'd. _____ Corr'd. _____ Therm ID No. _____

Relinquished by	Company: SHA	Date/Time:	Received by	Date/Time:
Relinquished by	Company: EC 1/12/23 1255	Date/Time: 1/12/23 1255	Received by	Date/Time:
Relinquished by	Company:	Date/Time:	Received in Laboratory by	Date/Time:

2.1/2.1 1.5/1.5 1.7/1.7 ~~SCC~~ SCC

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204093.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123901-2
Address: 880 Riverside Parkway,	Due Date Requested: 1/30/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGBMP0003_20230110 (570-123901-1)	1/9/23	13:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
LXBMP0011_20230110 (570-123901-2)	1/9/23	10:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 01/13/23 14:20	Company: EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

x 1 received Broken. [initials] 1/16/23 1/2 out of Temp [initials] 1/16/23

2/6/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123901-2

Login Number: 123901
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123901-2

Login Number: 123901
List Number: 3
Creator: Fisher, Jamyiah L

List Source: Eurofins Sacramento
List Creation: 01/16/23 11:40 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	
Cooler Temperature is recorded.	True	6.9 5.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/3/2023 7:24:07 AM Revision 1

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123901-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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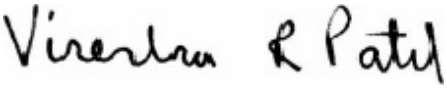
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123901-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123901-3

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 1/19/2023. The report (revision 1) is being revised due to: The clients office requested the sample collection to be changed to 01/10/2023. Please see COC section of the report for revised COC page..

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.5º C, 1.7º C and 2.1º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-3

Client Sample ID: BGBMP0003_20230110 — Lab Sample ID: 570-123901-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.020		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.018		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: LXBMP0011_20230110 — Lab Sample ID: 570-123901-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.019		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.015		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-3

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.020		0.00050	0.000079	ug/L			01/17/23 18:40	1

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.019		0.00050	0.000079	ug/L			01/17/23 18:44	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-3

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.018		0.00050	0.000079	ug/L			01/17/23 18:56	1

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.015		0.00050	0.000079	ug/L			01/17/23 19:00	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-415709/18
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 14:43	1

Lab Sample ID: MB 580-415709/19
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 14:47	1

Lab Sample ID: MB 580-415709/20
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 14:51	1

Lab Sample ID: LCS 580-415709/26
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00460		ug/L		92	77 - 123		

Lab Sample ID: LCSD 580-415709/27
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00468		ug/L		94	77 - 123	2	24

Lab Sample ID: 570-123916-E-1 MS
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00080		0.00500	0.00551		ug/L		94	71 - 125		

Lab Sample ID: 570-123916-E-1 MSD
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00080		0.00500	0.00544		ug/L		93	71 - 125	1	24

Lab Sample ID: 580-122215-A-1 MS
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00054		0.00500	0.00539		ug/L		97	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-122215-A-1 MSD
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00054		0.00500	0.00530		ug/L		95	71 - 125	2	24

Lab Sample ID: MB 580-415460/1-A
Matrix: Water
Analysis Batch: 415709

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/17/23 18:23	1

Client: Haley & Aldrich, Inc.
Job ID: 570-123901-3
Project/Site: Boeing SSFL ISRA and BMP

Metals

Filtration Batch: 415460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	Filtration	
570-123901-2	LXBMP0011_20230110	Dissolved	Water	Filtration	
MB 580-415460/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 415709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	1631E	415460
570-123901-1	BGBMP0003_20230110	Total/NA	Water	1631E	
570-123901-2	LXBMP0011_20230110	Dissolved	Water	1631E	415460
570-123901-2	LXBMP0011_20230110	Total/NA	Water	1631E	
MB 580-415460/1-A	Method Blank	Dissolved	Water	1631E	415460
MB 580-415709/18	Method Blank	Total/NA	Water	1631E	
MB 580-415709/19	Method Blank	Total/NA	Water	1631E	
MB 580-415709/20	Method Blank	Total/NA	Water	1631E	
LCS 580-415709/26	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-415709/27	Lab Control Sample Dup	Total/NA	Water	1631E	
570-123916-E-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-123916-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-122215-A-1 MS	Matrix Spike	Total/NA	Water	1631E	
580-122215-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-3

Client Sample ID: BGBMP0003_20230110

Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415460	01/16/23 10:41	DRM	EET SEA
Dissolved	Analysis	1631E		1			415709	01/17/23 18:56	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415709	01/17/23 18:40	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: LXBMP0011_20230110

Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415460	01/16/23 10:41	DRM	EET SEA
Dissolved	Analysis	1631E		1			415709	01/17/23 19:00	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			415709	01/17/23 18:44	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-3

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	01-24-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-3

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123901-1	BGBMP0003_20230110	Water	01/10/23 13:00	01/12/23 17:55
570-123901-2	LXBMP0011_20230110	Water	01/10/23 10:00	01/12/23 17:55

12390 1

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs w Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc ts subsidiaries and affiliates, and TestAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▫ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Trifluim (E906.0)	Chromium VI, total recoverable (Method 218.6)	Chromium VI, total dissolved (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Dissolved)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1 250mL Amber	1 250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1 500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
* BGBMP0003_20230110	01/10/23	1300	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
* LXBMP0011_20230110	01/10/23	1000	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Sample date corrected to 01/10/23 (MD 2/2/2023)

570-123901 Chain of Custody

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▫ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd. ____ Corr'd. ____ Therm ID No. ____	
Relinquished by	Company: SHA	Date/Time: 1/12/23 1755	Received by	Date/Time:
Relinquished by	Company: EC	Date/Time: 1/12/23 1755	Received by	Date/Time:
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.1/2.1 1.5/1.5 1.7/1.7 5CC

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

123901

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs w Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc ts subsidiaries and affiliates, and TestAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▫ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Trilium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn, – (Total Dissolved)	Method 200.8, Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1 250mL Amber	1 250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1 500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
* BGBMP0003_20230110	01/09/23	1300	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
* LXBMP0011_20230110	01/10/23	1000	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

570-123901 Chain of Custody

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▫ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ▫ Yes | Custody Seal No. | Cooler Temp. (°C): Obs'd. ____ Corr'd. ____ Therm ID No. ____

	Company	Date/Time		Date/Time
Relinquished by	SITA	[illegible]	Received by	Date/Time
Relinquished by	ECI	1/12/23 / 1755	Received by	1/13/23 1050
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.1/2.1 1.5/1.5 1.7/1.7 [illegible]

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204079.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123901-3
Address: 5755 8th Street East, ,	Due Date Requested: 1/30/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20230110 (570-123901-1)	1/9/23	13:00 Pacific		Water			X	X	2	
LXBMP0011_20230110 (570-123901-2)	1/9/23	10:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	01/13/23 1320	EC		1/14/23 925	ECIN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123901-3

Login Number: 123901
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123901-3

Login Number: 123901
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/16/23 10:37 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/7/2023 3:59:30 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123901-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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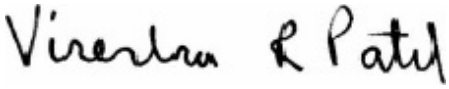
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
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(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123901-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123901-4

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.5º C, 1.7º C and 2.1º C.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-4

Client Sample ID: BGBMP0003_20230110 — Lab Sample ID: 570-123901-1

No Detections.

Client Sample ID: LXBMP0011_20230110 — Lab Sample ID: 570-123901-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: BGBMP0003_20230110
Lab Sample ID: 570-123901-1
Date Collected: 01/10/23 13:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/04/23 13:34	1

Client Sample ID: LXBMP0011_20230110
Lab Sample ID: 570-123901-2
Date Collected: 01/10/23 10:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/04/23 13:34	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	01/10/23
Date Received:	01/12/23
Work Order No:	570-123901
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
BGBMP0003_20230103		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	01/10/23
Date Received:	01/12/23
Work Order No:	570-123901
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
LXBMP0011_20230103		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

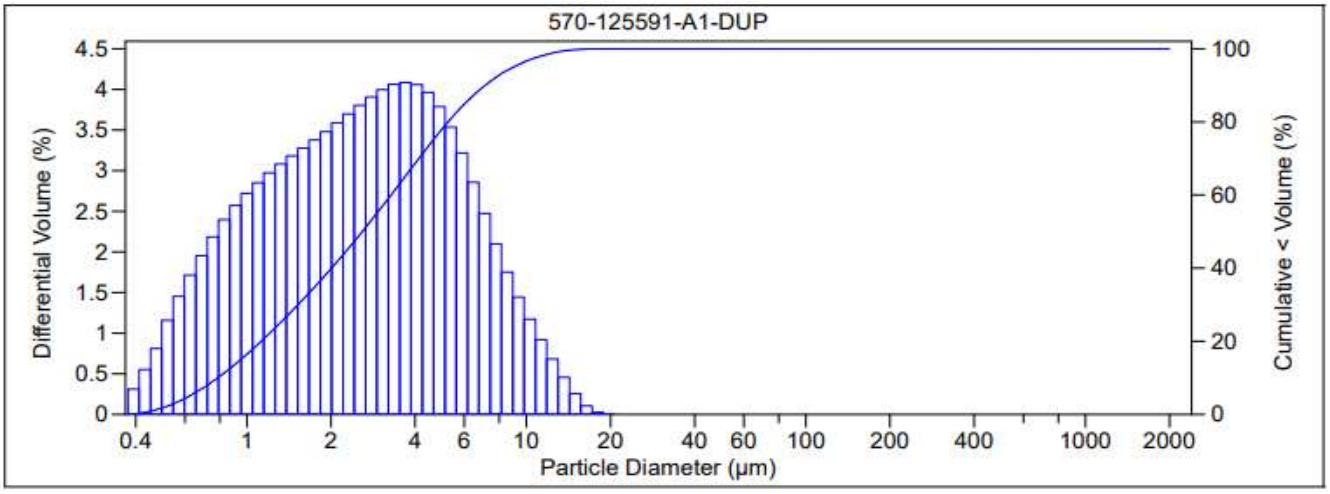
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125590
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13130

Sample ID	Depth ft	Description	Mean Grain Size mm
130-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	32.31	67.69	100.00



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

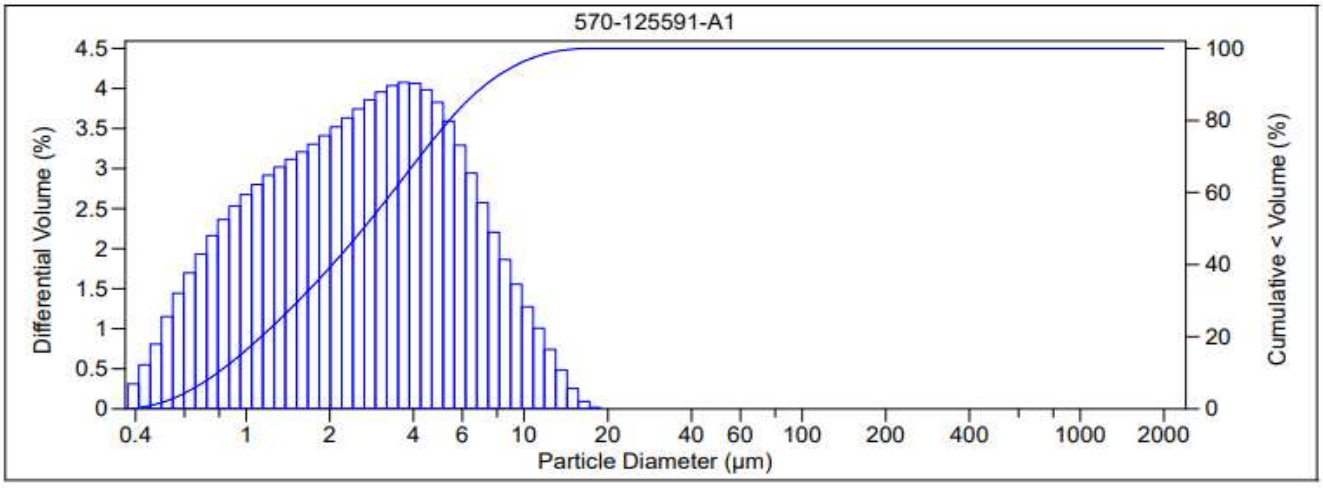
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125591
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13131

Sample ID	Depth ft	Description	Mean Grain Size mm
131-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	33.28	66.72	100.00



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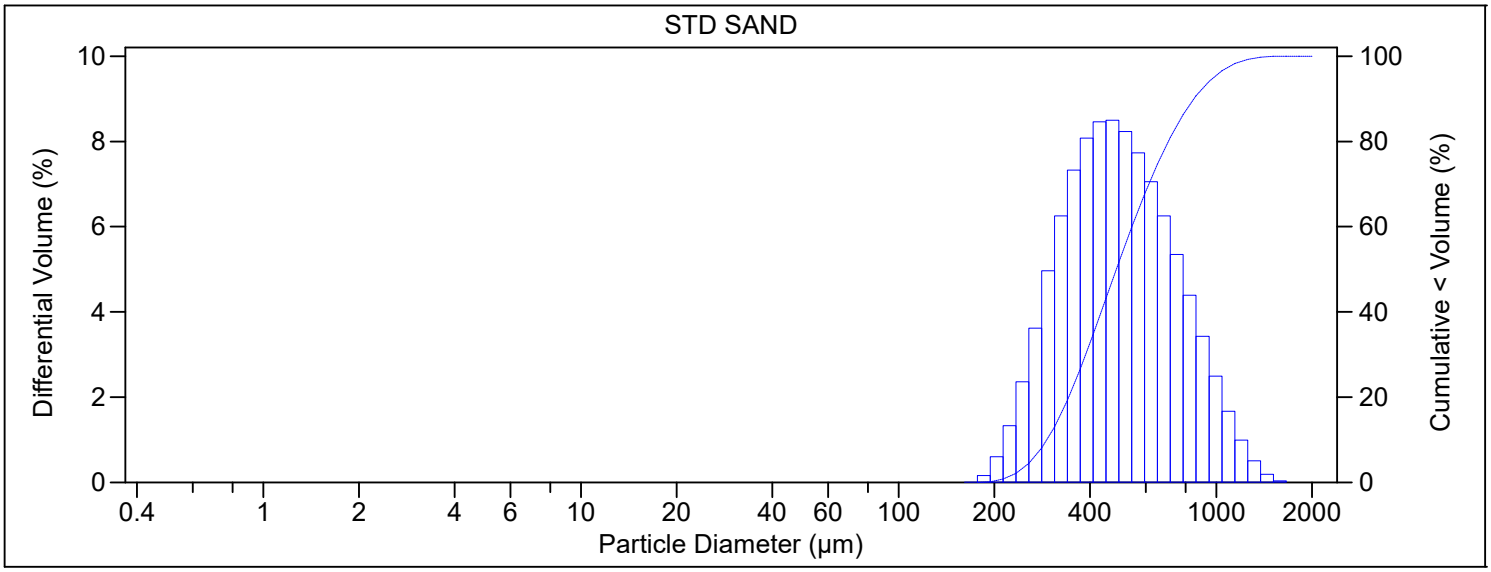
	STD SAND_ 3 Feb 2023_19.52.20.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	22		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	19:51 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 3 Feb 2023_19.52.20.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	534.6 µm	S.D.:	224.4 µm
Median:	485.0 µm	Variance:	50358 µm^2
Mean/Median ratio:	1.102	Skewness:	1.068 Right skewed
Mode:	471.1 µm	Kurtosis:	1.067 Leptokurtic

d_{10}: 292.7 µm d_{50}: 485.0 µm d_{90}: 851.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.02	Median:	1.04	Deviation:	0.60
Skewness:	-0.06	Kurtosis:	0.93		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
260.7 µm	323.9 µm	365.7 µm	434.7 µm	485.0 µm	656.2 µm	756.9 µm	981.3 µm

Particle Diameter µm	STD SAND_ 3 Feb 2023 _19.52.20 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	3.75
250	49.0
500	42.8
1000	4.50
2000	

STD SAND_ 3 Feb 2023_19.52.20.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.99
0.412	0	22.73	0	1255	0.51
0.452	0	24.95	0	1377	0.19
0.496	0	27.39	0	1512	0.034
0.545	0	30.07	0	1660	0.0013
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.011		
3.206	0	176.9	0.16		
3.519	0	194.2	0.60		
3.863	0	213.2	1.33		
4.241	0	234.1	2.36		
4.656	0	256.9	3.62		
5.111	0	282.1	4.97		
5.611	0	309.6	6.26		
6.159	0	339.9	7.33		
6.761	0	373.1	8.07		
7.422	0	409.6	8.46		
8.148	0	449.7	8.50		
8.944	0	493.6	8.23		
9.819	0	541.9	7.73		
10.78	0	594.9	7.06		
11.83	0	653.0	6.25		
12.99	0	716.9	5.35		
14.26	0	786.9	4.39		
15.65	0	863.9	3.43		
17.18	0	948.3	2.50		
18.86	0	1041	1.67		

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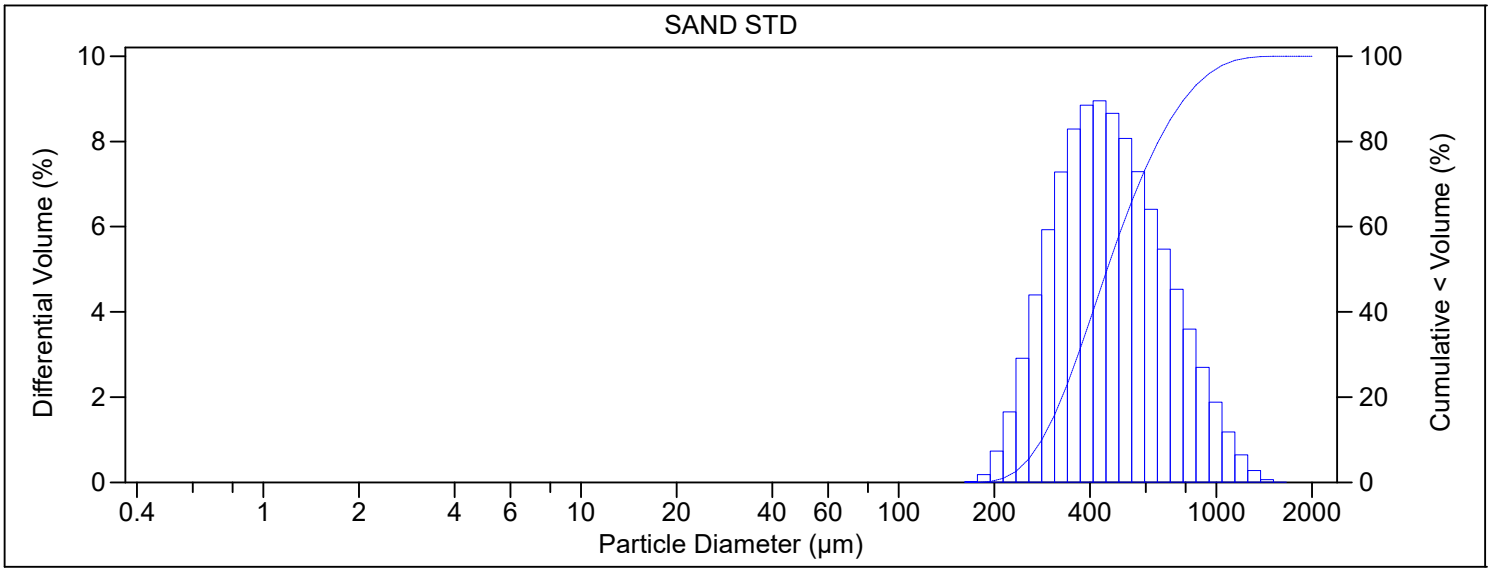
File ID:	SAND STD		
Sample ID:	SAND STD		
Operator:	C6FB		
Run number:	24		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:32 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) SAND STD_ 3 Feb 2023_20.33.47.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	501.8 µm	S.D.:	207.4 µm
Median:	453.7 µm	Variance:	42999 µm^2
Mean/Median ratio:	1.106	Skewness:	1.134 Right skewed
Mode:	429.2 µm	Kurtosis:	1.262 Leptokurtic

d_{10}: 282.5 µm d_{50}: 453.7 µm d_{90}: 794.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.11	Median:	1.14	Deviation:	0.58
Skewness:	-0.08	Kurtosis:	0.94		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
253.0 µm	310.4 µm	347.5 µm	408.6 µm	453.7 µm	611.0 µm	703.9 µm	919.1 µm

Particle Diameter µm	SAND STD_ 3 Feb 2023 _20.33.47 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	4.62
250	54.3
500	38.1
1000	3.02
2000	

SAND STD_ 3 Feb 2023_20.33.47.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.65
0.412	0	22.73	0	1255	0.28
0.452	0	24.95	0	1377	0.068
0.496	0	27.39	0	1512	0.0041
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.012		
3.206	0	176.9	0.19		
3.519	0	194.2	0.74		
3.863	0	213.2	1.65		
4.241	0	234.1	2.91		
4.656	0	256.9	4.40		
5.111	0	282.1	5.93		
5.611	0	309.6	7.28		
6.159	0	339.9	8.29		
6.761	0	373.1	8.85		
7.422	0	409.6	8.95		
8.148	0	449.7	8.66		
8.944	0	493.6	8.07		
9.819	0	541.9	7.29		
10.78	0	594.9	6.41		
11.83	0	653.0	5.48		
12.99	0	716.9	4.53		
14.26	0	786.9	3.59		
15.65	0	863.9	2.70		
17.18	0	948.3	1.88		
18.86	0	1041	1.18		

QC Sample Results

Client: Haynes & Andrews, Inc. Job ID: 570-129301-C
Job Number: 570-129301-C

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-125591-A-1 DU
Matrix: Water
Analysis Batch: 301228

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Liquid Nitrogen Hydrogen Oxide (mg/L)	7.72			7.73		G				1	20
Low Cost Bytes Not Detected (mg/L)	vD			vD		G				vl	20
Lean Bytes Not Detected (mg/L)	vD			vD		G				vl	20
Low Vinyl Fenyl Hydrogen (mg/L)	vD			vD		G				vl	20
Non-Reactive Bytes Not Detected (mg/L)	vD			vD		G				vl	20
Beam Not Detected (mg/L)	99.26			92.91		G				9	20
Total Beam Hydrogen Liquid Not Detected (mg/L)	100.00			100.00		G				0	20
4 no & Low Cost Bytes Not Detected (mg/L)	vD			vD		G				vl	20
4 no & Lean Bytes Not Detected (mg/L)	vD			vD		G				vl	20

Geotechnical

Analysis Batch: 301228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	D4464	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	D4464	
LCS 570-301228/22	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-301228/24	Lab Control Sample Dup	Total/NA	Water	D4464	
570-125591-A-1 DU	Duplicate	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-4

Client Sample ID: BGBMP0003_20230110

Lab Sample ID: 570-123901-1

Date Collected: 01/10/23 13:00

Matrix: Water

Date Received: 01/12/23 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/u A	Analysis	D4464		1			30122N	02/04/23 13:34	C6FB	EET CAL 4
	InstrmOent ID: u QEU=IP									

Client Sample ID: LXBMP0011_20230110

Lab Sample ID: 570-123901-2

Date Collected: 01/10/23 10:00

Matrix: Water

Date Received: 01/12/23 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/u A	Analysis	D4464		1			30122N	02/04/23 13:34	C6FB	EET CAL 4
	InstrmOent ID: u QEU=IP									

Laboratory References:

EET CAL 4 f Emro8ns Calscience Tmstin, 2N41 Dow Avenme, Tmstin, CA 927N0, TEL (714)N95-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
j ro/ectSBite: goeinF BBLRIBMA and gs j

Job ID: 570-129301-P

Laboratory: Eurofins Calscience

All accreditationf SertiNcationf held by thif laboratory are lif ted. p ot all accreditationf SertiNcationf are azzlicable to thif rezort.

Authority	Program	Identification Number	Expiration Date
AriZona	Btate	A80690	11-1u-29
CaliNornia	Rof AnFelef CoQnty Banitation Dif trictf	10103	07-91-29
CaliNornia	BCAv s D RAj	17RA0313	11-90-29
CaliNornia	Btate	9062	07-91-29
p eQada	Btate	CA00111	06-01-29
EreFon	p4RAj	P175	02-02-2P
UBDA	UB Lederal j roFramf	j 990-22-00053	05-2P-29
Waf hinFton	Btate	C31u-16	10-11-29

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-4

Method	Method Description	Protocol	Laboratory
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4

Protocol References:

ASTM = ASTM International

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123901-1	BGBMP0003_20230110	Water	01/10/23 13:00	01/12/23 17:55
570-123901-2	LXBMP0011_20230110	Water	01/10/23 10:00	01/12/23 17:55

123901

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs w Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc ts subsidiaries and affiliates, and TestAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▫ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total recoverable (Method 218.6)	Chromium VI, total dissolved (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Dissolved)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1 250mL Amber	1 250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1 500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
* BGBMP0003_20230110	01/10/23	1300	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
* LXBMP0011_20230110	01/10/23	1000	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Sample date corrected to 01/10/23 (MD 2/2/2023)

570-123901 Chain of Custody

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▫ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd. ____ Corr'd. ____ Therm ID No. ____	
Relinquished by	Company: SHA	Date/Time: 1/12/23 1755	Received by	Date/Time: 1/12/23 1755
Relinquished by	Company: EC	Date/Time: 1/12/23 1805	Received by	Date/Time:
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.1/2.1 1.5/1.5 1.7/1.7 ~~SCC~~ SCC

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/7/2023

12390 1

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs w Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc ts subsidiaries and affiliates, and TestAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
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(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
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H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Trilium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn, – (Total Dissolved)	Method 200.8, Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1 250mL Amber	1 250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1 500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
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* LXBMP0011_20230110	01/10/23	1000	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

570-123901 Chain of Custody

Possible Hazard Identification
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▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▫ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd. ____ Corr'd. ____ Therm ID No. ____	
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Relinquished by	Company: EC	Date/Time: 1/12/23 1755	Received by	Date/Time:
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.1/2.1 1.5/1.5 1.7/1.7 5cc

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/7/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123901-4

Login Number: 123901
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/15/2023 11:32:04 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123901-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

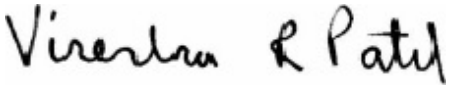
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-5

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-5

Job ID: 570-123901-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123901-5

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.5º C, 1.7º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

Job #: 570-124247 R-1
Job #: 570-124230 R-1,
Job #: 570-124243 AP-1 and AR-1
Job #: 570-124233 K-1
Job #: 570-124239 J-1
Job #: 570-123901 T-1, T-2, U-1, U-2
Job #: 570-123902 J-1, J-2, K-1, K-2

Melted Ice, Fed Ex delay 1 of 2 samples out of tempBGBMP0003_20230110 (570-123901-1)

1 of 2 containers for the following sample was received broken LXBMP0011_20230110 (570-123901-2)

RAD
Method 900.0: Gross Alpha Beta prep batch 160-598084:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230110 (570-123901-1), LXBMP0011_20230110 (570-123901-2), (LCS 160-598084/2-A), (LCSB 160-598084/3-A), (MB 160-598084/1-A), (570-123902-J-2-C), (570-123902-K-2-E), (570-123902-K-2-H DU), (570-123902-K-2-F MS) and (570-123902-K-2-G MSBT)

Method 901.1: Gamma Prep Batch 160-597762
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232

Job ID: 570-123901-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230110 (570-123901-1), (LCS 160-597762/2-A), (MB 160-597762/1-A), (570-123009-U-1-K) and (570-123009-U-1-L DU)

Method 901.1: Gamma Prep Batch 160-597608
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20230110 (570-123901-1), LXBMP0011_20230110 (570-123901-2) and (570-123901-U-1-F DU)

Method 901.1: Gamma Prep Batch 160-597949
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210

Job ID: 570-123901-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

LXBMP0011_20230110 (570-123901-2) and (570-123901-U-2-F DU)

Method 903.0: Radium-226 prep batch 160-597480:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230110 (570-123901-1), (LCS 160-597480/2-A), (LCSD 160-597480/3-A) and (MB 160-597480/1-A)

Methods 903.0, 9315: Radium-226 batch 597771
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230110 (570-123901-1), LXBMP0011_20230110 (570-123901-2), (LCS 160-597771/2-A), (MB 160-597771/1-A), (880-23869-B-2-A) and (880-23869-C-2-B DU)

Method 903.0: Radium-226 batch 597616
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
LXBMP0011_20230110 (570-123901-2), (LCS 160-597616/2-A), (MB 160-597616/1-A), (160-48612-B-1-A) and (160-48612-D-1-A DU)

Method 904.0: Radium-228 batch 597487
The LCS/LCSD recovered at (LCS 142% / LCSD 135%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-597487/2-A) and (LCSD 160-597487/3-A)

Method 904.0: Radium-228 batch 597487
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: BGBMP0003_20230110 (570-123901-1). Analytical results are reported with the detection limit achieved.

Job ID: 570-123901-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 904.0: Radium-228 batch 597487
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230110 (570-123901-1), (LCS 160-597487/2-A), (LCSD 160-597487/3-A) and (MB 160-597487/1-A)

Method 904.0: Radium 228 batch 597622
The LCS recovered at (126%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-597622/2-A)

Method 904.0: Radium 228 batch 597622
The detection goal was not met for the following sample(s). Samples are prepped at a reduced volume due to the presence of matrix interferences: LXBMP0011_20230110 (570-123901-2), (160-48612-B-1-B) and (160-48612-D-1-B DU). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium 228 batch 597622
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
LXBMP0011_20230110 (570-123901-2), (LCS 160-597622/2-A), (MB 160-597622/1-A), (160-48612-B-1-B) and (160-48612-D-1-B DU)

Methods 904.0, 9320: Radium-228 prep batch 160-597774:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230110 (570-123901-1), LXBMP0011_20230110 (570-123901-2), (LCS 160-597774/2-A), (MB 160-597774/1-A), (880-23869-B-2-B) and (880-23869-C-2-C DU)

Method 905: Strontium-90 prep batch 160-597465:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230110 (570-123901-1), (LCS 160-597465/2-A), (LCSD 160-597465/3-A) and (MB 160-597465/1-A)

Method 905: Strontium prep batch 160-597624:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. LXBMP0011_20230110 (570-123901-2), (LCS 160-597624/2-A), (LCSD 160-597624/3-A) and (MB 160-597624/1-A)

Method 905: Strontium-90 batch 598093
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date
BGBMP0003_20230110 (570-123901-1), LXBMP0011_20230110 (570-123901-2), (LCS 160-598093/2-A), (LCSD 160-598093/3-A) and (MB 160-598093/1-A)

Method 906.0: Tritium 598269
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time

Job ID: 570-123901-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

applied as the Activity Reference Date. BGBMP0003_20230110 (570-123901-1), LXBMP0011_20230110 (570-123901-2), (LCS 160-598269/2-A), (MB 160-598269/1-A), (160-48571-B-3-A), (160-48571-B-3-B DU), (160-48571-B-5-A) and (160-48571-B-5-B MS)

Methods A-01-R, U-02-RC: Isotopic Uranium batch 597538
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230110 (570-123901-1), LXBMP0011_20230110 (570-123901-2), (LCS 160-597538/2-A), (MB 160-597538/1-A), (570-123671-T-2-E) and (570-123671-T-2-F DU)

Method A-01-R: Isotopic Uranium batch 598867
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230110 (570-123901-1), LXBMP0011_20230110 (570-123901-2), (LCS 160-597806/2-A), (MB 160-597806/1-A), (570-123902-K-2-B) and (570-123902-K-2-C DU)

Method ExtChrom: Uranium Prep Batch 160-597806:

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: BGBMP0003_20230110 (570-123901-1) and LXBMP0011_20230110 (570-123901-2).

Method ExtChrom: Uranium Prep Batch 160-597538

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: BGBMP0003_20230110 (570-123901-1) and LXBMP0011_20230110 (570-123901-2).

Method PrecSep_0: Radium-228 Prep Batch 160-597487

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230110 (570-123901-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0:

Method PrecSep_0:

Method PrecSep-21: Radium-226 Prep Batch 160-597480

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230110 (570-123901-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21:

Method PrecSep-21:

Method PrecSep-7: Strontium-90 Prep Batch 160-597465

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230110 (570-123901-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Job ID: 570-123901-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method PrecSep-7: Strontium-90 Prep Batch 160-597624

The following sample was prepared at a reduced aliquot due to Matrix: LXBMP0011_20230110 (570-123901-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium 90 Prep Batch 160-598093

The following samples were prepared at a reduced aliquot due to Matrix: BGBMP0003_20230110 (570-123901-1) and LXBMP0011_20230110 (570-123901-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method Filtration: Filtration Prep Batch 160-597489:

Samples were mistakenly preserved upon receipt.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-5

Client Sample ID: BGBMP0003_20230110 — Lab Sample ID: 570-123901-1

No Detections.

Client Sample ID: LXBMP0011_20230110 — Lab Sample ID: 570-123901-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: BGBMP0003_20230110
Lab Sample ID: 570-123901-1
Date Collected: 01/10/23 13:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**1.42**		0.853	0.868	3.00	1.19	pCi/L	01/24/23 13:25	02/03/23 18:56	1
Gross Beta	**1.88**		0.685	0.710	4.00	0.909	pCi/L	01/24/23 13:25	02/03/23 18:56	1

Client Sample ID: LXBMP0011_20230110
Lab Sample ID: 570-123901-2
Date Collected: 01/10/23 10:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.699	U	1.12	1.12	3.00	1.91	pCi/L	01/24/23 13:25	02/03/23 18:56	1
Gross Beta	**2.43**		0.701	0.742	4.00	0.866	pCi/L	01/24/23 13:25	02/03/23 18:56	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.359	U	0.716	0.718	3.00	1.26	pCi/L	01/24/23 13:25	02/03/23 18:56	1
Gross Beta	**0.993**		0.610	0.618	4.00	0.922	pCi/L	01/24/23 13:25	02/03/23 18:56	1

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.397	U	0.857	0.858	3.00	1.50	pCi/L	01/24/23 13:25	02/03/23 19:04	1
Gross Beta	**1.14**		0.619	0.629	4.00	0.914	pCi/L	01/24/23 13:25	02/03/23 19:04	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: BGBMP0003_20230110
Lab Sample ID: 570-123901-1
Date Collected: 01/10/23 13:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.26	U	9.44	9.44	20.0	11.4	pCi/L	01/20/23 10:57	02/08/23 17:26	1
Potassium-40	**87.2**		59.2	60.1		80.9	pCi/L	01/20/23 10:57	02/08/23 17:26	1

Client Sample ID: LXBMP0011_20230110
Lab Sample ID: 570-123901-2
Date Collected: 01/10/23 10:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	3.70	U	6.82	6.83	20.0	8.23	pCi/L	01/20/23 10:57	02/08/23 21:17	1
Potassium-40	-56.5	U	115	115		149	pCi/L	01/20/23 10:57	02/08/23 21:17	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: BGBMP0003_20230110
Lab Sample ID: 570-123901-1
Date Collected: 01/10/23 13:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.802	U	7.37	7.37	20.0	8.69	pCi/L	01/23/23 09:10	02/03/23 22:09	1
Potassium-40	37.5	U	77.2	77.3		78.5	pCi/L	01/23/23 09:10	02/03/23 22:09	1

Client Sample ID: LXBMP0011_20230110
Lab Sample ID: 570-123901-2
Date Collected: 01/10/23 10:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.70	U	5.40	5.40	20.0	6.44	pCi/L	01/23/23 15:17	02/07/23 22:01	1
Potassium-40	**82.3**		69.0	69.7		67.4	pCi/L	01/23/23 15:17	02/07/23 22:01	1

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0530	U	0.0694	0.0695	1.00	0.189	pCi/L	01/19/23 11:31	02/10/23 07:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.3*		*40 - 110*	*01/19/23 11:31*	*02/10/23 07:37*	*1*

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.109	U	0.0995	0.100	1.00	0.150	pCi/L	01/20/23 12:30	02/13/23 15:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.1*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:24*	*1*

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0447	U	0.0590	0.0591	1.00	0.0983	pCi/L	01/23/23 10:32	02/14/23 08:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.3*		*40 - 110*	*01/23/23 10:32*	*02/14/23 08:42*	*1*

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0751	U	0.0765	0.0768	1.00	0.119	pCi/L	01/23/23 10:32	02/14/23 08:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.4*		*40 - 110*	*01/23/23 10:32*	*02/14/23 08:42*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.445	U G	0.605	0.607	1.00	1.02	pCi/L	01/19/23 12:00	01/25/23 12:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*82.3*		*40 - 110*	*01/19/23 12:00*	*01/25/23 12:06*	*1*
Y Carrier	*84.5*		*40 - 110*	*01/19/23 12:00*	*01/25/23 12:06*	*1*

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.495	U G	0.814	0.815	1.00	1.38	pCi/L	01/20/23 12:59	01/26/23 12:16	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.1*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:16*	*1*
Y Carrier	*43.0*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:16*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.461	U	0.380	0.383	1.00	0.582	pCi/L	01/23/23 10:58	01/27/23 12:40	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.3*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:40*	*1*
Y Carrier	*83.7*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:40*	*1*

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.195	U	0.381	0.382	1.00	0.666	pCi/L	01/23/23 10:58	01/27/23 12:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*87.4*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:46*	*1*
Y Carrier	*86.0*		*40 - 110*	*01/23/23 10:58*	*01/27/23 12:46*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.476	U	0.453	0.454	3.00	0.731	pCi/L	01/19/23 09:10	01/27/23 18:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.5*		*40 - 110*	*01/19/23 09:10*	*01/27/23 18:27*	*1*
Y Carrier	*78.1*		*40 - 110*	*01/19/23 09:10*	*01/27/23 18:27*	*1*

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	**0.774**		0.414	0.419	3.00	0.617	pCi/L	01/20/23 13:08	01/30/23 17:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.8*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:13*	*1*
Y Carrier	*87.5*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:13*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.276	U	0.277	0.278	3.00	0.448	pCi/L	01/24/23 15:23	02/01/23 15:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*88.4*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:53*	*1*
Y Carrier	*87.5*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:53*	*1*

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.192	U	0.284	0.285	3.00	0.477	pCi/L	01/24/23 15:23	02/01/23 15:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*89.3*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:46*	*1*
Y Carrier	*90.5*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:46*	*1*

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: BGBMP0003_20230110
Lab Sample ID: 570-123901-1
Date Collected: 01/10/23 13:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	129	U	155	155	500	254	pCi/L	01/26/23 08:47	02/01/23 11:57	1

Client Sample ID: LXBMP0011_20230110
Lab Sample ID: 570-123901-2
Date Collected: 01/10/23 10:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	54.5	U	153	153	500	271	pCi/L	01/26/23 08:47	02/01/23 12:20	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: BGBMP0003_20230110
Lab Sample ID: 570-123901-1
Date Collected: 01/10/23 13:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.0803	U	0.213	0.213	1.00	0.351	pCi/L	01/19/23 14:12	01/30/23 21:43	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*83.6*		*30 - 110*	*01/19/23 14:12*	*01/30/23 21:43*	*1*

Client Sample ID: LXBMP0011_20230110
Lab Sample ID: 570-123901-2
Date Collected: 01/10/23 10:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	**1.60**		0.563	0.572	1.00	0.268	pCi/L	01/19/23 14:12	01/30/23 21:43	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*78.3*		*30 - 110*	*01/19/23 14:12*	*01/30/23 21:43*	*1*

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: BGBMP0003_20230110
Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.103	U	0.159	0.159	1.00	0.234	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*79.5*		*30 - 110*	*01/23/23 13:17*	*01/27/23 11:32*	*1*

Client Sample ID: LXBMP0011_20230110
Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.153	U	0.190	0.190	1.00	0.256	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Tracer	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*88.9*		*30 - 110*	*01/23/23 13:17*	*01/27/23 11:32*	*1*

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-5

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
160-48612-D-1-A DU	Duplicate	79.4
570-123901-1	BGBMP0003_20230110	82.3
570-123901-2	LXBMP0011_20230110	69.1
880-23869-C-2-B DU	Duplicate	92.3
LCS 160-597480/2-A	Lab Control Sample	84.6
LCS 160-597616/2-A	Lab Control Sample	96.3
LCS 160-597771/2-A	Lab Control Sample	99.7
LCSD 160-597480/3-A	Lab Control Sample Dup	85.1
MB 160-597480/1-A	Method Blank	86.9
MB 160-597616/1-A	Method Blank	85.4
MB 160-597771/1-A	Method Blank	94.0

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
570-123901-1	BGBMP0003_20230110	94.3
570-123901-2	LXBMP0011_20230110	87.4

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123901-1	BGBMP0003_20230110	82.3	84.5
570-123901-2	LXBMP0011_20230110	69.1	43.0
880-23869-C-2-C DU	Duplicate	92.3	84.5
LCS 160-597487/2-A	Lab Control Sample	84.6	86.4
LCS 160-597622/2-A	Lab Control Sample	96.3	49.3
LCS 160-597774/2-A	Lab Control Sample	99.7	81.9
LCSD 160-597487/3-A	Lab Control Sample Dup	85.1	84.9
MB 160-597487/1-A	Method Blank	86.9	91.2
MB 160-597622/1-A	Method Blank	85.4	59.4
MB 160-597774/1-A	Method Blank	94.0	86.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123901-5
Project/Site: Boeing SSFL ISRA and BMP

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123901-1	BGBMP0003_20230110	94.3	83.7
570-123901-2	LXBMP0011_20230110	87.4	86.0

Tracer/Carrier Legend
Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123901-1	BGBMP0003_20230110	86.5	78.1
570-123901-2	LXBMP0011_20230110	87.8	87.5
LCS 160-597465/2-A	Lab Control Sample	88.8	74.0
LCS 160-597624/2-A	Lab Control Sample	90.8	84.1
LCS 160-598093/2-A	Lab Control Sample	87.6	86.4
LCSD 160-597465/3-A	Lab Control Sample Dup	89.3	69.5
LCSD 160-597624/3-A	Lab Control Sample Dup	87.3	88.2
LCSD 160-598093/3-A	Lab Control Sample Dup	85.5	87.9
MB 160-597465/1-A	Method Blank	85.4	84.9
MB 160-597624/1-A	Method Blank	89.1	85.6
MB 160-598093/1-A	Method Blank	84.7	84.9

Tracer/Carrier Legend
Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-123901-1	BGBMP0003_20230110	88.4	87.5
570-123901-2	LXBMP0011_20230110	89.3	90.5

Tracer/Carrier Legend
Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-123671-T-2-F DU	Duplicate	92.9
570-123901-1	BGBMP0003_20230110	83.6
570-123901-2	LXBMP0011_20230110	78.3
LCS 160-597538/2-A	Lab Control Sample	80.5
LCS 160-597806/2-A	Lab Control Sample	84.6

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123901-5
Project/Site: Boeing SSFL ISRA and BMP

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	U-232 (30-110)
MB 160-597538/1-A	Method Blank	80.4
MB 160-597806/1-A	Method Blank	88.9

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	U-232 (30-110)
570-123901-1	BGBMP0003_20230110	79.5
570-123901-2	LXBMP0011_20230110	88.9
570-123902-K-2-C DU	Duplicate	85.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-598084/1-A
Matrix: Water
Analysis Batch: 599319

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598084

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.8575	U	0.757	0.763	3.00	1.18	pCi/L	01/24/23 13:25	02/03/23 18:50	1
Gross Beta	0.05759	U	0.427	0.427	4.00	0.742	pCi/L	01/24/23 13:25	02/03/23 18:50	1

Lab Sample ID: LCS 160-598084/2-A
Matrix: Water
Analysis Batch: 599319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598084

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	56.66		7.91	3.00	1.84	pCi/L	112	75 - 125

Lab Sample ID: LCSB 160-598084/3-A
Matrix: Water
Analysis Batch: 599319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598084

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	65.34		7.07	4.00	1.00	pCi/L	89	75 - 125

Lab Sample ID: 570-123902-K-2-F MS
Matrix: Water
Analysis Batch: 599293

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 598084

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	0.346	U	50.5	38.32		5.25	3.00	0.860	pCi/L	75	60 - 140

Lab Sample ID: 570-123902-K-2-G MSBT
Matrix: Water
Analysis Batch: 599293

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 598084

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	1.02		73.7	67.59		7.27	4.00	0.875	pCi/L	90	60 - 140

Lab Sample ID: 570-123902-K-2-H DU
Matrix: Water
Analysis Batch: 599293

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 598084

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	0.346	U	0.1532	U	0.473	3.00	0.881	pCi/L	0.17	1
Gross Beta	1.02		0.4396	U	0.516	4.00	0.843	pCi/L	0.51	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597608/1-A
Matrix: Water
Analysis Batch: 599615

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597608

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.646	U	4.96	4.97	20.0	5.83	pCi/L	01/20/23 10:57	02/08/23 17:24	1
Potassium-40	39.35	U	77.1	77.2		80.4	pCi/L	01/20/23 10:57	02/08/23 17:24	1

Lab Sample ID: LCS 160-597608/2-A
Matrix: Water
Analysis Batch: 599622

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597608

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135600		16100		317	pCi/L	100	75 - 125
Cesium-137	41000	41990		5000	20.0	78.2	pCi/L	102	75 - 125
Cobalt-60	18100	19150		2280		42.4	pCi/L	106	75 - 125

Lab Sample ID: 570-123901-1 DU
Matrix: Water
Analysis Batch: 599615

Client Sample ID: BGBMP0003_20230110
Prep Type: Total/NA
Prep Batch: 597608

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-2.26	U	-4.511	U	8.72	20.0	9.96	pCi/L	0.12	1
Potassium-40	87.2		114.5		60.1		50.5	pCi/L	0.23	1

Lab Sample ID: MB 160-597762/1-A
Matrix: Water
Analysis Batch: 599334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597762

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.2826	U	7.23	7.23	20.0	8.99	pCi/L	01/23/23 09:10	02/03/23 19:56	1
Potassium-40	-27.29	U	98.1	98.2		124	pCi/L	01/23/23 09:10	02/03/23 19:56	1

Lab Sample ID: LCS 160-597762/2-A
Matrix: Water
Analysis Batch: 599336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597762

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	136300		16200		315	pCi/L	101	75 - 125
Cesium-137	41000	41970		5000	20.0	76.7	pCi/L	102	75 - 125
Cobalt-60	18200	18940		2260		46.2	pCi/L	104	75 - 125

Lab Sample ID: MB 160-597949/1-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597949

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.297	U	6.65	6.65	20.0	8.59	pCi/L	01/23/23 15:17	02/08/23 14:01	1
Potassium-40	43.04	U	107	107		122	pCi/L	01/23/23 15:17	02/08/23 14:01	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: LCS 160-597949/2-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597949

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Americium-241			135000	147900		17600		344	pCi/L	109	75 - 125		
Cesium-137			41000	39930		4760	20.0	101	pCi/L	97	75 - 125		
Cobalt-60			18100	17850		2130		66.0	pCi/L	99	75 - 125		

Lab Sample ID: 570-123009-U-1-L DU
Matrix: Water
Analysis Batch: 599329

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 597762

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Cesium-137	-4.40	U		1.760	U	9.33	20.0	11.7	pCi/L			0.36	1
Potassium-40	79.5			-6.796	U	124		145	pCi/L			0.45	1

Lab Sample ID: 570-123901-2 DU
Matrix: Water
Analysis Batch: 599622

Client Sample ID: LXBMP0011_20230110
Prep Type: Dissolved
Prep Batch: 597949

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Cesium-137	1.70	U		3.380	U	6.27	20.0	7.58	pCi/L			0.14	1
Potassium-40	82.3			-45.72	U	90.3		128	pCi/L			0.80	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-597480/1-A
Matrix: Water
Analysis Batch: 600015

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597480

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.06048	U	0.0554	0.0557	1.00	0.0831	pCi/L	01/19/23 11:31	02/10/23 07:35	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.9*		*40 - 110*	*01/19/23 11:31*	*02/10/23 07:35*	*1*

Lab Sample ID: LCS 160-597480/2-A
Matrix: Water
Analysis Batch: 600015

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597480

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	11.76		1.20	1.00	0.0976	pCi/L	104	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*84.6*		*40 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-597480/3-A
Matrix: Water
Analysis Batch: 600015

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597480

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.34		1.16	1.00	0.0982	pCi/L	100	75 - 125	0.18	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*85.1*		*40 - 110*

Lab Sample ID: MB 160-597616/1-A
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597616

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02734	U	0.0585	0.0585	1.00	0.106	pCi/L	01/20/23 12:30	02/13/23 15:23	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.4*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:23*	*1*

Lab Sample ID: LCS 160-597616/2-A
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597616

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.92		1.11	1.00	0.0938	pCi/L	96	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.3*		*40 - 110*

Lab Sample ID: 160-48612-D-1-A DU
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597616

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.0133	U		0.07048	U	0.0846	1.00	0.138	pCi/L			0.33	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*79.4*		*40 - 110*

Lab Sample ID: MB 160-597771/1-A
Matrix: Water
Analysis Batch: 600303

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597771

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02603	U	0.0443	0.0444	1.00	0.0494	pCi/L	01/23/23 10:32	02/14/23 08:39	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-597771/1-A
Matrix: Water
Analysis Batch: 600303

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597771

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110	01/23/23 10:32	02/14/23 08:39	1

Lab Sample ID: LCS 160-597771/2-A
Matrix: Water
Analysis Batch: 600303

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597771

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.74		1.09	1.00	0.0432	pCi/L	95	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	99.7		40 - 110

Lab Sample ID: 880-23869-C-2-B DU
Matrix: Water
Analysis Batch: 600303

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597771

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	-0.0352	U		0.006244	U	0.0522	1.00	0.102	pCi/L			0.39	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	92.3		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-597487/1-A
Matrix: Water
Analysis Batch: 598170

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597487

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.2403	U	0.449	0.450	1.00	0.921	pCi/L	01/19/23 12:00	01/25/23 17:30	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	86.9		40 - 110	01/19/23 12:00	01/25/23 17:30	1
Y Carrier	91.2		40 - 110	01/19/23 12:00	01/25/23 17:30	1

Lab Sample ID: LCS 160-597487/2-A
Matrix: Water
Analysis Batch: 598170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597487

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.25	11.73		1.52	1.00	0.521	pCi/L	142	75 - 125		

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-597487/2-A
Matrix: Water
Analysis Batch: 598170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597487

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	84.6		40 - 110
Y Carrier	86.4		40 - 110

Lab Sample ID: LCSD 160-597487/3-A
Matrix: Water
Analysis Batch: 598170

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597487

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.25	11.12		1.47	1.00	0.576	pCi/L	135	75 - 125	0.20	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	85.1		40 - 110
Y Carrier	84.9		40 - 110

Lab Sample ID: MB 160-597622/1-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597622

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1588	U	0.399	0.399	1.00	0.686	pCi/L	01/20/23 12:59	01/26/23 12:13	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.4		40 - 110	01/20/23 12:59	01/26/23 12:13	1
Y Carrier	59.4		40 - 110	01/20/23 12:59	01/26/23 12:13	1

Lab Sample ID: LCS 160-597622/2-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597622

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.24	10.41		1.36	1.00	0.674	pCi/L	126	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	96.3		40 - 110
Y Carrier	49.3		40 - 110

Lab Sample ID: MB 160-597774/1-A
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597774

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.8428		0.378	0.385	1.00	0.306	pCi/L	01/23/23 10:58	01/27/23 12:34	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-597774/1-A
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597774

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		40 - 110	01/23/23 10:58	01/27/23 12:34	1
Y Carrier	86.7		40 - 110	01/23/23 10:58	01/27/23 12:34	1

Lab Sample ID: LCS 160-597774/2-A
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597774

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.24	9.007		1.23	1.00	0.285	pCi/L	109	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	99.7		40 - 110
Y Carrier	81.9		40 - 110

Lab Sample ID: 880-23869-C-2-C DU
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597774

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.293	U		0.2611	U	0.327	1.00	0.540	pCi/L			0.05	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	92.3		40 - 110
Y Carrier	84.5		40 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-597465/1-A
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597465

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.007801	U	0.199	0.199	3.00	0.356	pCi/L	01/19/23 09:10	01/27/23 18:27	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	85.4		40 - 110	01/19/23 09:10	01/27/23 18:27	1
Y Carrier	84.9		40 - 110	01/19/23 09:10	01/27/23 18:27	1

Lab Sample ID: LCS 160-597465/2-A
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597465

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.38	7.362		0.845	3.00	0.369	pCi/L	100	75 - 125		

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	88.8		40 - 110
Y Carrier	74.0		40 - 110

Lab Sample ID: LCSD 160-597465/3-A
Matrix: Water
Analysis Batch: 598536

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597465

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.38	8.158		0.921	3.00	0.366	pCi/L	111	75 - 125	0.45	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	89.3		40 - 110
Y Carrier	69.5		40 - 110

Lab Sample ID: MB 160-597624/1-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597624

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1919	U	0.177	0.177	3.00	0.284	pCi/L	01/20/23 13:08	01/30/23 17:13	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	89.1		40 - 110	01/20/23 13:08	01/30/23 17:13	1
Y Carrier	85.6		40 - 110	01/20/23 13:08	01/30/23 17:13	1

Lab Sample ID: LCS 160-597624/2-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597624

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	7.782		0.841	3.00	0.259	pCi/L	106	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	90.8		40 - 110
Y Carrier	84.1		40 - 110

Lab Sample ID: LCSD 160-597624/3-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597624

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	7.236		0.795	3.00	0.281	pCi/L	98	75 - 125	0.33	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	87.3		40 - 110
Y Carrier	88.2		40 - 110

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: MB 160-598093/1-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598093

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.03468	U	0.135	0.135	3.00	0.252	pCi/L	01/24/23 15:23	02/01/23 15:51	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*84.7*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:51*	*1*
Y Carrier	*84.9*		*40 - 110*	*01/24/23 15:23*	*02/01/23 15:51*	*1*

Lab Sample ID: LCS 160-598093/2-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598093

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	5.824		0.653	3.00	0.278	pCi/L	79	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*87.6*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Lab Sample ID: LCSD 160-598093/3-A
Matrix: Water
Analysis Batch: 598871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598093

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	6.122		0.674	3.00	0.220	pCi/L	83	75 - 125	0.22	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.5*		*40 - 110*
Y Carrier	*87.9*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-598269/1-A
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598269

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	137.8	U	159	159	500	261	pCi/L	01/26/23 08:47	02/01/23 10:49	1

Lab Sample ID: LCS 160-598269/2-A
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598269

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2110	2226		377	500	263	pCi/L	105	75 - 125		

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: 160-48571-B-5-B MS
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598269

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	153	U	2140	2086		358	500	253	pCi/L	90	60 - 140		

Lab Sample ID: 160-48571-B-3-B DU
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598269

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	102	U		145.0	U	161	500	263	pCi/L			0.14	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-597538/1-A
Matrix: Water
Analysis Batch: 598766

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597538

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.08454	U	0.1204	0.1205	1.00	0.175	pCi/L	01/19/23 14:12	01/30/23 21:45	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*80.4*		*30 - 110*	*01/19/23 14:12*	*01/30/23 21:45*	*1*

Lab Sample ID: LCS 160-597538/2-A
Matrix: Water
Analysis Batch: 598767

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597538

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.89		1.52	1.00	0.204	pCi/L	101	75 - 125		
Uranium-238			13.0	12.29		1.47	1.00	0.135	pCi/L	94	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*80.5*		*30 - 110*

Lab Sample ID: 570-123671-T-2-F DU
Matrix: Water
Analysis Batch: 598726

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597538

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Total Uranium	1.09			1.050		0.326	1.00	0.143	pCi/L			0.06	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Uranium-232	*92.9*		*30 - 110*

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: MB 160-597806/1-A
Matrix: Water
Analysis Batch: 598399

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597806

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1420		0.1193	0.1196	1.00	0.134	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Tracer	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Uranium-232	*88.9*		*30 - 110*	*01/23/23 13:17*	*01/27/23 11:32*	*1*

Lab Sample ID: LCS 160-597806/2-A
Matrix: Water
Analysis Batch: 598400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597806

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.58		1.50	1.00	0.117	pCi/L	99	75 - 125		
Uranium-238			13.0	12.67		1.51	1.00	0.102	pCi/L	97	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*84.6*		*30 - 110*

Lab Sample ID: 570-123902-K-2-C DU
Matrix: Water
Analysis Batch: 598414

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 597806

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.356			0.1046	U	0.1246	1.00	0.162	pCi/L			0.72	1

Tracer	*DU %Yield*	*DU Qualifier*	*Limits*
Uranium-232	*85.8*		*30 - 110*

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Filtration Batch: 596502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-U-1-L DU	Duplicate	Dissolved	Water	Filtration	

Prep Batch: 597465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	PrecSep-7	
MB 160-597465/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-597465/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597465/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	PrecSep-21	
MB 160-597480/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597480/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-597480/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 597487

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	PrecSep_0	
MB 160-597487/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597487/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-597487/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Filtration Batch: 597489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	Filtration	
570-123901-2	LXBMP0011_20230110	Dissolved	Water	Filtration	
570-123902-K-2-F MS	Matrix Spike	Dissolved	Water	Filtration	
570-123902-K-2-G MSBT	Matrix Spike	Dissolved	Water	Filtration	
570-123901-2 DU	LXBMP0011_20230110	Dissolved	Water	Filtration	
570-123902-K-2-C DU	Duplicate	Dissolved	Water	Filtration	
570-123902-K-2-H DU	Duplicate	Dissolved	Water	Filtration	

Prep Batch: 597538

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	ExtChrom	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	ExtChrom	
MB 160-597538/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597538/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123671-T-2-F DU	Duplicate	Total/NA	Water	ExtChrom	

Prep Batch: 597608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	Fill_Geo-0	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	Fill_Geo-0	
MB 160-597608/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597608/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123901-1 DU	BGBMP0003_20230110	Total/NA	Water	Fill_Geo-0	

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Prep Batch: 597616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-2	LXBMP0011_20230110	Total/NA	Water	PrecSep-21	
MB 160-597616/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597616/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-48612-D-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 597622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-2	LXBMP0011_20230110	Total/NA	Water	PrecSep_0	
MB 160-597622/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597622/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 597624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-2	LXBMP0011_20230110	Total/NA	Water	PrecSep-7	
MB 160-597624/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-597624/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597624/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	Fill_Geo-0	597489
MB 160-597762/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597762/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123009-U-1-L DU	Duplicate	Dissolved	Water	Fill_Geo-0	596502

Prep Batch: 597771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	PrecSep-21	597489
570-123901-2	LXBMP0011_20230110	Dissolved	Water	PrecSep-21	597489
MB 160-597771/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597771/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
880-23869-C-2-B DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 597774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	PrecSep_0	597489
570-123901-2	LXBMP0011_20230110	Dissolved	Water	PrecSep_0	597489
MB 160-597774/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597774/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
880-23869-C-2-C DU	Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 597806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	ExtChrom	597489
570-123901-2	LXBMP0011_20230110	Dissolved	Water	ExtChrom	597489
MB 160-597806/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597806/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123902-K-2-C DU	Duplicate	Dissolved	Water	ExtChrom	597489

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Prep Batch: 597949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-2	LXBMP0011_20230110	Dissolved	Water	Fill_Geo-0	597489
MB 160-597949/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597949/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123901-2 DU	LXBMP0011_20230110	Dissolved	Water	Fill_Geo-0	597489

Prep Batch: 598084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	Evaporation	597489
570-123901-1	BGBMP0003_20230110	Total/NA	Water	Evaporation	
570-123901-2	LXBMP0011_20230110	Dissolved	Water	Evaporation	597489
570-123901-2	LXBMP0011_20230110	Total/NA	Water	Evaporation	
MB 160-598084/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598084/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598084/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123902-K-2-F MS	Matrix Spike	Dissolved	Water	Evaporation	597489
570-123902-K-2-G MSBT	Matrix Spike	Dissolved	Water	Evaporation	597489
570-123902-K-2-H DU	Duplicate	Dissolved	Water	Evaporation	597489

Prep Batch: 598093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Dissolved	Water	PrecSep-7	597489
570-123901-2	LXBMP0011_20230110	Dissolved	Water	PrecSep-7	597489
MB 160-598093/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-598093/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-598093/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 598269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-1	BGBMP0003_20230110	Total/NA	Water	LSC_Dist_Susp	
570-123901-2	LXBMP0011_20230110	Total/NA	Water	LSC_Dist_Susp	
MB 160-598269/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-598269/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
160-48571-B-5-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
160-48571-B-3-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-5

Client Sample ID: BGBMP0003_20230110

Date Collected: 01/10/23 13:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	Evaporation			200.00 mL	1.0 g	598084	01/24/23 13:25	MST	EET SL
Dissolved	Analysis	900.0		1			599294	02/03/23 18:56	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			200.00 mL	1.0 g	598084	01/24/23 13:25	MST	EET SL
Total/NA	Analysis	900.0		1			599294	02/03/23 18:56	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597762	01/23/23 09:10	JML	EET SL
Dissolved	Analysis	901.1		1			599332	02/03/23 22:09	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597608	01/20/23 10:57	SEH	EET SL
Total/NA	Analysis	901.1		1			599623	02/08/23 17:26	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	PrecSep-21			745.04 mL	1.0 g	597771	01/23/23 10:32	DJP	EET SL
Dissolved	Analysis	903.0		1			600303	02/14/23 08:42	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			502.08 mL	1.0 g	597480	01/19/23 11:31	DJP	EET SL
Total/NA	Analysis	903.0		1			600015	02/10/23 07:37	SCB	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	PrecSep_0			745.04 mL	1.0 g	597774	01/23/23 10:58	DJP	EET SL
Dissolved	Analysis	904.0		1	1.0 mL	1.0 mL	598556	01/27/23 12:40	SCB	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			502.08 mL	1.0 g	597487	01/19/23 12:00	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	598172	01/25/23 12:06	SCB	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	PrecSep-7			500.42 mL	1.0 g	598093	01/24/23 15:23	DJP	EET SL
Dissolved	Analysis	905		1			598871	02/01/23 15:53	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			506.65 mL	1.0 g	597465	01/19/23 09:10	DJP	EET SL
Total/NA	Analysis	905		1			598536	01/27/23 18:27	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			96.36 mL	1.0 g	598269	01/26/23 08:47	SEH	EET SL
Total/NA	Analysis	906.0		1			599474	02/01/23 11:57	REV	EET SL
	Instrument ID: LSCBROWN									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	ExtChrom			301.34 mL	1.0 mL	597806	01/23/23 13:17	MAL	EET SL
Dissolved	Analysis	A-01-R		1			598403	01/27/23 11:32	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			250.32 mL	1.0 mL	597538	01/19/23 14:12	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598738	01/30/23 21:43	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-5

Client Sample ID: LXBMP0011_20230110

Date Collected: 01/10/23 10:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123901-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	Evaporation			199.99 mL	1.0 g	598084	01/24/23 13:25	MST	EET SL
Dissolved	Analysis	900.0		1			599293	02/03/23 19:04	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Evaporation			199.99 mL	1.0 g	598084	01/24/23 13:25	MST	EET SL
Total/NA	Analysis	900.0		1			599294	02/03/23 18:56	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597949	01/23/23 15:17	JML	EET SL
Dissolved	Analysis	901.1		1			599497	02/07/23 22:01	SCB	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597608	01/20/23 10:57	SEH	EET SL
Total/NA	Analysis	901.1		1			599622	02/08/23 21:17	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	PrecSep-21			744.81 mL	1.0 g	597771	01/23/23 10:32	DJP	EET SL
Dissolved	Analysis	903.0		1			600303	02/14/23 08:42	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			740.76 mL	1.0 g	597616	01/20/23 12:30	DJP	EET SL
Total/NA	Analysis	903.0		1			600138	02/13/23 15:24	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	PrecSep_0			744.81 mL	1.0 g	597774	01/23/23 10:58	DJP	EET SL
Dissolved	Analysis	904.0		1	1.0 mL	1.0 mL	598555	01/27/23 12:46	SCB	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			740.76 mL	1.0 g	597622	01/20/23 12:59	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	598283	01/26/23 12:16	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	PrecSep-7			506.94 mL	1.0 g	598093	01/24/23 15:23	DJP	EET SL
Dissolved	Analysis	905		1			598876	02/01/23 15:46	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			506.12 mL	1.0 g	597624	01/20/23 13:08	DJP	EET SL
Total/NA	Analysis	905		1			598611	01/30/23 17:13	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	LSC_Dist_Susp			99.05 mL	1.0 g	598269	01/26/23 08:47	SEH	EET SL
Total/NA	Analysis	906.0		1			599474	02/01/23 12:20	REV	EET SL
	Instrument ID: LSCBROWN									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	ExtChrom			298.53 mL	1.0 mL	597806	01/23/23 13:17	MAL	EET SL
Dissolved	Analysis	A-01-R		1			598405	01/27/23 11:32	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			250.28 mL	1.0 mL	597538	01/19/23 14:12	SAC	EET SL
Total/NA	Analysis	A-01-R		1			598722	01/30/23 21:43	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-5

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123901-5
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-5

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123901-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123901-1	BGBMP0003_20230110	Water	01/10/23 13:00	01/12/23 17:55
570-123901-2	LXBMP0011_20230110	Water	01/10/23 10:00	01/12/23 17:55

123901

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs w Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc ts subsidiaries and affiliates, and TestAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☐ 2 weeks			Lab Sampling
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total recoverable (Method 218.6)	Chromium VI, total dissolved (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn, – (Total Dissolved)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1 250mL Amber	1 250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1 500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
* BGBMP0003_20230110	01/10/23	1300	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
* LXBMP0011_20230110	01/10/23	1000	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Sample date corrected to 01/10/23 (MD 2/2/2023)

570-123901 Chain of Custody

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd. ____ Corr'd. ____ Therm ID No. ____	
Relinquished by	Company: SHA	Date/Time: 1/12/23 1755	Received by	Date/Time: 1/12/23 1755
Relinquished by	Company: EC	Date/Time: 1/12/23 1755	Received by	Date/Time: 1/12/23 1755
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.1/2.1 1.5/1.5 1.7/1.7 ~~SCC~~ SCC

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/15/2023

12390 1

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs w Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich nc ts subsidiaries and affiliates, and TestAmerica Laboratories nc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▫ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228 Sr-90 (E903.0/E903 E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As Ba, Be Cd Cr Cu, Fe Mn Ni, Pb, Se Sb, Tl; Method 200.7 B, Zn, – (Total Dissolved)	Method 200.8, Ag, Al, As, Ba Be, Cd Cr Cu Fe Mn, Ni, Pb, Se, Sb, Tl; Method 200.7 B, Zn – (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1 250mL Poly	1-250mL Poly	1 250mL Amber	1 250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1 500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
* BGBMP0003_20230110	01/09/23	1300	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
* LXBMP0011_20230110	01/10/23	1000	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

570-123901 Chain of Custody

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▫ Archive for 6 Months

Special Instructions/QC Requirements & Comments ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd. ____ Corr'd. ____ Therm ID No. ____	
Relinquished by	Company: SHA	Date/Time:	Received by	Date/Time:
Relinquished by	Company: EC	Date/Time: 1/12/23 1755	Received by	Date/Time:
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.1/2.1 1.5/1.5 1.7/1.7 ~~SCC~~ SCC

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/15/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204357.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123901-5
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/14/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20230110 (570-123901-1)	1/9/23	13:00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
LXBMP0011_20230110 (570-123901-2)	1/9/23	10:00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
																				6	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FEDEX	01/17/23 11:30	EC	FEDEX	--	
2	Relinquished by:	Date/Time:	Company	Received by: Briana Sharkey-Gonzalez	Date/Time: 1/18/23 9:50	Company ETASTL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/15/2023

ICOC No:
570-204357

Containers

Count	Container Type	Preservative
2	Amber Glass 250ml - unpreserved	None
4	Plastic 2.5 Gallon	None

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123901-5

Login Number: 123901
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123901-5

Login Number: 123901
List Number: 4
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/18/23 12:01 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/23/2023 9:36:32 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123902-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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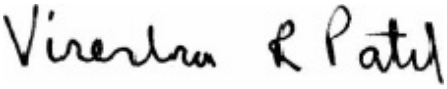
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123902-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123902-1

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.7 Rev 4.4: The matrix spike / matrix spike duplicate (MS/MSD) recoveries of Iron for preparation batch 570-296322 and analytical batch 570-296650 were outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 200.8: The method blank for preparation batch 570-296325 and analytical batch 570-296466 contained Copper and Lead above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPSW001IE01_20230110 (570-123902-1) and A1BPSW0001_20230110 (570-123902-2). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPSW001IE01_20230110 (570-123902-1) and A1BPSW0001_20230110 (570-123902-2). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: The sample duplicate (DUP) precision for analytical batch 570-295730 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

Client Sample ID: EPSW001IE01_20230110 — Lab Sample ID: 570-123902-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	0.72	J,DX	1.0	0.24	mg/L	1		300.0	Total/NA
Iron	7900		500	56	ug/L	1		200.7 Rev 4.4	Total Recoverable
Manganese	780		50	1.3	ug/L	1		200.7 Rev 4.4	Total Recoverable
Zinc	58	J,DX	250	4.6	ug/L	1		200.7 Rev 4.4	Total Recoverable
Iron	200	J,DX BU	500	56	ug/L	1		200.7 Rev 4.4	Dissolved
Manganese	3.8	J,DX BU	50	1.3	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	1.5		1.0	0.16	ug/L	1		200.8	Total Recoverable
Cadmium	0.24	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	9.0	MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	6.8	MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Selenium	1.8	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Arsenic	0.72	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	1.4	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.40	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	200		3.3	2.8	mg/L	1		SM 2540D	Total/NA

Client Sample ID: A1BPSW0001_20230110 — Lab Sample ID: 570-123902-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	0.84	J,DX	1.0	0.24	mg/L	1		300.0	Total/NA
Iron	1000		500	56	ug/L	1		200.7 Rev 4.4	Total Recoverable
Manganese	36	J,DX	50	1.3	ug/L	1		200.7 Rev 4.4	Total Recoverable
Zinc	51	J,DX	250	4.6	ug/L	1		200.7 Rev 4.4	Total Recoverable
Manganese	4.4	J,DX BU	50	1.3	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.27	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Copper	1.6	J,DX MB	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	0.50	J,DX MB	1.0	0.12	ug/L	1		200.8	Total Recoverable
Arsenic	0.23	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	0.61	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Total Suspended Solids	25		1.7	1.4	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/09/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.72	J,DX	1.0	0.24	mg/L			01/17/23 08:22	1

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/09/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.84	J,DX	1.0	0.24	mg/L			01/17/23 08:39	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/09/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	7900		500	56	ug/L		01/17/23 07:18	01/18/23 00:06	1
Manganese	780		50	1.3	ug/L		01/17/23 07:18	01/18/23 00:06	1
Zinc	58	J,DX	250	4.6	ug/L		01/17/23 07:18	01/18/23 00:06	1

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/09/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1000		500	56	ug/L		01/17/23 07:18	01/18/23 00:09	1
Manganese	36	J,DX	50	1.3	ug/L		01/17/23 07:18	01/18/23 00:09	1
Zinc	51	J,DX	250	4.6	ug/L		01/17/23 07:18	01/18/23 00:09	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/09/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**200**	**J,DX BU**	500	56	ug/L			01/19/23 23:34	1
Manganese	**3.8**	**J,DX BU**	50	1.3	ug/L			01/19/23 23:34	1
Zinc	ND	BU	250	4.6	ug/L			01/19/23 23:34	1

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/09/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND	BU	500	56	ug/L			01/19/23 23:36	1
Manganese	**4.4**	**J,DX BU**	50	1.3	ug/L			01/19/23 23:36	1
Zinc	ND	BU	250	4.6	ug/L			01/19/23 23:36	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/09/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.5**		1.0	0.16	ug/L		01/17/23 08:06	01/17/23 12:22	1
Cadmium	**0.24**	**J,DX**	1.0	0.13	ug/L		01/17/23 08:06	01/17/23 12:22	1
Copper	**9.0**	**MB**	2.0	0.32	ug/L		01/17/23 08:06	01/17/23 12:22	1
Lead	**6.8**	**MB**	1.0	0.12	ug/L		01/17/23 08:06	01/17/23 12:22	1
Selenium	**1.8**	**J,DX**	2.0	0.52	ug/L		01/17/23 08:06	01/17/23 12:22	1

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/09/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.27**	**J,DX**	1.0	0.16	ug/L		01/17/23 08:06	01/17/23 12:24	1
Cadmium	ND		1.0	0.13	ug/L		01/17/23 08:06	01/17/23 12:24	1
Copper	**1.6**	**J,DX MB**	2.0	0.32	ug/L		01/17/23 08:06	01/17/23 12:24	1
Lead	**0.50**	**J,DX MB**	1.0	0.12	ug/L		01/17/23 08:06	01/17/23 12:24	1
Selenium	ND		2.0	0.52	ug/L		01/17/23 08:06	01/17/23 12:24	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/09/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.72**	**J,DX BU**	1.0	0.16	ug/L			01/18/23 09:14	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/18/23 09:14	1
Copper	**1.4**	**J,DX BU**	2.0	0.32	ug/L			01/18/23 09:14	1
Lead	**0.40**	**J,DX BU**	1.0	0.12	ug/L			01/18/23 09:14	1
Selenium	ND	BU	2.0	0.52	ug/L			01/18/23 09:14	1

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/09/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.23**	**J,DX BU**	1.0	0.16	ug/L			01/18/23 09:16	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/18/23 09:16	1
Copper	**0.61**	**J,DX BU**	2.0	0.32	ug/L			01/18/23 09:16	1
Lead	ND	BU	1.0	0.12	ug/L			01/18/23 09:16	1
Selenium	ND	BU	2.0	0.52	ug/L			01/18/23 09:16	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

General Chemistry

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/09/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	200		3.3	2.8	mg/L			01/13/23 12:25	1

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/09/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	25		1.7	1.4	mg/L			01/13/23 12:25	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-296299/5
Matrix: Water
Analysis Batch: 296299

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			01/17/23 07:07	1

Lab Sample ID: LCS 570-296299/6
Matrix: Water
Analysis Batch: 296299

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	50.6		mg/L		101	90 - 110

Lab Sample ID: LCSD 570-296299/7
Matrix: Water
Analysis Batch: 296299

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	50.0	50.6		mg/L		101	90 - 110	0	15

Lab Sample ID: 570-123989-B-3 MS
Matrix: Water
Analysis Batch: 296299

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	0.80	J,DX	50.0	50.9		mg/L		100	80 - 120

Lab Sample ID: 570-123989-B-3 MSD
Matrix: Water
Analysis Batch: 296299

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	0.80	J,DX	50.0	50.8		mg/L		100	80 - 120	0	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-296322/1-A
Matrix: Water
Analysis Batch: 296650

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 296322

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		500	56	ug/L		01/17/23 07:18	01/17/23 23:10	1
Manganese	ND		50	1.3	ug/L		01/17/23 07:18	01/17/23 23:10	1
Zinc	ND		250	4.6	ug/L		01/17/23 07:18	01/17/23 23:10	1

Lab Sample ID: LCS 570-296322/2-A
Matrix: Water
Analysis Batch: 296650

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 296322

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	500	499	J,DX	ug/L		100	85 - 115
Manganese	500	502		ug/L		100	85 - 115
Zinc	500	502		ug/L		100	85 - 115

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 570-296322/3-A
Matrix: Water
Analysis Batch: 296650

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 296322

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron			500	511		ug/L		102	85 - 115	2	20
Manganese			500	504		ug/L		101	85 - 115	0	20
Zinc			500	504		ug/L		101	85 - 115	1	20

Lab Sample ID: 570-124038-A-3-B MS
Matrix: Water
Analysis Batch: 296650

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 296322

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Iron	1300		500	2560	LM	ug/L		252	80 - 120		
Manganese	55		500	570		ug/L		103	80 - 120		
Zinc	110	J,DX	500	571		ug/L		93	80 - 120		

Lab Sample ID: 570-124038-A-3-C MSD
Matrix: Water
Analysis Batch: 296650

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 296322

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	1300		500	2540	LM	ug/L		248	80 - 120	1	20
Manganese	55		500	582		ug/L		105	80 - 120	2	20
Zinc	110	J,DX	500	579		ug/L		94	80 - 120	1	20

Lab Sample ID: MB 570-295859/1-A
Matrix: Water
Analysis Batch: 297288

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		500	56	ug/L			01/19/23 23:10	1
Manganese	ND		50	1.3	ug/L			01/19/23 23:10	1
Zinc	ND		250	4.6	ug/L			01/19/23 23:10	1

Lab Sample ID: LCS 570-295859/2-A
Matrix: Water
Analysis Batch: 297288

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Iron			500	500		ug/L		100	85 - 115		
Manganese			500	494		ug/L		99	85 - 115		
Zinc			500	492		ug/L		98	85 - 115		

Lab Sample ID: LCSD 570-295859/3-A
Matrix: Water
Analysis Batch: 297288

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron			500	499	J,DX	ug/L		100	85 - 115	0	20
Manganese			500	504		ug/L		101	85 - 115	2	20
Zinc			500	501		ug/L		100	85 - 115	2	20

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 570-123822-B-1-B MS
Matrix: Water
Analysis Batch: 297288

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	ND		500	510		ug/L		102	80 - 120
Manganese	3.3	J,DX	500	506		ug/L		101	80 - 120
Zinc	150	J,DX	500	651		ug/L		100	80 - 120

Lab Sample ID: 570-123822-B-1-C MSD
Matrix: Water
Analysis Batch: 297288

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	ND		500	507		ug/L		101	80 - 120	1	20
Manganese	3.3	J,DX	500	509		ug/L		101	80 - 120	0	20
Zinc	150	J,DX	500	656		ug/L		101	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-296325/1-A
Matrix: Water
Analysis Batch: 296449

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 296325

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L		01/17/23 08:06	01/17/23 12:28	1
Cadmium	ND		1.0	0.13	ug/L		01/17/23 08:06	01/17/23 12:28	1
Copper	0.946	J,DX	2.0	0.32	ug/L		01/17/23 08:06	01/17/23 12:28	1
Lead	0.132	J,DX	1.0	0.12	ug/L		01/17/23 08:06	01/17/23 12:28	1
Selenium	ND		2.0	0.52	ug/L		01/17/23 08:06	01/17/23 12:28	1

Lab Sample ID: LCS 570-296325/2-A
Matrix: Water
Analysis Batch: 296449

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 296325

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	80.0		ug/L		100	85 - 115
Cadmium	80.0	81.7		ug/L		102	85 - 115
Copper	80.0	84.8		ug/L		106	85 - 115
Lead	80.0	82.5		ug/L		103	85 - 115
Selenium	80.0	79.6		ug/L		99	85 - 115

Lab Sample ID: LCSD 570-296325/3-A
Matrix: Water
Analysis Batch: 296449

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 296325

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	80.0	81.0		ug/L		101	85 - 115	1	20
Cadmium	80.0	82.8		ug/L		104	85 - 115	1	20
Copper	80.0	86.4		ug/L		108	85 - 115	2	20
Lead	80.0	83.3		ug/L		104	85 - 115	1	20
Selenium	80.0	80.2		ug/L		100	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-123812-A-1-B MS
Matrix: Water
Analysis Batch: 296466

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 296325

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.79	J,DX	100	100		ug/L		99	80 - 120
Cadmium	ND		100	101		ug/L		101	80 - 120
Copper	7.1	MB	100	108		ug/L		101	80 - 120
Lead	3.2	MB	100	105		ug/L		102	80 - 120
Selenium	ND		100	98.5		ug/L		98	80 - 120

Lab Sample ID: 570-123812-A-1-C MSD
Matrix: Water
Analysis Batch: 296466

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 296325

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.79	J,DX	100	100		ug/L		100	80 - 120	0	20
Cadmium	ND		100	102		ug/L		102	80 - 120	1	20
Copper	7.1	MB	100	110		ug/L		103	80 - 120	2	20
Lead	3.2	MB	100	105		ug/L		102	80 - 120	0	20
Selenium	ND		100	98.8		ug/L		99	80 - 120	0	20

Lab Sample ID: MB 570-295857/1-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L			01/18/23 10:32	1
Cadmium	ND		1.0	0.13	ug/L			01/18/23 10:32	1
Copper	ND		2.0	0.32	ug/L			01/18/23 10:32	1
Lead	ND		1.0	0.12	ug/L			01/18/23 10:32	1
Selenium	ND		2.0	0.52	ug/L			01/18/23 10:32	1

Lab Sample ID: LCS 570-295857/2-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	77.0		ug/L		96	85 - 115
Cadmium	80.0	78.1		ug/L		98	85 - 115
Copper	80.0	79.4		ug/L		99	85 - 115
Lead	80.0	79.5		ug/L		99	85 - 115
Selenium	80.0	78.2		ug/L		98	85 - 115

Lab Sample ID: LCSD 570-295857/3-A
Matrix: Water
Analysis Batch: 296754

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	80.0	75.2		ug/L		94	85 - 115	2	20
Cadmium	80.0	75.2		ug/L		94	85 - 115	4	20
Copper	80.0	78.4		ug/L		98	85 - 115	1	20
Lead	80.0	77.8		ug/L		97	85 - 115	2	20
Selenium	80.0	74.4		ug/L		93	85 - 115	5	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-295730/1
Matrix: Water
Analysis Batch: 295730

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/13/23 12:25	1

Lab Sample ID: LCS 570-295730/2
Matrix: Water
Analysis Batch: 295730

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	92.0		mg/L		92	77 - 116		

Lab Sample ID: LCSD 570-295730/3
Matrix: Water
Analysis Batch: 295730

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	90.0		mg/L		90	77 - 116	2	10

Lab Sample ID: 570-123457-C-1 DU
Matrix: Water
Analysis Batch: 295730

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	310			521		mg/L				51	10

Lab Sample ID: 570-123901-K-2 DU
Matrix: Water
Analysis Batch: 295730

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	21			19.5		mg/L				5	10

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-126802-1

HPLC/IC

Analysis Batch: 296299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-126802-1	4PSW001I401E20260110	_otal/3A	Water	600.0	
570-126802-2	A1BPSW0001E20260110	_otal/3A	Water	600.0	
MB 570-28T288/5	Method BlanN	_otal/3A	Water	600.0	
LCS 570-28T288/T	Lab Control Sa9 kle	_otal/3A	Water	600.0	
LCSD 570-28T288/7	Lab Control Sa9 kle Dmk	_otal/3A	Water	600.0	
570-1268p8-B-6 MS	Matriu SkiNe	_otal/3A	Water	600.0	
570-1268p8-B-6 MSD	Matriu SkiNe Dmklicate	_otal/3A	Water	600.0	

Metals

Filtration Batch: 295857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-126802-1	4PSW001I401E20260110	Dissolved	Water	Filtration	
570-126802-2	A1BPSW0001E20260110	Dissolved	Water	Filtration	
MB 570-285p57/1-A	Method BlanN	Dissolved	Water	Filtration	
LCS 570-285p57/2-A	Lab Control Sa9 kle	Dissolved	Water	Filtration	
LCSD 570-285p57/6-A	Lab Control Sa9 kle Dmk	Dissolved	Water	Filtration	

Filtration Batch: 295859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-126802-1	4PSW001I401E20260110	Dissolved	Water	Filtration	
570-126802-2	A1BPSW0001E20260110	Dissolved	Water	Filtration	
MB 570-285p58/1-A	Method BlanN	Dissolved	Water	Filtration	
LCS 570-285p58/2-A	Lab Control Sa9 kle	Dissolved	Water	Filtration	
LCSD 570-285p58/6-A	Lab Control Sa9 kle Dmk	Dissolved	Water	Filtration	
570-126p22-B-1-B MS	Matriu SkiNe	Dissolved	Water	Filtration	
570-126p22-B-1-C MSD	Matriu SkiNe Dmklicate	Dissolved	Water	Filtration	

Prep Batch: 296322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-126802-1	4PSW001I401E20260110	_otal Recoverable	Water	200.7	
570-126802-2	A1BPSW0001E20260110	_otal Recoverable	Water	200.7	
MB 570-28T622/1-A	Method BlanN	_otal Recoverable	Water	200.7	
LCS 570-28T622/2-A	Lab Control Sa9 kle	_otal Recoverable	Water	200.7	
LCSD 570-28T622/6-A	Lab Control Sa9 kle Dmk	_otal Recoverable	Water	200.7	
570-12f 06p-A-6-B MS	Matriu SkiNe	_otal Recoverable	Water	200.7	
570-12f 06p-A-6-C MSD	Matriu SkiNe Dmklicate	_otal Recoverable	Water	200.7	

Prep Batch: 296325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-126802-1	4PSW001I401E20260110	_otal Recoverable	Water	200.p	
570-126802-2	A1BPSW0001E20260110	_otal Recoverable	Water	200.p	
MB 570-28T625/1-A	Method BlanN	_otal Recoverable	Water	200.p	
LCS 570-28T625/2-A	Lab Control Sa9 kle	_otal Recoverable	Water	200.p	
LCSD 570-28T625/6-A	Lab Control Sa9 kle Dmk	_otal Recoverable	Water	200.p	
570-126p12-A-1-B MS	Matriu SkiNe	_otal Recoverable	Water	200.p	
570-126p12-A-1-C MSD	Matriu SkiNe Dmklicate	_otal Recoverable	Water	200.p	

Analysis Batch: 296449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-28T625/1-A	Method BlanN	_otal Recoverable	Water	200.p	28T625

Metals (Continued)

Analysis Batch: 296449 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-28T625/2-A	Lab Control Sa9 kle	_otal Recoverable	Water	200.p	28T625
LCSD 570-28T625/6-A	Lab Control Sa9 kle Dmk	_otal Recoverable	Water	200.p	28T625

Analysis Batch: 296466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-126802-1	4PSW001I401E20260110	_otal Recoverable	Water	200.p	28T625
570-126802-2	A1BPSW0001E20260110	_otal Recoverable	Water	200.p	28T625
570-126p12-A-1-B MS	Matriu SkiNe	_otal Recoverable	Water	200.p	28T625
570-126p12-A-1-C MSD	Matriu SkiNe Dmklicate	_otal Recoverable	Water	200.p	28T625

Analysis Batch: 296650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-126802-1	4PSW001I401E20260110	_otal Recoverable	Water	200.7 Rev f .f	28T622
570-126802-2	A1BPSW0001E20260110	_otal Recoverable	Water	200.7 Rev f .f	28T622
MB 570-28T622/1-A	Method BlanN	_otal Recoverable	Water	200.7 Rev f .f	28T622
LCS 570-28T622/2-A	Lab Control Sa9 kle	_otal Recoverable	Water	200.7 Rev f .f	28T622
LCSD 570-28T622/6-A	Lab Control Sa9 kle Dmk	_otal Recoverable	Water	200.7 Rev f .f	28T622
570-12f 06p-A-6-B MS	Matriu SkiNe	_otal Recoverable	Water	200.7 Rev f .f	28T622
570-12f 06p-A-6-C MSD	Matriu SkiNe Dmklicate	_otal Recoverable	Water	200.7 Rev f .f	28T622

Analysis Batch: 296754

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-285p57/1-A	Method BlanN	Dissolved	Water	200.p	285p57
LCS 570-285p57/2-A	Lab Control Sa9 kle	Dissolved	Water	200.p	285p57
LCSD 570-285p57/6-A	Lab Control Sa9 kle Dmk	Dissolved	Water	200.p	285p57

Analysis Batch: 296758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-126802-1	4PSW001I401E20260110	Dissolved	Water	200.p	285p57
570-126802-2	A1BPSW0001E20260110	Dissolved	Water	200.p	285p57

Analysis Batch: 297288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-126802-1	4PSW001I401E20260110	Dissolved	Water	200.7 Rev f .f	285p58
570-126802-2	A1BPSW0001E20260110	Dissolved	Water	200.7 Rev f .f	285p58
MB 570-285p58/1-A	Method BlanN	Dissolved	Water	200.7 Rev f .f	285p58
LCS 570-285p58/2-A	Lab Control Sa9 kle	Dissolved	Water	200.7 Rev f .f	285p58
LCSD 570-285p58/6-A	Lab Control Sa9 kle Dmk	Dissolved	Water	200.7 Rev f .f	285p58
570-126p22-B-1-B MS	Matriu SkiNe	Dissolved	Water	200.7 Rev f .f	285p58
570-126p22-B-1-C MSD	Matriu SkiNe Dmklicate	Dissolved	Water	200.7 Rev f .f	285p58

General Chemistry

Analysis Batch: 295730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-126802-1	4PSW001I401E20260110	_otal/3 A	Water	SM 25f 0D	
570-126802-2	A1BPSW0001E20260110	_otal/3 A	Water	SM 25f 0D	
MB 570-285760/1	Method BlanN	_otal/3 A	Water	SM 25f 0D	
LCS 570-285760/2	Lab Control Sa9 kle	_otal/3 A	Water	SM 25f 0D	
LCSD 570-285760/6	Lab Control Sa9 kle Dmk	_otal/3 A	Water	SM 25f 0D	
570-126f 57-C-1 DU	Dmklicate	_otal/3 A	Water	SM 25f 0D	

General Chemistry (Continued)

Analysis Batch: 295730 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-126801-K-2 DU	Dmklicate	_otal/3 A	Water	SM 25f 0D	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

Client Sample ID: EPSW001IE01_20230110

Date Collected: 01/09/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	296299	01/17/23 08:22	UIP1	EET CAL 4
	Instrument ID: IC9									
Dissolved	Filtration	Filtration			50 mL	50 mL	295859	01/17/23 07:36	ECX6	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			297288	01/19/23 23:34	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	296322	01/17/23 07:18	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			296650	01/18/23 00:06	VZ0K	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	295857	01/13/23 18:26	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			296758	01/18/23 09:14	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	296325	01/17/23 08:06	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296466	01/17/23 12:22	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	300 mL	1000 mL	295730	01/13/23 12:25	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: A1BPSW0001_20230110

Date Collected: 01/09/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	296299	01/17/23 08:39	UIP1	EET CAL 4
	Instrument ID: IC9									
Dissolved	Filtration	Filtration			50 mL	50 mL	295859	01/17/23 07:36	ECX6	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			297288	01/19/23 23:36	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	296322	01/17/23 07:18	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			296650	01/18/23 00:09	VZ0K	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	295857	01/13/23 18:26	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			296758	01/18/23 09:16	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	296325	01/17/23 08:06	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			296466	01/17/23 12:24	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	600 mL	1000 mL	295730	01/13/23 12:25	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123902-1	EPSW001IE01_20230110	Water	01/09/23 11:30	01/12/23 17:55
570-123902-2	A1BPSW0001_20230110	Water	01/09/23 12:00	01/12/23 17:55

123102

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)			Sample Specific Notes.
–	–	–	–	–	–			2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230110	01/09/23	1130	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			1
A1BPSW0001_20230110	01/09/23	1200	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			2
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1			

570-123902 Chain of Custody

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No	Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.____	
Relinquished by:	Company: SHA	Date/Time: [illegible]	Received by:	Date/Time: 1/10.23 0750
Relinquished by:	Company: EC 1/12/23/1755	Date/Time: 1-12-23/1650	Received by:	Date/Time: 1/12/23 7
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.8/1.8 2.1/2.1 1.9/1.9 ~~SC12~~ SC11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

1/23/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123902-1

Login Number: 123902
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123902-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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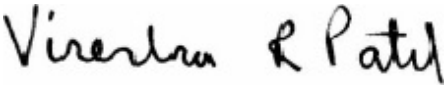
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-2

Qualifiers

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS)
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123902-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123902-2

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 1/24/2023. The report (revision 1) is being revised due to: The clients office requested the sample collection to be changed to 01/10/2023. Please see COC section of the report for revised COC page..

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

Metals
Method 1631E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following sample associated with analytical batch 580-416060 were outside control limits: (580-122334-A-10 MS) and (580-122334-A-10 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-2

Client Sample ID: EPSW001IE01_20230110 — Lab Sample ID: 570-123902-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.044	MB	0.0025	0.00040	ug/L	5		1631E	Total/NA
Mercury	0.0067	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: A1BPSW0001_20230110 — Lab Sample ID: 570-123902-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0066	MB	0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0036	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/10/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.044	MB	0.0025	0.00040	ug/L			01/20/23 14:30	5

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/10/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0066	MB	0.00050	0.000079	ug/L			01/20/23 16:22	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/10/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0067	MB	0.00050	0.000079	ug/L			01/20/23 16:26	1

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/10/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0036	MB	0.00050	0.000079	ug/L			01/20/23 16:30	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-416060/16
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000855	J,DX	0.00050	0.000079	ug/L			01/20/23 12:33	1

Lab Sample ID: MB 580-416060/17
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:38	1

Lab Sample ID: MB 580-416060/18
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:42	1

Lab Sample ID: LCS 580-416060/27
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00481		ug/L		96	77 - 123		

Lab Sample ID: LCSD 580-416060/28
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00466		ug/L		93	77 - 123	3	24

Lab Sample ID: 580-122334-A-10 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.030	MB	0.0500	0.0635	LN	ug/L		67	71 - 125		

Lab Sample ID: 580-122334-A-10 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.030	MB	0.0500	0.0604	LN	ug/L		61	71 - 125	5	24

Lab Sample ID: 580-122445-A-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.0024	MB	0.00500	0.00625		ug/L		76	71 - 125		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-2

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-122445-A-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0024	MB	0.00500	0.00650		ug/L		81	71 - 125	4	24

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-2

Metals

Filtration Batch: 415460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-1	EPSW001IE01_20230110	Dissolved	Water	Filtration	
570-123902-2	A1BPSW0001_20230110	Dissolved	Water	Filtration	

Analysis Batch: 416060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-1	EPSW001IE01_20230110	Dissolved	Water	1631E	415460
570-123902-1	EPSW001IE01_20230110	Total/NA	Water	1631E	
570-123902-2	A1BPSW0001_20230110	Dissolved	Water	1631E	415460
570-123902-2	A1BPSW0001_20230110	Total/NA	Water	1631E	
MB 580-416060/16	Method Blank	Total/NA	Water	1631E	
MB 580-416060/17	Method Blank	Total/NA	Water	1631E	
MB 580-416060/18	Method Blank	Total/NA	Water	1631E	
LCS 580-416060/27	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-416060/28	Lab Control Sample Dup	Total/NA	Water	1631E	
580-122334-A-10 MS	Matrix Spike	Total/NA	Water	1631E	
580-122334-A-10 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-122445-A-1 MS	Matrix Spike	Total/NA	Water	1631E	
580-122445-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-2

Client Sample ID: EPSW001IE01_20230110

Date Collected: 01/10/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415460	01/16/23 10:41	DRM	EET SEA
Dissolved	Analysis	1631E		1			416060	01/20/23 16:26	C8 O	EET SEA
	Instrument ID: 2600-4									
Total/u A	Analysis	1631E		5			416060	01/20/23 14:30	C8 O	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: A1BPSW0001_20230110

Date Collected: 01/10/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415460	01/16/23 10:41	DRM	EET SEA
Dissolved	Analysis	1631E		1			416060	01/20/23 16:30	C8 O	EET SEA
	Instrument ID: 2600-4									
Total/u A	Analysis	1631E		1			416060	01/20/23 16:22	C8 O	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA N EWoins Seattle, 5755 f th Street East, Tacoma, O A 9f 424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123902-2
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	01-24-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123902-1	EPSW001IE01_20230110	Water	01/10/23 11:30	01/12/23 17:55
570-123902-2	A1BPSW0001_20230110	Water	01/10/23 12:00	01/12/23 17:55

123102

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)	Sample Specific Notes.
–	–	–	–	–	–			2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber	Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230110	~~01/09/23~~	1130	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x	1/2
A1BPSW0001_20230110	~~01/09/23~~	1200	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1	

Sample dates corrected to 01/10/23 (MD 2/2/2023)

570-123902 Chain of Custody

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No. ____	
Relinquished by:	Company: SHA	Date/Time: ~~1/11/23~~	Received by:	Date/Time: 1/12/23 0750
Relinquished by:	Company: EC	Date/Time: 1/12/23/1755 1-12-23/05	Received by:	Date/Time: 1/12/23 7
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.8/1.8 2.1/2.1 1.9/1.9 ~~5C12~~ 1M 5C11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/3/2023 (Rev. 1)

123102

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)			Sample Specific Notes.
–	–	–	–	–	–			2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230110	01/09/23	1130	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			1
A1BPSW0001_20230110	01/09/23	1200	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			2
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1			

570-123902 Chain of Custody

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: SHA	Date/Time: [illegible]	Received by:	Date/Time: 1/10.23 0:50
Relinquished by:	Company: EC 1/12/23/1755	Date/Time: 1-12-23/05	Received by:	Date/Time: 1/12/23 7
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.8/1.8 2.1/2.1 1.9/1.9 ~~5C12~~ 1M
5C11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/3/2023 (Rev. 1)

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204079.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-123902-2
Address: 5755 8th Street East, ,	Due Date Requested: 1/30/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230110 (570-123902-1)	1/9/23	11:30 Pacific		Water			X	X	2	
A1BPSW0001_20230110 (570-123902-2)	1/9/23	12:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 01/13/23 1320	Company	Received by:	Date/Time: 1/14/23 925	Company EETN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123902-2

Login Number: 123902
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123902-2

Login Number: 123902
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/16/23 10:37 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/7/2023 10:08:17 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123902-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

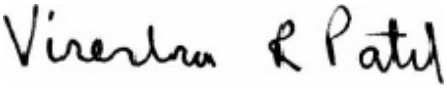
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-3

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123902-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123902-3

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

Dioxin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-3

Client Sample ID: EPSW001IE01_20230110 — Lab Sample ID: 570-123902-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000042	J,DX MB	0.000051	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000049	J,DX MB	0.000051	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000035	J,DX MB q	0.000051	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000046	J,DX MB	0.000051	0.00000030	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000053	J,DX MB	0.000051	0.00000030	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000044	J,DX MB q	0.000051	0.00000027	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000081	MB	0.000051	0.00000046	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000091	MB	0.000051	0.00000059	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000034	J,DX MB q	0.000051	0.00000058	ug/L	1		1613B	Total/NA
OCDD	0.00058	MB	0.00010	0.00000080	ug/L	1		1613B	Total/NA
OCDF	0.000079	J,DX MB	0.00010	0.00000039	ug/L	1		1613B	Total/NA
Total HxCDD	0.000042	J,DX MB q	0.000051	0.00000021	ug/L	1		1613B	Total/NA
Total HxCDF	0.000060	J,DX MB q	0.000051	0.00000029	ug/L	1		1613B	Total/NA
Total HpCDD	0.00017	MB	0.000051	0.00000046	ug/L	1		1613B	Total/NA
Total HpCDF	0.00013	J,DX MB q	0.000051	0.00000058	ug/L	1		1613B	Total/NA

Client Sample ID: A1BPSW0001_20230110 — Lab Sample ID: 570-123902-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000024	J,DX MB	0.000051	0.00000057	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000099	J,DX MB	0.000051	0.00000011	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000020	J,DX MB	0.000051	0.00000057	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000065	J,DX MB	0.000051	0.00000062	ug/L	1		1613B	Total/NA
OCDD	0.00010	J,DX MB	0.00010	0.00000018	ug/L	1		1613B	Total/NA
OCDF	0.0000046	J,DX MB	0.00010	0.00000016	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000024	J,DX MB	0.000051	0.00000055	ug/L	1		1613B	Total/NA
Total HpCDD	0.000020	J,DX MB	0.000051	0.00000011	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000048	J,DX MB	0.000051	0.00000060	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/10/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000036	ug/L		01/26/23 04:55	02/04/23 21:31	1
2,3,7,8-TCDF	ND		0.000010	0.00000071	ug/L		01/26/23 04:55	02/04/23 21:31	1
1,2,3,7,8-PeCDD	ND		0.000051	0.00000018	ug/L		01/26/23 04:55	02/04/23 21:31	1
1,2,3,7,8-PeCDF	ND		0.000051	0.00000014	ug/L		01/26/23 04:55	02/04/23 21:31	1
2,3,4,7,8-PeCDF	ND		0.000051	0.00000015	ug/L		01/26/23 04:55	02/04/23 21:31	1
1,2,3,4,7,8-HxCDD	**0.0000042**	**J,DX MB**	0.000051	0.00000021	ug/L		01/26/23 04:55	02/04/23 21:31	1
1,2,3,6,7,8-HxCDD	**0.0000049**	**J,DX MB**	0.000051	0.00000022	ug/L		01/26/23 04:55	02/04/23 21:31	1
1,2,3,7,8,9-HxCDD	**0.0000035**	**J,DX MB q**	0.000051	0.00000019	ug/L		01/26/23 04:55	02/04/23 21:31	1
1,2,3,4,7,8-HxCDF	**0.0000046**	**J,DX MB**	0.000051	0.00000030	ug/L		01/26/23 04:55	02/04/23 21:31	1
1,2,3,6,7,8-HxCDF	**0.0000053**	**J,DX MB**	0.000051	0.00000030	ug/L		01/26/23 04:55	02/04/23 21:31	1
1,2,3,7,8,9-HxCDF	ND		0.000051	0.00000030	ug/L		01/26/23 04:55	02/04/23 21:31	1
2,3,4,6,7,8-HxCDF	**0.0000044**	**J,DX MB q**	0.000051	0.00000027	ug/L		01/26/23 04:55	02/04/23 21:31	1
1,2,3,4,6,7,8-HpCDD	**0.000081**	**MB**	0.000051	0.00000046	ug/L		01/26/23 04:55	02/04/23 21:31	1
1,2,3,4,6,7,8-HpCDF	**0.000091**	**MB**	0.000051	0.00000059	ug/L		01/26/23 04:55	02/04/23 21:31	1
1,2,3,4,7,8,9-HpCDF	**0.0000034**	**J,DX MB q**	0.000051	0.00000058	ug/L		01/26/23 04:55	02/04/23 21:31	1
OCDD	**0.00058**	**MB**	0.00010	0.00000080	ug/L		01/26/23 04:55	02/04/23 21:31	1
OCDF	**0.000079**	**J,DX MB**	0.00010	0.00000039	ug/L		01/26/23 04:55	02/04/23 21:31	1
Total TCDD	ND		0.000010	0.00000045	ug/L		01/26/23 04:55	02/04/23 21:31	1
Total TCDF	ND		0.000010	0.00000055	ug/L		01/26/23 04:55	02/04/23 21:31	1
Total PeCDD	ND		0.000051	0.00000051	ug/L		01/26/23 04:55	02/04/23 21:31	1
Total PeCDF	ND		0.000051	0.0000022	ug/L		01/26/23 04:55	02/04/23 21:31	1
Total HxCDD	**0.000042**	**J,DX MB q**	0.000051	0.00000021	ug/L		01/26/23 04:55	02/04/23 21:31	1
Total HxCDF	**0.000060**	**J,DX MB q**	0.000051	0.00000029	ug/L		01/26/23 04:55	02/04/23 21:31	1
Total HpCDD	**0.00017**	**MB**	0.000051	0.00000046	ug/L		01/26/23 04:55	02/04/23 21:31	1
Total HpCDF	**0.00013**	**J,DX MB q**	0.000051	0.00000058	ug/L		01/26/23 04:55	02/04/23 21:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 164*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-2,3,7,8-TCDF	*71*		*24 - 169*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-1,2,3,7,8-PeCDD	*71*		*25 - 181*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-1,2,3,7,8-PeCDF	*62*		*24 - 185*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-2,3,4,7,8-PeCDF	*62*		*21 - 178*	*01/26/23 04:55*	*02/04/23 21:31*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/10/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,7,8-HxCDD	*59*		*32 - 141*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-1,2,3,6,7,8-HxCDD	*59*		*28 - 130*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-1,2,3,4,7,8-HxCDF	*67*		*26 - 152*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-1,2,3,6,7,8-HxCDF	*65*		*26 - 123*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-1,2,3,7,8,9-HxCDF	*67*		*29 - 147*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-2,3,4,6,7,8-HxCDF	*70*		*28 - 136*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*70*		*23 - 140*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*64*		*28 - 143*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*74*		*26 - 138*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-OCDD	*70*		*17 - 157*	*01/26/23 04:55*	*02/04/23 21:31*	*1*
13C-OCDF	*70*		*17 - 157*	*01/26/23 04:55*	*02/04/23 21:31*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*90*		*35 - 197*	*01/26/23 04:55*	*02/04/23 21:31*	*1*

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/10/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000035	ug/L		01/26/23 04:55	02/04/23 22:19	1
2,3,7,8-TCDF	ND		0.000010	0.00000040	ug/L		01/26/23 04:55	02/04/23 22:19	1
1,2,3,7,8-PeCDD	ND		0.000051	0.00000065	ug/L		01/26/23 04:55	02/04/23 22:19	1
1,2,3,7,8-PeCDF	ND		0.000051	0.00000055	ug/L		01/26/23 04:55	02/04/23 22:19	1
2,3,4,7,8-PeCDF	ND		0.000051	0.00000062	ug/L		01/26/23 04:55	02/04/23 22:19	1
1,2,3,4,7,8-HxCDD	**0.0000024**	**J,DX MB**	0.000051	0.00000057	ug/L		01/26/23 04:55	02/04/23 22:19	1
1,2,3,6,7,8-HxCDD	ND		0.000051	0.00000056	ug/L		01/26/23 04:55	02/04/23 22:19	1
1,2,3,7,8,9-HxCDD	ND		0.000051	0.00000052	ug/L		01/26/23 04:55	02/04/23 22:19	1
1,2,3,4,7,8-HxCDF	ND		0.000051	0.00000037	ug/L		01/26/23 04:55	02/04/23 22:19	1
1,2,3,6,7,8-HxCDF	ND		0.000051	0.00000037	ug/L		01/26/23 04:55	02/04/23 22:19	1
1,2,3,7,8,9-HxCDF	ND		0.000051	0.00000037	ug/L		01/26/23 04:55	02/04/23 22:19	1
2,3,4,6,7,8-HxCDF	ND		0.000051	0.00000034	ug/L		01/26/23 04:55	02/04/23 22:19	1
1,2,3,4,6,7,8-HpCDD	**0.0000099**	**J,DX MB**	0.000051	0.00000011	ug/L		01/26/23 04:55	02/04/23 22:19	1
1,2,3,4,6,7,8-HpCDF	**0.0000020**	**J,DX MB**	0.000051	0.00000057	ug/L		01/26/23 04:55	02/04/23 22:19	1
1,2,3,4,7,8,9-HpCDF	**0.00000065**	**J,DX MB**	0.000051	0.00000062	ug/L		01/26/23 04:55	02/04/23 22:19	1
OCDD	**0.00010**	**J,DX MB**	0.00010	0.00000018	ug/L		01/26/23 04:55	02/04/23 22:19	1
OCDF	**0.0000046**	**J,DX MB**	0.00010	0.00000016	ug/L		01/26/23 04:55	02/04/23 22:19	1
Total TCDD	ND		0.000010	0.00000082	ug/L		01/26/23 04:55	02/04/23 22:19	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/10/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total TCDF	ND		0.000010	0.00000040	ug/L		01/26/23 04:55	02/04/23 22:19	1
Total PeCDD	ND		0.000051	0.00000065	ug/L		01/26/23 04:55	02/04/23 22:19	1
Total PeCDF	ND		0.000051	0.00000062	ug/L		01/26/23 04:55	02/04/23 22:19	1
Total HxCDD	**0.0000024**	**J,DX MB**	0.000051	0.00000055	ug/L		01/26/23 04:55	02/04/23 22:19	1
Total HxCDF	ND		0.000051	0.0000043	ug/L		01/26/23 04:55	02/04/23 22:19	1
Total HpCDD	**0.000020**	**J,DX MB**	0.000051	0.00000011	ug/L		01/26/23 04:55	02/04/23 22:19	1
Total HpCDF	**0.0000048**	**J,DX MB**	0.000051	0.00000060	ug/L		01/26/23 04:55	02/04/23 22:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*80*		*25 - 164*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-2,3,7,8-TCDF	*87*		*24 - 169*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-1,2,3,7,8-PeCDD	*84*		*25 - 181*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-1,2,3,7,8-PeCDF	*83*		*24 - 185*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-2,3,4,7,8-PeCDF	*81*		*21 - 178*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-1,2,3,4,7,8-HxCDD	*79*		*32 - 141*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-1,2,3,6,7,8-HxCDD	*79*		*28 - 130*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-1,2,3,4,7,8-HxCDF	*87*		*26 - 152*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-1,2,3,6,7,8-HxCDF	*84*		*26 - 123*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-1,2,3,7,8,9-HxCDF	*83*		*29 - 147*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-2,3,4,6,7,8-HxCDF	*87*		*28 - 136*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*86*		*23 - 140*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*84*		*28 - 143*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*89*		*26 - 138*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-OCDD	*95*		*17 - 157*	*01/26/23 04:55*	*02/04/23 22:19*	*1*
13C-OCDF	*94*		*17 - 157*	*01/26/23 04:55*	*02/04/23 22:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*88*		*35 - 197*	*01/26/23 04:55*	*02/04/23 22:19*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-123902-1	EPSW001IE01_20230110	90
570-123902-2	A1BPSW0001_20230110	88
MB 320-649391/1-A	Method Blank	88

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-649391/2-A	Lab Control Sample	92
LCSD 320-649391/3-A	Lab Control Sample Dup	90

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-123902-1	EPSW001IE01_20230110	70	71	71	62	62	59	59	67
570-123902-2	A1BPSW0001_20230110	80	87	84	83	81	79	79	87
MB 320-649391/1-A	Method Blank	66	73	67	70	65	67	67	72

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-123902-1	EPSW001IE01_20230110	65	67	70	70	64	74	70	70
570-123902-2	A1BPSW0001_20230110	84	83	87	86	84	89	95	94
MB 320-649391/1-A	Method Blank	70	72	73	72	72	81	79	78

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-649391/2-A	Lab Control Sample	77	77	79	75	73	73	73	77
LCSD 320-649391/3-A	Lab Control Sample Dup	77	78	77	75	72	73	73	78

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-649391/2-A	Lab Control Sample	78	79	83	81	79	82	84	84
LCSD 320-649391/3-A	Lab Control Sample Dup	78	78	78	80	78	85	85	84

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123902-3
Project/Site: Boeing SSFL ISRA and BMP

HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-649391/1-A
Matrix: Water
Analysis Batch: 651871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649391

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000004	ug/L		01/26/23 04:55	02/04/23 19:06	1
2,3,7,8-TCDF	ND		0.000010	0.00000043	ug/L		01/26/23 04:55	02/04/23 19:06	1
1,2,3,7,8-PeCDD	ND		0.000050	0.0000001 3	ug/L		01/26/23 04:55	02/04/23 19:06	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000073	ug/L		01/26/23 04:55	02/04/23 19:06	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000083	ug/L		01/26/23 04:55	02/04/23 19:06	1
1,2,3,4,7,8-HxCDD	0.00000257	J,DX	0.000050	0.00000054	ug/L		01/26/23 04:55	02/04/23 19:06	1
1,2,3,6,7,8-HxCDD	0.00000162	J,DX q	0.000050	0.00000055	ug/L		01/26/23 04:55	02/04/23 19:06	1
1,2,3,7,8,9-HxCDD	0.00000155	J,DX q	0.000050	0.00000050	ug/L		01/26/23 04:55	02/04/23 19:06	1
1,2,3,4,7,8-HxCDF	0.000000553	J,DX q	0.000050	0.00000067	ug/L		01/26/23 04:55	02/04/23 19:06	1
1,2,3,6,7,8-HxCDF	0.000000961	J,DX q	0.000050	0.00000066	ug/L		01/26/23 04:55	02/04/23 19:06	1
1,2,3,7,8,9-HxCDF	0.00000197	J,DX	0.000050	0.00000065	ug/L		01/26/23 04:55	02/04/23 19:06	1
2,3,4,6,7,8-HxCDF	0.00000140	J,DX q	0.000050	0.00000060	ug/L		01/26/23 04:55	02/04/23 19:06	1
1,2,3,4,6,7,8-HpCDD	0.00000350	J,DX q	0.000050	0.00000073	ug/L		01/26/23 04:55	02/04/23 19:06	1
1,2,3,4,6,7,8-HpCDF	0.00000182	J,DX q	0.000050	0.00000053	ug/L		01/26/23 04:55	02/04/23 19:06	1
1,2,3,4,7,8,9-HpCDF	0.00000211	J,DX	0.000050	0.00000054	ug/L		01/26/23 04:55	02/04/23 19:06	1
OCDD	0.0000146	J,DX q	0.00010	0.00000031	ug/L		01/26/23 04:55	02/04/23 19:06	1
OCDF	0.00000554	J,DX	0.00010	0.0000002 6	ug/L		01/26/23 04:55	02/04/23 19:06	1
Total TCDD	ND		0.000010	0.0000008 4	ug/L		01/26/23 04:55	02/04/23 19:06	1
Total TCDF	ND		0.000010	0.00000043	ug/L		01/26/23 04:55	02/04/23 19:06	1
Total PeCDD	ND		0.000050	0.0000001 3	ug/L		01/26/23 04:55	02/04/23 19:06	1
Total PeCDF	ND		0.000050	0.00000083	ug/L		01/26/23 04:55	02/04/23 19:06	1
Total HxCDD	0.00000575	J,DX q	0.000050	0.00000053	ug/L		01/26/23 04:55	02/04/23 19:06	1
Total HxCDF	0.00000488	J,DX q	0.000050	0.00000065	ug/L		01/26/23 04:55	02/04/23 19:06	1
Total HpCDD	0.00000453	J,DX q	0.000050	0.00000073	ug/L		01/26/23 04:55	02/04/23 19:06	1
Total HpCDF	0.00000393	J,DX q	0.000050	0.00000054	ug/L		01/26/23 04:55	02/04/23 19:06	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*55*		*26 - 154*	*01/26/23 04:55*	*02/04/23 19:06*	*1*
13C-2,3,7,8-TCD9	*73*		*24 - 15:*	*01/26/23 04:55*	*02/04/23 19:06*	*1*
13C-1,2,3,7,8-PeCDD	*57*		*26 - 181*	*01/26/23 04:55*	*02/04/23 19:06*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-649391/1-A
Matrix: Water
Analysis Batch: 651871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649391

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCD9	7/		24 - 186	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-2,3,4,7,8-PeCD9	56		21 - 178	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-1,2,3,4,7,8-HxCDD	57		32 - 141	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-1,2,3,5,7,8-HxCDD	57		28 - 13/	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-1,2,3,4,7,8-HxCD9	72		25 - 162	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-1,2,3,5,7,8-HxCD9	7/		25 - 123	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-1,2,3,7,8,: -HxCD9	72		2: - 147	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-2,3,4,5,7,8-HxCD9	73		28 - 135	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-1,2,3,4,5,7,8-HpCDD	72		23 - 14/	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-1,2,3,4,5,7,8-HpCD9	72		28 - 143	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-1,2,3,4,7,8,: -HpCD9	81		25 - 138	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-OCDD	7:		17 - 167	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1
13C-OCD9	78		17 - 167	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	88		36 - 1: 7	/ 10 25 0 23 / 4 F 66	/ 20 4 0 23 1: F 5	1

Lab Sample ID: LCS 320-649391/2-A
Matrix: Water
Analysis Batch: 651871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649391

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000195		ug/L		98	67 - 158		
2,3,7,8-TCDF			0.000200	0.000210		ug/L		105	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000947		ug/L		95	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000985		ug/L		98	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000981		ug/L		98	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000951	MB	ug/L		95	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.000987	MB	ug/L		99	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.00100	MB	ug/L		100	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000978	MB	ug/L		98	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000981	MB	ug/L		98	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000976		ug/L		98	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000962	MB	ug/L		96	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000935	MB	ug/L		93	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000972	MB	ug/L		97	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000974	MB	ug/L		97	78 - 138		
OCDD			0.00200	0.00188	MB	ug/L		94	78 - 144		
OCDF			0.00200	0.00197	MB	ug/L		98	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	77		2/ - 176
13C-2,3,7,8-TCD9	77		22 - 162
13C-1,2,3,7,8-PeCDD	7:		21 - 227
13C-1,2,3,7,8-PeCD9	76		21 - 1: 2
13C-2,3,4,7,8-PeCD9	73		13 - 328
13C-1,2,3,4,7,8-HxCDD	73		21 - 1: 3
13C-1,2,3,5,7,8-HxCDD	73		26 - 153

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-649391/2-A
Matrix: Water
Analysis Batch: 651871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649391

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCD9	77		1: - 2/ 2
13C-1,2,3,5,7,8-HxCD9	78		21 - 16:
13C-1,2,3,7,8,: -HxCD9	7:		17 - 2/ 6
13C-2,3,4,5,7,8-HxCD9	83		22 - 175
13C-1,2,3,4,5,7,8-HpCDD	81		25 - 155
13C-1,2,3,4,5,7,8-HpCD9	7:		21 - 168
13C-1,2,3,4,7,8,: -HpCD9	82		2/ - 185
13C-OCDD	84		13 - 1: :
13C-OCD9	84		13 - 1: :

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	: 2		31 - 1: 1

Lab Sample ID: LCSD 320-649391/3-A
Matrix: Water
Analysis Batch: 651871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649391

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000198		ug/L		99	67 - 158	1	50
2,3,7,8-TCDF			0.000200	0.000210		ug/L		105	75 - 158	0	50
1,2,3,7,8-PeCDD			0.00100	0.000947		ug/L		95	70 - 142	0	50
1,2,3,7,8-PeCDF			0.00100	0.000964		ug/L		96	80 - 134	2	50
2,3,4,7,8-PeCDF			0.00100	0.000988		ug/L		99	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000933	MB	ug/L		93	70 - 164	2	50
1,2,3,6,7,8-HxCDD			0.00100	0.000969	MB	ug/L		97	76 - 134	2	50
1,2,3,7,8,9-HxCDD			0.00100	0.000974	MB	ug/L		97	64 - 162	3	50
1,2,3,4,7,8-HxCDF			0.00100	0.000964	MB	ug/L		96	72 - 134	2	50
1,2,3,6,7,8-HxCDF			0.00100	0.000943	MB	ug/L		94	84 - 130	4	50
1,2,3,7,8,9-HxCDF			0.00100	0.000957		ug/L		96	78 - 130	2	50
2,3,4,6,7,8-HxCDF			0.00100	0.000983	MB	ug/L		98	70 - 156	2	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000927	MB	ug/L		93	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000948	MB	ug/L		95	82 - 122	2	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000937	MB	ug/L		94	78 - 138	4	50
OCDD			0.00200	0.00188	MB	ug/L		94	78 - 144	0	50
OCDF			0.00200	0.00193	MB	ug/L		96	63 - 170	2	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		2/ - 176
13C-2,3,7,8-TCD9	78		22 - 162
13C-1,2,3,7,8-PeCDD	77		21 - 227
13C-1,2,3,7,8-PeCD9	76		21 - 1: 2
13C-2,3,4,7,8-PeCD9	72		13 - 328
13C-1,2,3,4,7,8-HxCDD	73		21 - 1: 3
13C-1,2,3,5,7,8-HxCDD	73		26 - 153
13C-1,2,3,4,7,8-HxCD9	78		1: - 2/ 2
13C-1,2,3,5,7,8-HxCD9	78		21 - 16:
13C-1,2,3,7,8,: -HxCD9	78		17 - 2/ 6
13C-2,3,4,5,7,8-HxCD9	78		22 - 175

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-649391/3-A
Matrix: Water
Analysis Batch: 651871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649391

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,5,7,8-HpCDD	8/		25 - 155
13C-1,2,3,4,5,7,8-HpCD9	78		21 - 168
13C-1,2,3,4,7,8,: -HpCD9	86		2/ - 185
13C-OCDD	86		13 - 1: :
13C-OCD9	84		13 - 1: :

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	: /		31 - 1: 1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-3

Specialty Organics

Prep Batch: 649391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-1	EPSW001IE01_20230110	Total/NA	Water	1613B	
570-123902-2	A1BPSW0001_20230110	Total/NA	Water	1613B	
MB 320-649391/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-649391/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-649391/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 651871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-1	EPSW001IE01_20230110	Total/NA	Water	1613B	649391
570-123902-2	A1BPSW0001_20230110	Total/NA	Water	1613B	649391
MB 320-649391/1-A	Method Blank	Total/NA	Water	1613B	649391
LCS 320-649391/2-A	Lab Control Sample	Total/NA	Water	1613B	649391
LCSD 320-649391/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	649391

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123902-3
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: EPSW001IE01_20230110
Lab Sample ID: 570-123902-1
Date Collected: 01/10/23 11:30
Matrix: Water
Date Received: 01/12/23 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			973.7 mL	20.0 uL	649391	01/26/23 04:55	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	651871	02/04/23 21:31	GRB	EET SAC
	Instrument ID: DFS 1									

Client Sample ID: A1BPSW0001_20230110
Lab Sample ID: 570-123902-2
Date Collected: 01/10/23 12:00
Matrix: Water
Date Received: 01/12/23 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			981.8 mL	20.0 uL	649391	01/26/23 04:55	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	651871	02/04/23 22:19	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123902-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-3

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123902-1	EPSW001IE01_20230110	Water	01/10/23 11:30	01/12/23 17:55
570-123902-2	A1BPSW0001_20230110	Water	01/10/23 12:00	01/12/23 17:55

123102

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	_____ of _____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8, As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Dissolved)	Method 200.8, As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)			Sample Specific Notes.
–	–	–	–	–	–			2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230110	~~01/09/23~~	1130	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			1/2
A1BPSW0001_20230110	~~01/09/23~~	1200	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____								1	1	1	1	1	1	4	2	1	1			

Sample dates corrected to 01/10/23 (MD 2/2/2023)

570-123902 Chain of Custody

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No	Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No. _____	
Relinquished by:	Company: SHA	Date/Time: ~~1/11/23~~	Received by:	Date/Time: 1/12/23 0750
Relinquished by:	Company: EC	Date/Time: 1/12/23/1755 1-12-23/1650	Received by:	Date/Time: 1/12/23 7
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.8/1.8 2.1/2.1 1.9/1.9 ~~5C12~~ 1M 5C11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

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2/7/2023

123102

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)			Sample Specific Notes.
–	–	–	–	–	–			2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230110	01/09/23	1130	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			1
A1BPSW0001_20230110	01/09/23	1200	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			2
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1			

570-123902 Chain of Custody

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No	Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.____	
Relinquished by:	Company: SHA	Date/Time: [illegible]	Received by:	Date/Time: 1/10.23 0750
Relinquished by:	Company: EC 1/12/23/1755	Date/Time: 1-12-23/1650	Received by:	Date/Time: 1/12/23 7
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.8/1.8 2.1/2.1 1.9/1.9 ~~SC12~~ SC11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/7/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204093.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-123902-3
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/6/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230110 (570-123902-1)	1/9/23	11:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
A1BPSW0001_20230110 (570-123902-2)	1/9/23	12:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 01/13/23 1420	Company: EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

0 1/2 out OC Temp.

2/7/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123902-3

Login Number: 123902
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123902-3

Login Number: 123902
List Number: 3
Creator: Fisher, Jamyiah L

List Source: Eurofins Sacramento
List Creation: 01/16/23 11:40 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	
Cooler Temperature is recorded.	True	6.9
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-123902-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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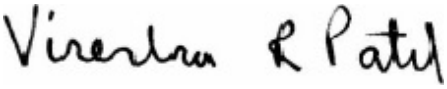
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-4

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123902-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123902-4

Comments
No additional comments.

Receipt
The samples were received on 1/12/2023 5:55 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

Job #: 570-124247 R-1
Job #: 570-124230 R-1,
Job #: 570-124243 AP-1 and AR-1
Job #: 570-124233 K-1
Job #: 570-124239 J-1
Job #: 570-123901 T-1, T-2, U-1, U-2
Job #: 570-123902 J-1, J-2, K-1, K-2

Melted ice, Fed Ex delay Sample 1 of 2 was out of temp A1BPSW0001_20230110 (570-123902-2)

RAD
Method 900.0: Gross Alpha Beta prep batch 160-598084:

The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass: EPSW001IE01_20230110 (570-123902-1). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha Beta prep batch 160-598084:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPSW001IE01_20230110 (570-123902-1), A1BPSW0001_20230110 (570-123902-2), (LCS 160-598084/2-A), (LCSB 160-598084/3-A), (MB 160-598084/1-A), (570-123902-K-2-H DU), (570-123902-K-2-F MS) and (570-123902-K-2-G MSBT)

Method 901.1: Gamma Prep Batch 160-597762
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228

Job ID: 570-123902-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPSW001IE01_20230110 (570-123902-1), (LCS 160-597762/2-A), (MB 160-597762/1-A), (570-123009-U-1-K) and (570-123009-U-1-L DU)

Method 901.1: Gamma Prep Batch 160-597608
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_20230110 (570-123902-1), A1BPSW0001_20230110 (570-123902-2), (570-123901-U-1-E) and (570-123901-U-1-F DU)

Method 901.1: Gamma Prep Batch 160-597949
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234

Job ID: 570-123902-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

A1BPSW0001_20230110 (570-123902-2), (570-123901-U-2-E) and (570-123901-U-2-F DU)

Method 906.0: Tritium 598269
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPSW001IE01_20230110 (570-123902-1), A1BPSW0001_20230110 (570-123902-2), (LCS 160-598269/2-A), (MB 160-598269/1-A), (160-48571-B-3-A), (160-48571-B-3-B DU), (160-48571-B-5-A) and (160-48571-B-5-B MS)

Method A-01-R: Isotopic Uranium batch 598867
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20230110 (570-123902-1), A1BPSW0001_20230110 (570-123902-2), (LCS 160-597806/2-A), (MB 160-597806/1-A) and (570-123902-K-2-C DU)

Method ExtChrom: Uranium Prep Batch 160-597806:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPSW001IE01_20230110 (570-123902-1).

Method LSC_Dist_Susp:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method Filtration: Filtration Prep Batch 160-597489:

Samples were mistakenly preserved upon receipt.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-4

Client Sample ID: EPSW001IE01_20230110 — Lab Sample ID: 570-123902-1

No Detections.

Client Sample ID: A1BPSW0001_20230110 — Lab Sample ID: 570-123902-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPSW001IE01_20230110
Lab Sample ID: 570-123902-1
Date Collected: 01/10/23 11:30
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	67.1	G	15.3	17.2	3.00	12.9	pCi/L	01/24/23 13:26	02/03/23 19:04	1
Gross Beta	56.4	G	6.85	8.87	4.00	5.47	pCi/L	01/24/23 13:26	02/03/23 19:04	1

Client Sample ID: A1BPSW0001_20230110
Lab Sample ID: 570-123902-2
Date Collected: 01/10/23 12:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	5.37		1.78	1.88	3.00	1.95	pCi/L	01/24/23 13:26	02/03/23 19:05	1
Gross Beta	4.46		0.912	1.02	4.00	0.969	pCi/L	01/24/23 13:26	02/03/23 19:05	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPSW001IE01_20230110
Lab Sample ID: 570-123902-1
Date Collected: 01/10/23 11:30
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**5.06**		1.39	1.50	3.00	1.22	pCi/L	01/24/23 13:26	02/03/23 19:05	1
Gross Beta	**5.63**		0.970	1.12	4.00	0.964	pCi/L	01/24/23 13:26	02/03/23 19:05	1

Client Sample ID: A1BPSW0001_20230110
Lab Sample ID: 570-123902-2
Date Collected: 01/10/23 12:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.346	U	0.635	0.636	3.00	1.11	pCi/L	01/24/23 13:26	02/03/23 19:05	1
Gross Beta	**1.02**		0.612	0.620	4.00	0.922	pCi/L	01/24/23 13:26	02/03/23 19:05	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/10/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.70	U	6.04	6.05	20.0	7.48	pCi/L	01/20/23 10:57	02/08/23 21:17	1
Potassium-40	-39.3	U	97.2	97.3		124	pCi/L	01/20/23 10:57	02/08/23 21:17	1

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/10/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-3.49	U	8.89	8.89	20.0	10.7	pCi/L	01/20/23 10:57	02/09/23 05:47	1
Potassium-40	-24.6	U	117	117		140	pCi/L	01/20/23 10:57	02/09/23 05:47	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/10/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.45	U	8.53	8.53	20.0	9.96	pCi/L	01/23/23 09:10	02/03/23 22:10	1
Potassium-40	**132**		85.3	86.7		80.4	pCi/L	01/23/23 09:10	02/03/23 22:10	1

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/10/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-6.75	U	13.9	13.9	20.0	16.6	pCi/L	01/23/23 15:17	02/08/23 03:48	1
Potassium-40	44.2	U	79.3	79.5		91.6	pCi/L	01/23/23 15:17	02/08/23 03:48	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-4

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/10/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	271		171	173	500	256	pCi/L	01/26/23 08:47	02/01/23 12:42	1

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/10/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	325		182	185	500	267	pCi/L	01/26/23 08:47	02/01/23 13:05	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPSW001IE01_20230110
Date Collected: 01/10/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	**1.93**		0.942	0.949	1.00	0.574	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Client Sample ID: A1BPSW0001_20230110
Date Collected: 01/10/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.178	U	0.271	0.271	1.00	0.408	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPSW001IE01_20230110
Lab Sample ID: 570-123902-1
Date Collected: 01/10/23 11:30
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	4.45		0.872	0.900	1.00	0.278	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Client Sample ID: A1BPSW0001_20230110
Lab Sample ID: 570-123902-2
Date Collected: 01/10/23 12:00
Matrix: Water
Date Received: 01/12/23 17:55

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.356		0.226	0.227	1.00	0.206	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-4

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	U-232 (30-110)							
LCS 160-597806/2-A	Lab Control Sample	84.6							
MB 160-597806/1-A	Method Blank	88.9							

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	U-232 (30-110)							
570-123902-2 DU	A1BPSW0001_20230110	85.8							

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-598084/1-A
Matrix: Water
Analysis Batch: 599319

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598084

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.8575	U	0.757	0.763	3.00	1.18	pCi/L	01/24/23 13:25	02/03/23 18:50	1
Gross Beta	0.05759	U	0.427	0.427	4.00	0.742	pCi/L	01/24/23 13:25	02/03/23 18:50	1

Lab Sample ID: LCS 160-598084/2-A
Matrix: Water
Analysis Batch: 599319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598084

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	56.66		7.91	3.00	1.84	pCi/L	112	75 - 125

Lab Sample ID: LCSB 160-598084/3-A
Matrix: Water
Analysis Batch: 599319

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598084

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	65.34		7.07	4.00	1.00	pCi/L	89	75 - 125

Lab Sample ID: 570-123902-2 MS
Matrix: Water
Analysis Batch: 599293

Client Sample ID: A1BPSW0001_20230110
Prep Type: Dissolved
Prep Batch: 598084

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	0.346	U	50.5	38.32		5.25	3.00	0.860	pCi/L	75	60 - 140

Lab Sample ID: 570-123902-2 MSBT
Matrix: Water
Analysis Batch: 599293

Client Sample ID: A1BPSW0001_20230110
Prep Type: Dissolved
Prep Batch: 598084

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	1.02		73.7	67.59		7.27	4.00	0.875	pCi/L	90	60 - 140

Lab Sample ID: 570-123902-2 DU
Matrix: Water
Analysis Batch: 599293

Client Sample ID: A1BPSW0001_20230110
Prep Type: Dissolved
Prep Batch: 598084

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	0.346	U	0.1532	U	0.473	3.00	0.881	pCi/L	0.17	1
Gross Beta	1.02		0.4396	U	0.516	4.00	0.843	pCi/L	0.51	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597608/1-A
Matrix: Water
Analysis Batch: 599615

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597608

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.646	U	4.96	4.97	20.0	5.83	pCi/L	01/20/23 10:57	02/08/23 17:24	1
Potassium-40	39.35	U	77.1	77.2		80.4	pCi/L	01/20/23 10:57	02/08/23 17:24	1

Lab Sample ID: LCS 160-597608/2-A
Matrix: Water
Analysis Batch: 599622

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597608

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135600		16100		317	pCi/L	100	75 - 125
Cesium-137	41000	41990		5000	20.0	78.2	pCi/L	102	75 - 125
Cobalt-60	18100	19150		2280		42.4	pCi/L	106	75 - 125

Lab Sample ID: 570-123901-U-1-F DU
Matrix: Water
Analysis Batch: 599615

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597608

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	-2.26	U	-4.511	U	8.72	20.0	9.96	pCi/L	0.12	1
Potassium-40	87.2		114.5		60.1		50.5	pCi/L	0.23	1

Lab Sample ID: MB 160-597762/1-A
Matrix: Water
Analysis Batch: 599334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597762

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.2826	U	7.23	7.23	20.0	8.99	pCi/L	01/23/23 09:10	02/03/23 19:56	1
Potassium-40	-27.29	U	98.1	98.2		124	pCi/L	01/23/23 09:10	02/03/23 19:56	1

Lab Sample ID: LCS 160-597762/2-A
Matrix: Water
Analysis Batch: 599336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597762

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	136300		16200		315	pCi/L	101	75 - 125
Cesium-137	41000	41970		5000	20.0	76.7	pCi/L	102	75 - 125
Cobalt-60	18200	18940		2260		46.2	pCi/L	104	75 - 125

Lab Sample ID: MB 160-597949/1-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597949

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.297	U	6.65	6.65	20.0	8.59	pCi/L	01/23/23 15:17	02/08/23 14:01	1
Potassium-40	43.04	U	107	107		122	pCi/L	01/23/23 15:17	02/08/23 14:01	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: LCS 160-597949/2-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597949

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Americium-241			135000	147900		17600		344	pCi/L	109	75 - 125		
Cesium-137			41000	39930		4760	20.0	101	pCi/L	97	75 - 125		
Cobalt-60			18100	17850		2130		66.0	pCi/L	99	75 - 125		

Lab Sample ID: 570-123009-U-1-L DU
Matrix: Water
Analysis Batch: 599329

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 597762

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Cesium-137	-4.40	U		1.760	U	9.33	20.0	11.7	pCi/L			0.36	1
Potassium-40	79.5			-6.796	U	124		145	pCi/L			0.45	1

Lab Sample ID: 570-123901-U-2-F DU
Matrix: Water
Analysis Batch: 599622

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 597949

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Cesium-137	1.70	U		3.380	U	6.27	20.0	7.58	pCi/L			0.14	1
Potassium-40	82.3			-45.72	U	90.3		128	pCi/L			0.80	1

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-598269/1-A
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598269

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	137.8	U	159	159	500	261	pCi/L	01/26/23 08:47	02/01/23 10:49	1

Lab Sample ID: LCS 160-598269/2-A
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598269

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2110	2226		377	500	263	pCi/L	105	75 - 125		

Lab Sample ID: 160-48571-B-5-B MS
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598269

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	153	U	2140	2086		358	500	253	pCi/L	90	60 - 140		

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: 160-48571-B-3-B DU
Matrix: Water
Analysis Batch: 599474

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598269

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	102	U		145.0	U	161	500	263	pCi/L			0.14	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-597806/1-A
Matrix: Water
Analysis Batch: 598399

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597806

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1420		0.1193	0.1196	1.00	0.134	pCi/L	01/23/23 13:17	01/27/23 11:32	1
Total Uranium	0.1420		0.1193	0.1196	1.00	0.134	pCi/L	01/23/23 13:17	01/27/23 11:32	1

Lab Sample ID: LCS 160-597806/2-A
Matrix: Water
Analysis Batch: 598400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597806

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.58		1.50	1.00	0.117	pCi/L	99	75 - 125		
Uranium-238			13.0	12.67		1.51	1.00	0.102	pCi/L	97	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*84.6*		*30 - 110*

Lab Sample ID: 570-123902-2 DU
Matrix: Water
Analysis Batch: 598414

Client Sample ID: A1BPSW0001_20230110
Prep Type: Dissolved
Prep Batch: 597806

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.356			0.1046	U	0.1246	1.00	0.162	pCi/L			0.72	1
Total Uranium	0.356			0.1046	U	0.1246	1.00	0.162	pCi/L			0.72	1

Rad

Filtration Batch: 596502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123009-U-1-L DU	Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 597489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-1	EPSW001IE01_20230110	Dissolved	Water	Filtration	
570-123902-2	A1BPSW0001_20230110	Dissolved	Water	Filtration	
570-123902-2 MS	A1BPSW0001_20230110	Dissolved	Water	Filtration	
570-123902-2 MSBT	A1BPSW0001_20230110	Dissolved	Water	Filtration	
570-123901-U-2-F DU	Duplicate	Dissolved	Water	Filtration	
570-123902-2 DU	A1BPSW0001_20230110	Dissolved	Water	Filtration	

Prep Batch: 597608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-1	EPSW001IE01_20230110	Total/NA	Water	Fill_Geo-0	
570-123902-2	A1BPSW0001_20230110	Total/NA	Water	Fill_Geo-0	
MB 160-597608/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597608/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123901-U-1-F DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-1	EPSW001IE01_20230110	Dissolved	Water	Fill_Geo-0	597489
MB 160-597762/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597762/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123009-U-1-L DU	Duplicate	Dissolved	Water	Fill_Geo-0	596502

Prep Batch: 597806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-1	EPSW001IE01_20230110	Dissolved	Water	ExtChrom	597489
570-123902-1	EPSW001IE01_20230110	Total/NA	Water	ExtChrom	
570-123902-2	A1BPSW0001_20230110	Dissolved	Water	ExtChrom	597489
570-123902-2	A1BPSW0001_20230110	Total/NA	Water	ExtChrom	
MB 160-597806/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-597806/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-123902-2 DU	A1BPSW0001_20230110	Dissolved	Water	ExtChrom	597489

Prep Batch: 597949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-2	A1BPSW0001_20230110	Dissolved	Water	Fill_Geo-0	597489
MB 160-597949/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597949/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123901-U-2-F DU	Duplicate	Dissolved	Water	Fill_Geo-0	597489

Prep Batch: 598084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-1	EPSW001IE01_20230110	Dissolved	Water	Evaporation	597489
570-123902-1	EPSW001IE01_20230110	Total/NA	Water	Evaporation	
570-123902-2	A1BPSW0001_20230110	Dissolved	Water	Evaporation	597489
570-123902-2	A1BPSW0001_20230110	Total/NA	Water	Evaporation	
MB 160-598084/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598084/2-A	Lab Control Sample	Total/NA	Water	Evaporation	

Rad (Continued)

Prep Batch: 598084 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSB 160-598084/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-123902-2 MS	A1BPSW0001_20230110	Dissolved	Water	Evaporation	597489
570-123902-2 MSBT	A1BPSW0001_20230110	Dissolved	Water	Evaporation	597489
570-123902-2 DU	A1BPSW0001_20230110	Dissolved	Water	Evaporation	597489

Prep Batch: 598269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123902-1	EPSW001IE01_20230110	Total/NA	Water	LSC_Dist_Susp	
570-123902-2	A1BPSW0001_20230110	Total/NA	Water	LSC_Dist_Susp	
MB 160-598269/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-598269/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
160-48571-B-5-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
160-48571-B-3-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-4

Client Sample ID: EPSW001IE01_20230110

Date Collected: 01/10/23 11:30
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	Evaporation			199.99 mL	1.0 g	598084	01/24/23 13:26	MST	EET SL
Dissolved	Analysis	900.0		1	1.0 mL	1.0 mL	599293	02/03/23 19:05	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Evaporation			37.14 mL	1.0 g	598084	01/24/23 13:26	MST	EET SL
Total/NA	Analysis	900.0		1			599293	02/03/23 19:04	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597762	01/23/23 09:10	JML	EET SL
Dissolved	Analysis	901.1		1			599333	02/03/23 22:10	SCB	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597608	01/20/23 10:57	SEH	EET SL
Total/NA	Analysis	901.1		1			599623	02/08/23 21:17	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	LSC_Dist_Susp			104.25 mL	1.0 g	598269	01/26/23 08:47	SEH	EET SL
Total/NA	Analysis	906.0		1			599474	02/01/23 12:42	REV	EET SL
	Instrument ID: LSCBROWN									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	ExtChrom			355.55 mL	1.0 mL	597806	01/23/23 13:17	MAL	EET SL
Dissolved	Analysis	A-01-R		1			598408	01/27/23 11:32	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			102.57 mL	1.0 mL	597806	01/23/23 13:17	MAL	EET SL
Total/NA	Analysis	A-01-R		1			598407	01/27/23 11:32	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client Sample ID: A1BPSW0001_20230110

Date Collected: 01/10/23 12:00
Date Received: 01/12/23 17:55

Lab Sample ID: 570-123902-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	Evaporation			200.00 mL	1.0 g	598084	01/24/23 13:26	MST	EET SL
Dissolved	Analysis	900.0		1	1.0 mL	1.0 mL	599293	02/03/23 19:05	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	598084	01/24/23 13:26	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	599293	02/03/23 19:05	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597949	01/23/23 15:17	JML	EET SL
Dissolved	Analysis	901.1		1			599616	02/08/23 03:48	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597608	01/20/23 10:57	SEH	EET SL
Total/NA	Analysis	901.1		1			599982	02/09/23 05:47	CAH	EET SL
	Instrument ID: GAMMAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123902-4
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: A1BPSW0001_20230110
Lab Sample ID: 570-123902-2
Date Collected: 01/10/23 12:00
Matrix: Water
Date Received: 01/12/23 17:55

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	LSC_Dist_Susp			96.05 mL	1.0 g	598269	01/26/23 08:47	SEH	EET SL
Total/NA	Analysis	906.0		1			599474	02/01/23 13:05	REV	EET SL
	Instrument ID: LSCBROWN									
Dissolved	Filtration	Filtration			9000 mL	1.0 mL	597489	01/19/23 12:03	JML	EET SL
Dissolved	Prep	ExtChrom			496.00 mL	1.0 mL	597806	01/23/23 13:17	MAL	EET SL
Dissolved	Analysis	A-01-R		1			598410	01/27/23 11:32	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			249.09 mL	1.0 mL	597806	01/23/23 13:17	MAL	EET SL
Total/NA	Analysis	A-01-R		1			598409	01/27/23 11:32	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-123902-4
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	02-09-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-4

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123902-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123902-1	EPSW001IE01_20230110	Water	01/10/23 11:30	01/12/23 17:55
570-123902-2	A1BPSW0001_20230110	Water	01/10/23 12:00	01/12/23 17:55

123102

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes.
–	–	–	–	–	–			2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230110	~~01/09/23~~	1130	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				1/2
A1BPSW0001_20230110	~~01/09/23~~	1200	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

Sample dates corrected to 01/10/23 (MD 2/2/2023)

570-123902 Chain of Custody

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No. ____	
Relinquished by:	Company: SHA	Date/Time: ~~1/11/23~~	Received by:	Date/Time: 1/10/23 0750
Relinquished by:	Company: EC	Date/Time: 1/12/23/1755 1-12-23/1650	Received by:	Date/Time: 1/12/23
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.8/1.8 2.1/2.1 1.9/1.9 ~~5C12~~ 1M 5C11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

2/14/2023

SAP COC 2019/2020 VERSION 3

123102

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ▫ DW ▫ NPDES ▫ RCRA ▫ Other

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes.
–	–	–	–	–	–			2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230110	01/09/23	1130	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				1
A1BPSW0001_20230110	01/09/23	1200	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				2
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

570-123902 Chain of Custody

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ▫ Yes	Custody Seal No	Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.____	
Relinquished by:	Company: SHA	Date/Time: [illegible]	Received by:	Date/Time: 1/10.23 0750
Relinquished by:	Company: EC 1/12/23/1755	Date/Time: 1-12-23/1650	Received by:	Date/Time: 1/12/23 7
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.8/1.8 2.1/2.1 1.9/1.9 ~~SC12~~ SC11

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/14/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204357.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-123902-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/14/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
EPSW001IE01_20230110 (570-123902-1)	1/9/23	11:30 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
A1BPSW0001_20230110 (570-123902-2)	1/9/23	12:00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
														6	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by: FEDEX	Date/Time: 01/17/23 11:30	Company: EC	Received by: FEDEX	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: Briana Sharkey-Gonzalez	Date/Time: 1/18/23 9:50am	Company: ETASTL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-204357

Containers

Count	Container Type	Preservative
2	Amber Glass 250ml - unpreserved	None
4	Plastic 2.5 Gallon	None

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123902-4

Login Number: 123902
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-123902-4

Login Number: 123902
List Number: 4
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/18/23 12:01 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/13/2023 1:00:13 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124252-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

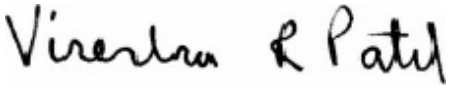
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired
EY	Result exceeds normal dynamic range; reported as a min. est.
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124252-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124252-1

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

GC/MS VOA
Method 624.1: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3). Elevated reporting limits (RLs) are provided.

Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-296662. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following samples were received and analyzed outside of holding time: EPBLLC_011523 (570-124252-1) and EPBMC_011523 (570-124252-2).

Method 218.6: The following samples were received,filtered and analyzed outside of holding time: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3).

Method 300.0: The following samples were received outside of holding time: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3).

Method 314.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-297043 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Perchlorate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-297278 and analytical batch 570-297371 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: <EXPLANATION_REQUIRED>

EPBMC_011523 (570-124252-2)

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Job ID: 570-124252-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-296476.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method:625.1 Sim

Method 625: The emulsions were broken up using sodium sulfate
Method:625 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Client Sample ID: EPBLLC_011523 — Lab Sample ID: 570-124252-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.032	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.036	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Dissolved
Fluoride	0.66		0.10	0.046	mg/L	1		300.0	Total/NA
Nitrate as N	1.9	BU BV	0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate - DL	780		20	4.7	mg/L	20		300.0	Total/NA
Boron	2100		500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	2000	BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	2.8		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	75		1.0	0.17	ug/L	1		200.8	Total Recoverable
Beryllium	0.28	J,DX	0.50	0.26	ug/L	1		200.8	Total Recoverable
Cadmium	0.57	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	4.3		2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	12		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	4200	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	190		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	13		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	3.5		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	0.81	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Selenium	19		2.0	0.52	ug/L	1		200.8	Total Recoverable
Zinc	15	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Aluminum	2600		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	1.6	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	50	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.38	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	4.0	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	13	J,DX BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	18	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	7.3	BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	0.94	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	23	BU	2.0	0.52	ug/L	1		200.8	Dissolved
Cr (III)	0.0043	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Total Suspended Solids	450		5.0	4.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EPBMC_011523 — Lab Sample ID: 570-124252-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.028	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Client Sample ID: EPBMC_011523 (Continued)

Lab Sample ID: 570-124252-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.073	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Dissolved
Fluoride	0.58		0.10	0.046	mg/L	1		300.0	Total/NA
Nitrate as N	2.4	BU BV	0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate - DL	230		10	2.4	mg/L	10		300.0	Total/NA
Boron	330	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	320	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	1.4		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	44		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	1.5	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	3.2		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	1200	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	44		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	2.7		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	0.80	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Selenium	3.8		2.0	0.52	ug/L	1		200.8	Total Recoverable
Zinc	4.4	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Aluminum	810		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	1.1	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	35	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.33	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	2.2	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	40	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	15	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.8	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Selenium	3.7	BU	2.0	0.52	ug/L	1		200.8	Dissolved
Aluminum	16	BU	15	8.6	ug/L	1		200.8	Dissolved
Total Suspended Solids	42		3.3	2.8	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EPBBC_011523

Lab Sample ID: 570-124252-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.073	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.041	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Dissolved
Fluoride	0.28		0.10	0.046	mg/L	1		300.0	Total/NA
Nitrate as N	3.3	BU BV	0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	78		1.0	0.24	mg/L	1		300.0	Total/NA
Boron	180	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	180	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	1.6		1.0	0.16	ug/L	1		200.8	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPBBC_011523 (Continued)

Lab Sample ID: 570-124252-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	41		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	1.0	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	3.9		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	540	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	34		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	2.7		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	1.2		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	0.45	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Zinc	6.2	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Aluminum	410		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	1.4	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	32	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.37	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	2.9	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	55	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	4.7	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.9	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	0.40	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Aluminum	40	BU	15	8.6	ug/L	1		200.8	Dissolved
Total Suspended Solids	37		2.0	1.7	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		4.0	1.6	ug/L			01/18/23 12:28	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*85*		*60 - 140*		*01/18/23 12:28*	*4*
4-Bromofluorobenzene (Surr)	*92*		*60 - 140*		*01/18/23 12:28*	*4*
Dibromofluoromethane	*92*		*60 - 140*		*01/18/23 12:28*	*4*
Toluene-d8 (Surr)	*100*		*60 - 140*		*01/18/23 12:28*	*4*

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		4.0	1.6	ug/L			01/18/23 12:49	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*60 - 140*		*01/18/23 12:49*	*4*
4-Bromofluorobenzene (Surr)	*94*		*60 - 140*		*01/18/23 12:49*	*4*
Dibromofluoromethane	*96*		*60 - 140*		*01/18/23 12:49*	*4*
Toluene-d8 (Surr)	*102*		*60 - 140*		*01/18/23 12:49*	*4*

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		4.0	1.6	ug/L			01/18/23 13:11	4

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*60 - 140*		*01/18/23 13:11*	*4*
4-Bromofluorobenzene (Surr)	*94*		*60 - 140*		*01/18/23 13:11*	*4*
Dibromofluoromethane	*95*		*60 - 140*		*01/18/23 13:11*	*4*
Toluene-d8 (Surr)	*100*		*60 - 140*		*01/18/23 13:11*	*4*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		4.9	3.6	ug/L		01/18/23 12:55	01/26/23 17:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*74*		*28 - 127*	*01/18/23 12:55*	*01/26/23 17:58*	*1*
2-Fluorobiphenyl (Surr)	*74*		*31 - 120*	*01/18/23 12:55*	*01/26/23 17:58*	*1*
2-Fluorophenol (Surr)	*25*		*17 - 120*	*01/18/23 12:55*	*01/26/23 17:58*	*1*
Nitrobenzene-d5 (Surr)	*95*		*27 - 120*	*01/18/23 12:55*	*01/26/23 17:58*	*1*
Phenol-d6 (Surr)	*21*		*10 - 120*	*01/18/23 12:55*	*01/26/23 17:58*	*1*
p-Terphenyl-d14 (Surr)	*73*		*45 - 120*	*01/18/23 12:55*	*01/26/23 17:58*	*1*

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		4.9	3.5	ug/L		01/18/23 12:55	01/26/23 18:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*110*		*28 - 127*	*01/18/23 12:55*	*01/26/23 18:19*	*1*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*	*01/18/23 12:55*	*01/26/23 18:19*	*1*
2-Fluorophenol (Surr)	*53*		*17 - 120*	*01/18/23 12:55*	*01/26/23 18:19*	*1*
Nitrobenzene-d5 (Surr)	*94*		*27 - 120*	*01/18/23 12:55*	*01/26/23 18:19*	*1*
Phenol-d6 (Surr)	*35*		*10 - 120*	*01/18/23 12:55*	*01/26/23 18:19*	*1*
p-Terphenyl-d14 (Surr)	*68*		*45 - 120*	*01/18/23 12:55*	*01/26/23 18:19*	*1*

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.2	3.7	ug/L		01/18/23 12:55	01/26/23 18:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*107*		*28 - 127*	*01/18/23 12:55*	*01/26/23 18:40*	*1*
2-Fluorobiphenyl (Surr)	*62*		*31 - 120*	*01/18/23 12:55*	*01/26/23 18:40*	*1*
2-Fluorophenol (Surr)	*49*		*17 - 120*	*01/18/23 12:55*	*01/26/23 18:40*	*1*
Nitrobenzene-d5 (Surr)	*89*		*27 - 120*	*01/18/23 12:55*	*01/26/23 18:40*	*1*
Phenol-d6 (Surr)	*35*		*10 - 120*	*01/18/23 12:55*	*01/26/23 18:40*	*1*
p-Terphenyl-d14 (Surr)	*70*		*45 - 120*	*01/18/23 12:55*	*01/26/23 18:40*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.032	J,DX BU BV	0.20	0.019	ug/L			01/18/23 05:28	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.028	J,DX BU BV	0.20	0.019	ug/L			01/18/23 05:40	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.073	J,DX BU BV	0.20	0.019	ug/L			01/18/23 05:52	1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.036	J,DX BU BV	0.20	0.019	ug/L			01/18/23 07:27	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.073	J,DX BU BV	0.20	0.019	ug/L			01/18/23 07:40	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.041	J,DX BU BV	0.20	0.019	ug/L			01/18/23 07:52	1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25
Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.66**		0.10	0.046	mg/L			01/18/23 08:42	1
Nitrite as N	ND	BU BV	0.10	0.043	mg/L			01/18/23 08:42	1
Nitrate as N	**1.9**	**BU BV**	0.10	0.020	mg/L			01/18/23 08:42	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25
Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.58**		0.10	0.046	mg/L			01/18/23 10:57	1
Nitrite as N	ND	BU BV	0.10	0.043	mg/L			01/18/23 10:57	1
Nitrate as N	**2.4**	**BU BV**	0.10	0.020	mg/L			01/18/23 10:57	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25
Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.28**		0.10	0.046	mg/L			01/18/23 11:13	1
Nitrite as N	ND	BU BV	0.10	0.043	mg/L			01/18/23 11:13	1
Nitrate as N	**3.3**	**BU BV**	0.10	0.020	mg/L			01/18/23 11:13	1
Sulfate	**78**		1.0	0.24	mg/L			01/18/23 11:13	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Method: EPA 300.0 - Anions, Ion Chromatography - DL

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	780		20	4.7	mg/L			01/18/23 14:20	20

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	230		10	2.4	mg/L			01/18/23 14:37	10

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/20/23 09:25	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/20/23 09:44	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/20/23 10:03	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2100		500	3.5	ug/L		01/20/23 06:08	01/20/23 16:43	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	330	J,DX	500	3.5	ug/L		01/20/23 06:08	01/20/23 16:45	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	180	J,DX	500	3.5	ug/L		01/20/23 06:08	01/20/23 16:47	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2000	BU	500	3.5	ug/L			01/20/23 02:37	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	320	J,DX BU	500	3.5	ug/L			01/20/23 02:39	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	180	J,DX BU	500	3.5	ug/L			01/20/23 02:51	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/20/23 06:26	01/20/23 10:18	1
Arsenic	**2.8**		1.0	0.16	ug/L		01/20/23 06:26	01/20/23 10:18	1
Barium	**75**		1.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:18	1
Beryllium	**0.28**	**J,DX**	0.50	0.26	ug/L		01/20/23 06:26	01/20/23 10:18	1
Cadmium	**0.57**	**J,DX**	1.0	0.13	ug/L		01/20/23 06:26	01/20/23 10:18	1
Chromium	**4.3**		2.0	0.14	ug/L		01/20/23 06:26	01/20/23 10:18	1
Copper	**12**		2.0	0.32	ug/L		01/20/23 06:26	01/20/23 10:18	1
Iron	**4200**	**MB**	20	3.7	ug/L		01/20/23 06:26	01/20/23 10:18	1
Manganese	**190**		1.0	0.41	ug/L		01/20/23 06:26	01/20/23 10:18	1
Nickel	**13**		2.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:18	1
Lead	**3.5**		1.0	0.12	ug/L		01/20/23 06:26	01/20/23 10:18	1
Antimony	**0.81**	**J,DX**	2.0	0.36	ug/L		01/20/23 06:26	01/20/23 10:18	1
Selenium	**19**		2.0	0.52	ug/L		01/20/23 06:26	01/20/23 10:18	1
Thallium	ND		1.0	0.11	ug/L		01/20/23 06:26	01/20/23 10:18	1
Zinc	**15**	**J,DX**	20	2.8	ug/L		01/20/23 06:26	01/20/23 10:18	1
Aluminum	**2600**		15	8.6	ug/L		01/20/23 06:26	01/20/23 10:18	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/20/23 06:26	01/20/23 10:20	1
Arsenic	**1.4**		1.0	0.16	ug/L		01/20/23 06:26	01/20/23 10:20	1
Barium	**44**		1.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:20	1
Beryllium	ND		0.50	0.26	ug/L		01/20/23 06:26	01/20/23 10:20	1
Cadmium	ND		1.0	0.13	ug/L		01/20/23 06:26	01/20/23 10:20	1
Chromium	**1.5**	**J,DX**	2.0	0.14	ug/L		01/20/23 06:26	01/20/23 10:20	1
Copper	**3.2**		2.0	0.32	ug/L		01/20/23 06:26	01/20/23 10:20	1
Iron	**1200**	**MB**	20	3.7	ug/L		01/20/23 06:26	01/20/23 10:20	1
Manganese	**44**		1.0	0.41	ug/L		01/20/23 06:26	01/20/23 10:20	1
Nickel	**2.7**		2.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:20	1
Lead	**0.80**	**J,DX**	1.0	0.12	ug/L		01/20/23 06:26	01/20/23 10:20	1
Antimony	ND		2.0	0.36	ug/L		01/20/23 06:26	01/20/23 10:20	1
Selenium	**3.8**		2.0	0.52	ug/L		01/20/23 06:26	01/20/23 10:20	1
Thallium	ND		1.0	0.11	ug/L		01/20/23 06:26	01/20/23 10:20	1
Zinc	**4.4**	**J,DX**	20	2.8	ug/L		01/20/23 06:26	01/20/23 10:20	1
Aluminum	**810**		15	8.6	ug/L		01/20/23 06:26	01/20/23 10:20	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/20/23 06:26	01/20/23 10:22	1
Arsenic	**1.6**		1.0	0.16	ug/L		01/20/23 06:26	01/20/23 10:22	1
Barium	**41**		1.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:22	1
Beryllium	ND		0.50	0.26	ug/L		01/20/23 06:26	01/20/23 10:22	1
Cadmium	ND		1.0	0.13	ug/L		01/20/23 06:26	01/20/23 10:22	1
Chromium	**1.0**	**J,DX**	2.0	0.14	ug/L		01/20/23 06:26	01/20/23 10:22	1
Copper	**3.9**		2.0	0.32	ug/L		01/20/23 06:26	01/20/23 10:22	1
Iron	**540**	**MB**	20	3.7	ug/L		01/20/23 06:26	01/20/23 10:22	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable (Continued)

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**34**		1.0	0.41	ug/L		01/20/23 06:26	01/20/23 10:22	1
Nickel	**2.7**		2.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:22	1
Lead	**1.2**		1.0	0.12	ug/L		01/20/23 06:26	01/20/23 10:22	1
Antimony	**0.45**	**J,DX**	2.0	0.36	ug/L		01/20/23 06:26	01/20/23 10:22	1
Selenium	ND		2.0	0.52	ug/L		01/20/23 06:26	01/20/23 10:22	1
Thallium	ND		1.0	0.11	ug/L		01/20/23 06:26	01/20/23 10:22	1
Zinc	**6.2**	**J,DX**	20	2.8	ug/L		01/20/23 06:26	01/20/23 10:22	1
Aluminum	**410**		15	8.6	ug/L		01/20/23 06:26	01/20/23 10:22	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/19/23 10:44	1
Arsenic	**1.6**	**BU**	1.0	0.16	ug/L			01/19/23 10:44	1
Barium	**50**	**BU**	1.0	0.17	ug/L			01/19/23 10:44	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/19/23 10:44	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/19/23 10:44	1
Chromium	**0.38**	**J,DX BU**	2.0	0.14	ug/L			01/19/23 10:44	1
Copper	**4.0**	**BU**	2.0	0.32	ug/L			01/19/23 10:44	1
Iron	**13**	**J,DX BU**	20	3.7	ug/L			01/19/23 10:44	1
Manganese	**18**	**BU**	1.0	0.41	ug/L			01/19/23 10:44	1
Nickel	**7.3**	**BU**	2.0	0.17	ug/L			01/19/23 10:44	1
Lead	ND	BU	1.0	0.12	ug/L			01/19/23 10:44	1
Antimony	**0.94**	**J,DX BU**	2.0	0.36	ug/L			01/19/23 10:44	1
Selenium	**23**	**BU**	2.0	0.52	ug/L			01/19/23 10:44	1
Thallium	ND	BU	1.0	0.11	ug/L			01/19/23 10:44	1
Zinc	ND	BU	20	2.8	ug/L			01/19/23 10:44	1
Aluminum	ND	BU	15	8.6	ug/L			01/19/23 10:44	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/19/23 10:46	1
Arsenic	**1.1**	**BU**	1.0	0.16	ug/L			01/19/23 10:46	1
Barium	**35**	**BU**	1.0	0.17	ug/L			01/19/23 10:46	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/19/23 10:46	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/19/23 10:46	1
Chromium	**0.33**	**J,DX BU**	2.0	0.14	ug/L			01/19/23 10:46	1
Copper	**2.2**	**BU**	2.0	0.32	ug/L			01/19/23 10:46	1
Iron	**40**	**BU**	20	3.7	ug/L			01/19/23 10:46	1
Manganese	**15**	**BU**	1.0	0.41	ug/L			01/19/23 10:46	1
Nickel	**1.8**	**J,DX BU**	2.0	0.17	ug/L			01/19/23 10:46	1
Lead	ND	BU	1.0	0.12	ug/L			01/19/23 10:46	1
Antimony	ND	BU	2.0	0.36	ug/L			01/19/23 10:46	1
Selenium	**3.7**	**BU**	2.0	0.52	ug/L			01/19/23 10:46	1
Thallium	ND	BU	1.0	0.11	ug/L			01/19/23 10:46	1
Zinc	ND	BU	20	2.8	ug/L			01/19/23 10:46	1
Aluminum	**16**	**BU**	15	8.6	ug/L			01/19/23 10:46	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/19/23 09:15	1
Arsenic	**1.4**	**BU**	1.0	0.16	ug/L			01/19/23 09:15	1
Barium	**32**	**BU**	1.0	0.17	ug/L			01/19/23 09:15	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/19/23 09:15	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/19/23 09:15	1
Chromium	**0.37**	**J,DX BU**	2.0	0.14	ug/L			01/19/23 09:15	1
Copper	**2.9**	**BU**	2.0	0.32	ug/L			01/19/23 09:15	1
Iron	**55**	**BU**	20	3.7	ug/L			01/19/23 09:15	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved (Continued)

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**4.7**	**BU**	1.0	0.41	ug/L			01/19/23 09:15	1
Nickel	**1.9**	**J,DX BU**	2.0	0.17	ug/L			01/19/23 09:15	1
Lead	ND	BU	1.0	0.12	ug/L			01/19/23 09:15	1
Antimony	**0.40**	**J,DX BU**	2.0	0.36	ug/L			01/19/23 09:15	1
Selenium	ND	BU	2.0	0.52	ug/L			01/19/23 09:15	1
Thallium	ND	BU	1.0	0.11	ug/L			01/19/23 09:15	1
Zinc	ND	BU	20	2.8	ug/L			01/19/23 09:15	1
Aluminum	**40**	**BU**	15	8.6	ug/L			01/19/23 09:15	1

General Chemistry

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25
Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	**0.0043**	**J,DX**	0.050	0.0030	mg/L			01/24/23 15:25	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/23/23 14:38	1
Total Suspended Solids (SM 2540D)	**450**		5.0	4.1	mg/L			01/20/23 13:11	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25
Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			01/24/23 15:25	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/23/23 14:45	1
Total Suspended Solids (SM 2540D)	**42**		3.3	2.8	mg/L			01/20/23 13:11	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25
Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			01/24/23 15:25	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/23/23 14:51	1
Total Suspended Solids (SM 2540D)	**37**		2.0	1.7	mg/L			01/20/23 13:11	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-124252-1	EPBLLC_011523	85	92	92	100
570-124252-2	EPBMC_011523	90	94	96	102
570-124252-3	EPBBC_011523	86	94	95	100
LCS 570-296662/4	Lab Control Sample	87	97	92	98
LCSD 570-296662/5	Lab Control Sample Dup	86	97	92	100
MB 570-296662/10	Method Blank	84	93	92	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-124252-1	EPBLLC_011523	74	74	25	95	21	73
570-124252-2	EPBMC_011523	110	69	53	94	35	68
570-124252-3	EPBBC_011523	107	62	49	89	35	70
LCS 570-296476/2-A	Lab Control Sample	109	81	63	81	44	105
LCSD 570-296476/3-A	Lab Control Sample Dup	106	80	63	80	45	106
MB 570-296476/1-A	Method Blank	69	55	40	64	26	76

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-296662/10
Matrix: Water
Analysis Batch: 296662

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/18/23 11:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*60 - 140*		*01/18/23 11:24*	*1*
4-Bromofluorobenzene (Surr)	*93*		*60 - 140*		*01/18/23 11:24*	*1*
Dibromofluoromethane	*92*		*60 - 140*		*01/18/23 11:24*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*01/18/23 11:24*	*1*

Lab Sample ID: LCS 570-296662/4
Matrix: Water
Analysis Batch: 296662

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	19.0		ug/L		95	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*60 - 140*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*
Dibromofluoromethane	*92*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*

Lab Sample ID: LCSD 570-296662/5
Matrix: Water
Analysis Batch: 296662

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene			20.0	19.6		ug/L		98	65 - 135	3	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*60 - 140*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*
Dibromofluoromethane	*92*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-296476/1-A
Matrix: Water
Analysis Batch: 299094

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296476

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/17/23 13:55	01/27/23 11:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*69*		*28 - 127*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
2-Fluorobiphenyl (Surr)	*55*		*31 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*
2-Fluorophenol (Surr)	*40*		*17 - 120*	*01/17/23 13:55*	*01/27/23 11:45*	*1*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-296476/1-A
Matrix: Water
Analysis Batch: 299094

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296476

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	64		27 - 120	01/17/23 13:55	01/27/23 11:45	1
Phenol-d6 (Surr)	26		10 - 120	01/17/23 13:55	01/27/23 11:45	1
p-Terphenyl-d14 (Surr)	76		45 - 120	01/17/23 13:55	01/27/23 11:45	1

Lab Sample ID: LCS 570-296476/2-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296476

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bis(2-ethylhexyl) phthalate			20.0	25.9		ug/L		130	29 - 137		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	109		28 - 127
2-Fluorobiphenyl (Surr)	81		31 - 120
2-Fluorophenol (Surr)	63		17 - 120
Nitrobenzene-d5 (Surr)	81		27 - 120
Phenol-d6 (Surr)	44		10 - 120
p-Terphenyl-d14 (Surr)	105		45 - 120

Lab Sample ID: LCSD 570-296476/3-A
Matrix: Water
Analysis Batch: 298807

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296476

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate			20.0	25.2		ug/L		126	29 - 137	3	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	106		28 - 127
2-Fluorobiphenyl (Surr)	80		31 - 120
2-Fluorophenol (Surr)	63		17 - 120
Nitrobenzene-d5 (Surr)	80		27 - 120
Phenol-d6 (Surr)	45		10 - 120
p-Terphenyl-d14 (Surr)	106		45 - 120

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-296556/31
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/18/23 02:05	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: LCS 570-296556/32
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	49.9		ug/L		100	95 - 107		

Lab Sample ID: LCSD 570-296556/33
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.1		ug/L		100	95 - 107	0	20

Lab Sample ID: 570-124252-1 MS
Matrix: Water
Analysis Batch: 296556

Client Sample ID: EPBLLC_011523
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	0.032	J,DX BU BV	50.1	51.2		ug/L		102	85 - 121		

Lab Sample ID: 570-124252-1 MSD
Matrix: Water
Analysis Batch: 296556

Client Sample ID: EPBLLC_011523
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.032	J,DX BU BV	50.1	51.1		ug/L		102	85 - 121	0	25

Lab Sample ID: MB 570-296615/1-A
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/18/23 06:52	1

Lab Sample ID: LCS 570-296615/2-A
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.6		ug/L		101	95 - 107		

Lab Sample ID: LCSD 570-296615/3-A
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.7		ug/L		101	95 - 107	0	20

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: 570-124252-1 MS
Matrix: Water
Analysis Batch: 296556

Client Sample ID: EPBLLC_011523
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	0.036	J,DX BU BV	50.1	51.4		ug/L		103	85 - 121

Lab Sample ID: 570-124252-1 MSD
Matrix: Water
Analysis Batch: 296556

Client Sample ID: EPBLLC_011523
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.036	J,DX BU BV	50.1	51.4		ug/L		103	85 - 121	0	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-296623/5
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/18/23 05:14	1
Nitrate as N	ND		0.10	0.020	mg/L			01/18/23 05:14	1

Lab Sample ID: LCS 570-296623/6
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.69		mg/L		107	90 - 110
Nitrate as N	5.00	5.12		mg/L		102	90 - 110

Lab Sample ID: LCSD 570-296623/7
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.69		mg/L		108	90 - 110	0	15
Nitrate as N	5.00	5.10		mg/L		102	90 - 110	0	15

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	ND		2.50	2.72		mg/L		109	80 - 120

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	ND		2.50	2.70		mg/L		108	80 - 120	0	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-296624/5
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			01/18/23 05:14	1
Sulfate	ND		1.0	0.24	mg/L			01/18/23 05:14	1

Lab Sample ID: LCS 570-296624/6
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.50	2.74		mg/L		110	90 - 110
Sulfate	50.0	50.7		mg/L		101	90 - 110

Lab Sample ID: LCSD 570-296624/7
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	2.50	2.76		mg/L		110	90 - 110	1	15
Sulfate	50.0	50.6		mg/L		101	90 - 110	0	15

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.55		2.50	3.09		mg/L		101	80 - 120

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.55		2.50	3.33		mg/L		111	80 - 120	8	20

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N - DL	6.5		5.00	11.3		mg/L		96	80 - 120

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N - DL	6.5		5.00	11.3		mg/L		95	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography - DL (Continued)

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate - DL	43		50.0	89.5		mg/L		94	80 - 120		

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate - DL	43		50.0	90.0		mg/L		95	80 - 120	1	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-297043/7
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/20/23 02:12	1

Lab Sample ID: LCS 570-297043/8
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	23.0		ug/L		92	85 - 115		

Lab Sample ID: LCSD 570-297043/9
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	23.5		ug/L		94	85 - 115	2	15

Lab Sample ID: 570-124466-C-9 MS
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	100	EY	50.0	153	EY	ug/L		101	80 - 120		

Lab Sample ID: 570-124466-C-9 MSD
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	100	EY	50.0	144	EY	ug/L		84	80 - 120	6	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-297274/1-A
Matrix: Water
Analysis Batch: 297463

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 297274

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		01/20/23 06:08	01/20/23 12:50	1

Lab Sample ID: LCS 570-297274/2-A
Matrix: Water
Analysis Batch: 297463

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 297274

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	539		ug/L		108	85 - 115

Lab Sample ID: LCSD 570-297274/3-A
Matrix: Water
Analysis Batch: 297463

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 297274

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	534		ug/L		107	85 - 115	1	20

Lab Sample ID: 570-124382-B-1-B MS
Matrix: Water
Analysis Batch: 297463

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 297274

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	45	J,DX	500	571		ug/L		105	80 - 120

Lab Sample ID: 570-124382-B-1-C MSD
Matrix: Water
Analysis Batch: 297463

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 297274

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	45	J,DX	500	565		ug/L		104	80 - 120	1	20

Lab Sample ID: MB 570-296797/1-A
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			01/20/23 02:22	1

Lab Sample ID: LCS 570-296797/2-A
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	501		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-296797/3-A
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	502		ug/L		100	85 - 115	0	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: 570-124392-C-3-B MS
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	76	J,DX	500	577		ug/L		100	80 - 120

Lab Sample ID: 570-124392-C-3-C MSD
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	76	J,DX	500	580		ug/L		101	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-297278/1-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/20/23 06:26	01/20/23 10:03	1
Arsenic	ND		1.0	0.16	ug/L		01/20/23 06:26	01/20/23 10:03	1
Barium	ND		1.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:03	1
Beryllium	ND		0.50	0.26	ug/L		01/20/23 06:26	01/20/23 10:03	1
Cadmium	ND		1.0	0.13	ug/L		01/20/23 06:26	01/20/23 10:03	1
Chromium	ND		2.0	0.14	ug/L		01/20/23 06:26	01/20/23 10:03	1
Copper	ND		2.0	0.32	ug/L		01/20/23 06:26	01/20/23 10:03	1
Iron	6.36	J,DX	20	3.7	ug/L		01/20/23 06:26	01/20/23 10:03	1
Manganese	ND		1.0	0.41	ug/L		01/20/23 06:26	01/20/23 10:03	1
Nickel	ND		2.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:03	1
Lead	ND		1.0	0.12	ug/L		01/20/23 06:26	01/20/23 10:03	1
Antimony	ND		2.0	0.36	ug/L		01/20/23 06:26	01/20/23 10:03	1
Selenium	ND		2.0	0.52	ug/L		01/20/23 06:26	01/20/23 10:03	1
Thallium	ND		1.0	0.11	ug/L		01/20/23 06:26	01/20/23 10:03	1
Zinc	ND		20	2.8	ug/L		01/20/23 06:26	01/20/23 10:03	1
Aluminum	ND		15	8.6	ug/L		01/20/23 06:26	01/20/23 10:03	1

Lab Sample ID: LCS 570-297278/2-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	80.0	81.7		ug/L		102	85 - 115
Arsenic	80.0	81.9		ug/L		102	85 - 115
Barium	80.0	81.9		ug/L		102	85 - 115
Beryllium	80.0	82.8		ug/L		104	85 - 115
Cadmium	80.0	81.5		ug/L		102	85 - 115
Chromium	80.0	83.4		ug/L		104	85 - 115
Copper	80.0	84.2		ug/L		105	85 - 115
Iron	800	839		ug/L		105	85 - 115
Manganese	80.0	83.5		ug/L		104	85 - 115
Nickel	80.0	83.4		ug/L		104	85 - 115
Lead	80.0	80.5		ug/L		101	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-297278/2-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	80.0	85.7		ug/L		107	85 - 115
Selenium	80.0	82.1		ug/L		103	85 - 115
Thallium	80.0	80.3		ug/L		100	85 - 115
Zinc	80.0	82.3		ug/L		103	85 - 115
Aluminum	80.0	86.8		ug/L		108	85 - 115

Lab Sample ID: LCSD 570-297278/3-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	80.0	81.0		ug/L		101	85 - 115	1	20
Arsenic	80.0	81.3		ug/L		102	85 - 115	1	20
Barium	80.0	80.4		ug/L		101	85 - 115	2	20
Beryllium	80.0	83.2		ug/L		104	85 - 115	0	20
Cadmium	80.0	81.5		ug/L		102	85 - 115	0	20
Chromium	80.0	82.2		ug/L		103	85 - 115	1	20
Copper	80.0	82.6		ug/L		103	85 - 115	2	20
Iron	800	826		ug/L		103	85 - 115	2	20
Manganese	80.0	82.4		ug/L		103	85 - 115	1	20
Nickel	80.0	82.9		ug/L		104	85 - 115	1	20
Lead	80.0	81.5		ug/L		102	85 - 115	1	20
Antimony	80.0	84.1		ug/L		105	85 - 115	2	20
Selenium	80.0	81.9		ug/L		102	85 - 115	0	20
Thallium	80.0	81.6		ug/L		102	85 - 115	2	20
Zinc	80.0	82.9		ug/L		104	85 - 115	1	20
Aluminum	80.0	86.0		ug/L		108	85 - 115	1	20

Lab Sample ID: 570-124392-F-1-H MS
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	ND		80.0	82.8		ug/L		103	80 - 120
Arsenic	1.8		80.0	82.5		ug/L		101	80 - 120
Barium	13		80.0	97.1		ug/L		105	80 - 120
Beryllium	ND		80.0	84.7		ug/L		106	80 - 120
Cadmium	ND		80.0	82.4		ug/L		103	80 - 120
Chromium	1.3	J,DX	80.0	85.3		ug/L		105	80 - 120
Copper	4.9		80.0	89.7		ug/L		106	80 - 120
Iron	780	MB	800	1650		ug/L		108	80 - 120
Manganese	19		80.0	103		ug/L		106	80 - 120
Nickel	2.2		80.0	86.0		ug/L		105	80 - 120
Lead	0.85	J,DX	80.0	81.9		ug/L		101	80 - 120
Antimony	0.52	J,DX	80.0	85.2		ug/L		106	80 - 120
Selenium	ND		80.0	79.3		ug/L		99	80 - 120
Thallium	ND		80.0	81.9		ug/L		102	80 - 120
Zinc	7.1	J,DX	80.0	90.3		ug/L		104	80 - 120
Aluminum	670		80.0	996	BB	ug/L		406	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124392-F-1-I MSD
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	ND		80.0	81.8		ug/L		102	80 - 120	1	20
Arsenic	1.8		80.0	83.4		ug/L		102	80 - 120	1	20
Barium	13		80.0	94.7		ug/L		102	80 - 120	3	20
Beryllium	ND		80.0	80.1		ug/L		100	80 - 120	6	20
Cadmium	ND		80.0	81.5		ug/L		102	80 - 120	1	20
Chromium	1.3	J,DX	80.0	83.4		ug/L		103	80 - 120	2	20
Copper	4.9		80.0	88.8		ug/L		105	80 - 120	1	20
Iron	780	MB	800	1710		ug/L		116	80 - 120	3	20
Manganese	19		80.0	102		ug/L		104	80 - 120	1	20
Nickel	2.2		80.0	84.7		ug/L		103	80 - 120	2	20
Lead	0.85	J,DX	80.0	81.4		ug/L		101	80 - 120	1	20
Antimony	0.52	J,DX	80.0	85.2		ug/L		106	80 - 120	0	20
Selenium	ND		80.0	79.9		ug/L		100	80 - 120	1	20
Thallium	ND		80.0	80.7		ug/L		101	80 - 120	2	20
Zinc	7.1	J,DX	80.0	89.6		ug/L		103	80 - 120	1	20
Aluminum	670		80.0	1050	BB	ug/L		475	80 - 120	5	20

Lab Sample ID: MB 570-296798/1-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L			01/19/23 10:31	1
Arsenic	ND		1.0	0.16	ug/L			01/19/23 10:31	1
Barium	ND		1.0	0.17	ug/L			01/19/23 10:31	1
Beryllium	ND		0.50	0.26	ug/L			01/19/23 10:31	1
Cadmium	ND		1.0	0.13	ug/L			01/19/23 10:31	1
Chromium	ND		2.0	0.14	ug/L			01/19/23 10:31	1
Copper	ND		2.0	0.32	ug/L			01/19/23 10:31	1
Iron	ND		20	3.7	ug/L			01/19/23 10:31	1
Manganese	ND		1.0	0.41	ug/L			01/19/23 10:31	1
Nickel	ND		2.0	0.17	ug/L			01/19/23 10:31	1
Lead	0.167	J,DX	1.0	0.12	ug/L			01/19/23 10:31	1
Antimony	ND		2.0	0.36	ug/L			01/19/23 10:31	1
Selenium	ND		2.0	0.52	ug/L			01/19/23 10:31	1
Thallium	ND		1.0	0.11	ug/L			01/19/23 10:31	1
Zinc	ND		20	2.8	ug/L			01/19/23 10:31	1
Aluminum	ND		15	8.6	ug/L			01/19/23 10:31	1

Lab Sample ID: LCS 570-296798/2-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	80.0	75.2		ug/L		94	85 - 115
Arsenic	80.0	74.4		ug/L		93	85 - 115
Barium	80.0	73.6		ug/L		92	85 - 115
Beryllium	80.0	71.9		ug/L		90	85 - 115
Cadmium	80.0	74.3		ug/L		93	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-296798/2-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chromium	80.0	74.1		ug/L		93	85 - 115
Copper	80.0	74.4		ug/L		93	85 - 115
Iron	800	767		ug/L		96	85 - 115
Manganese	80.0	75.0		ug/L		94	85 - 115
Nickel	80.0	74.4		ug/L		93	85 - 115
Lead	80.0	74.0		ug/L		93	85 - 115
Antimony	80.0	75.2		ug/L		94	85 - 115
Selenium	80.0	72.8		ug/L		91	85 - 115
Thallium	80.0	74.0		ug/L		92	85 - 115
Zinc	80.0	74.2		ug/L		93	85 - 115
Aluminum	80.0	76.6		ug/L		96	85 - 115

Lab Sample ID: LCSD 570-296798/3-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	80.0	74.3		ug/L		93	85 - 115	1	20
Arsenic	80.0	74.3		ug/L		93	85 - 115	0	20
Barium	80.0	74.8		ug/L		93	85 - 115	2	20
Beryllium	80.0	74.9		ug/L		94	85 - 115	4	20
Cadmium	80.0	74.2		ug/L		93	85 - 115	0	20
Chromium	80.0	74.1		ug/L		93	85 - 115	0	20
Copper	80.0	74.8		ug/L		93	85 - 115	0	20
Iron	800	772		ug/L		97	85 - 115	1	20
Manganese	80.0	75.5		ug/L		94	85 - 115	1	20
Nickel	80.0	75.0		ug/L		94	85 - 115	1	20
Lead	80.0	76.2		ug/L		95	85 - 115	3	20
Antimony	80.0	75.8		ug/L		95	85 - 115	1	20
Selenium	80.0	73.5		ug/L		92	85 - 115	1	20
Thallium	80.0	75.5		ug/L		94	85 - 115	2	20
Zinc	80.0	74.3		ug/L		93	85 - 115	0	20
Aluminum	80.0	74.4		ug/L		93	85 - 115	3	20

Lab Sample ID: 570-124392-C-3-E MS
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	ND		80.0	75.6		ug/L		94	80 - 120
Arsenic	1.3		80.0	77.1		ug/L		95	80 - 120
Barium	9.1		80.0	84.9		ug/L		95	80 - 120
Beryllium	ND		80.0	75.7		ug/L		95	80 - 120
Cadmium	ND		80.0	74.9		ug/L		94	80 - 120
Chromium	0.41	J,DX	80.0	75.7		ug/L		94	80 - 120
Copper	4.8		80.0	79.6		ug/L		93	80 - 120
Iron	110		800	851		ug/L		93	80 - 120
Manganese	5.1		80.0	81.8		ug/L		96	80 - 120
Nickel	1.5	J,DX	80.0	76.8		ug/L		94	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124392-C-3-E MS
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	0.22	J,DX MB	80.0	74.4		ug/L		93	80 - 120
Antimony	0.55	J,DX	80.0	77.7		ug/L		96	80 - 120
Selenium	ND		80.0	75.3		ug/L		94	80 - 120
Thallium	ND		80.0	73.4		ug/L		92	80 - 120
Zinc	3.9	J,DX	80.0	76.7		ug/L		91	80 - 120
Aluminum	140		80.0	217		ug/L		97	80 - 120

Lab Sample ID: 570-124392-C-3-F MSD
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	ND		80.0	74.6		ug/L		93	80 - 120	1	20
Arsenic	1.3		80.0	76.6		ug/L		94	80 - 120	1	20
Barium	9.1		80.0	84.1		ug/L		94	80 - 120	1	20
Beryllium	ND		80.0	73.1		ug/L		91	80 - 120	3	20
Cadmium	ND		80.0	74.0		ug/L		92	80 - 120	1	20
Chromium	0.41	J,DX	80.0	74.4		ug/L		93	80 - 120	2	20
Copper	4.8		80.0	78.9		ug/L		93	80 - 120	1	20
Iron	110		800	848		ug/L		93	80 - 120	0	20
Manganese	5.1		80.0	79.4		ug/L		93	80 - 120	3	20
Nickel	1.5	J,DX	80.0	76.3		ug/L		94	80 - 120	1	20
Lead	0.22	J,DX MB	80.0	74.4		ug/L		93	80 - 120	0	20
Antimony	0.55	J,DX	80.0	76.8		ug/L		95	80 - 120	1	20
Selenium	ND		80.0	76.4		ug/L		95	80 - 120	1	20
Thallium	ND		80.0	74.3		ug/L		93	80 - 120	1	20
Zinc	3.9	J,DX	80.0	77.1		ug/L		91	80 - 120	1	20
Aluminum	140		80.0	212		ug/L		91	80 - 120	2	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-297946/11
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/23/23 13:11	1

Lab Sample ID: LCS 570-297946/14
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	267		ug/L		107	90 - 110

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: LCSD 570-297946/13
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	248		ug/L		99	90 - 110	7	20

Lab Sample ID: MRL 570-297946/10
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			5.00	4.66	J,DX	ug/L		93	50 - 150		

Lab Sample ID: 570-124243-S-1 MS
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total	ND		250	216		ug/L		86	70 - 130		

Lab Sample ID: 570-124243-S-1 MSD
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	227		ug/L		91	70 - 130	5	30

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-297433/1
Matrix: Water
Analysis Batch: 297433

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/20/23 13:11	1

Lab Sample ID: LCS 570-297433/2
Matrix: Water
Analysis Batch: 297433

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	98.0		mg/L		98	77 - 116		

Lab Sample ID: LCSD 570-297433/3
Matrix: Water
Analysis Batch: 297433

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	98.0		mg/L		98	77 - 116	0	10

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: 570-124252-1 DU
Matrix: Water
Analysis Batch: 297433

Client Sample ID: EPBLLC_011523
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	450			416		mg/L				8	10

GC/MS VOA

Analysis Batch: 296662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	624.1	
570-124252-2	EPBMC_011523	Total/NA	Water	624.1	
570-124252-3	EPBBC_011523	Total/NA	Water	624.1	
MB 570-296662/10	Method Blank	Total/NA	Water	624.1	
LCS 570-296662/4	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-296662/5	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 296476

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	625	
570-124252-2	EPBMC_011523	Total/NA	Water	625	
570-124252-3	EPBBC_011523	Total/NA	Water	625	
MB 570-296476/1-A	Method Blank	Total/NA	Water	625	
LCS 570-296476/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-296476/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 298807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-296476/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	296476
LCSD 570-296476/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	296476

Analysis Batch: 298809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	625.1 SIM	296476
570-124252-2	EPBMC_011523	Total/NA	Water	625.1 SIM	296476
570-124252-3	EPBBC_011523	Total/NA	Water	625.1 SIM	296476

Analysis Batch: 299094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296476/1-A	Method Blank	Total/NA	Water	625.1 SIM	296476

HPLC/IC

Analysis Batch: 296556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	218.6	296615
570-124252-1	EPBLLC_011523	Total/NA	Water	218.6	
570-124252-2	EPBMC_011523	Dissolved	Water	218.6	296615
570-124252-2	EPBMC_011523	Total/NA	Water	218.6	
570-124252-3	EPBBC_011523	Dissolved	Water	218.6	296615
570-124252-3	EPBBC_011523	Total/NA	Water	218.6	
MB 570-296556/31	Method Blank	Total/NA	Water	218.6	
MB 570-296615/1-A	Method Blank	Dissolved	Water	218.6	296615
LCS 570-296556/32	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-296615/2-A	Lab Control Sample	Dissolved	Water	218.6	296615
LCSD 570-296556/33	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-296615/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	296615
570-124252-1 MS	EPBLLC_011523	Dissolved	Water	218.6	296615
570-124252-1 MS	EPBLLC_011523	Total/NA	Water	218.6	
570-124252-1 MSD	EPBLLC_011523	Dissolved	Water	218.6	296615

HPLC/IC (Continued)

Analysis Batch: 296556 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1 MSD	EPBLLC_011523	Total/NA	Water	218.6	

Filtration Batch: 296615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	Filtration	
570-124252-2	EPBMC_011523	Dissolved	Water	Filtration	
570-124252-3	EPBBC_011523	Dissolved	Water	Filtration	
MB 570-296615/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296615/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296615/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124252-1 MS	EPBLLC_011523	Dissolved	Water	Filtration	
570-124252-1 MSD	EPBLLC_011523	Dissolved	Water	Filtration	

Analysis Batch: 296623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	300.0	
570-124252-2	EPBMC_011523	Total/NA	Water	300.0	
570-124252-3	EPBBC_011523	Total/NA	Water	300.0	
MB 570-296623/5	Method Blank	Total/NA	Water	300.0	
LCS 570-296623/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-296623/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124482-J-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MS - DL	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
570-124482-J-1 MSD - DL	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 296624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	300.0	
570-124252-1 - DL	EPBLLC_011523	Total/NA	Water	300.0	
570-124252-2	EPBMC_011523	Total/NA	Water	300.0	
570-124252-2 - DL	EPBMC_011523	Total/NA	Water	300.0	
570-124252-3	EPBBC_011523	Total/NA	Water	300.0	
MB 570-296624/5	Method Blank	Total/NA	Water	300.0	
LCS 570-296624/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-296624/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124482-J-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MS - DL	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
570-124482-J-1 MSD - DL	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 297043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	314.0	
570-124252-2	EPBMC_011523	Total/NA	Water	314.0	
570-124252-3	EPBBC_011523	Total/NA	Water	314.0	
MB 570-297043/7	Method Blank	Total/NA	Water	314.0	
LCS 570-297043/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-297043/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-124466-C-9 MS	Matrix Spike	Total/NA	Water	314.0	
570-124466-C-9 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Metals

Filtration Batch: 296797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	Filtration	
570-124252-2	EPBMC_011523	Dissolved	Water	Filtration	
570-124252-3	EPBBC_011523	Dissolved	Water	Filtration	
MB 570-296797/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296797/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296797/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124392-C-3-B MS	Matrix Spike	Dissolved	Water	Filtration	
570-124392-C-3-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 296798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	Filtration	
570-124252-2	EPBMC_011523	Dissolved	Water	Filtration	
570-124252-3	EPBBC_011523	Dissolved	Water	Filtration	
MB 570-296798/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124392-C-3-E MS	Matrix Spike	Dissolved	Water	Filtration	
570-124392-C-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 297048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	200.8	296798
570-124252-2	EPBMC_011523	Dissolved	Water	200.8	296798
570-124252-3	EPBBC_011523	Dissolved	Water	200.8	296798
MB 570-296798/1-A	Method Blank	Dissolved	Water	200.8	296798
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	200.8	296798
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	296798
570-124392-C-3-E MS	Matrix Spike	Dissolved	Water	200.8	296798
570-124392-C-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	296798

Prep Batch: 297274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total Recoverable	Water	200.7	
570-124252-2	EPBMC_011523	Total Recoverable	Water	200.7	
570-124252-3	EPBBC_011523	Total Recoverable	Water	200.7	
MB 570-297274/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-297274/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-297274/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-124382-B-1-B MS	Matrix Spike	Total Recoverable	Water	200.7	
570-124382-B-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Prep Batch: 297278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total Recoverable	Water	200.8	
570-124252-2	EPBMC_011523	Total Recoverable	Water	200.8	
570-124252-3	EPBBC_011523	Total Recoverable	Water	200.8	
MB 570-297278/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-297278/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-297278/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-124392-F-1-H MS	Matrix Spike	Total Recoverable	Water	200.8	

Metals (Continued)

Prep Batch: 297278 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-F-1-I MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 297291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	200.7 Rev 4.4	296797
570-124252-2	EPBMC_011523	Dissolved	Water	200.7 Rev 4.4	296797
570-124252-3	EPBBC_011523	Dissolved	Water	200.7 Rev 4.4	296797
MB 570-296797/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	296797
LCS 570-296797/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	296797
LCSD 570-296797/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	296797
570-124392-C-3-B MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	296797
570-124392-C-3-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	296797

Analysis Batch: 297371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total Recoverable	Water	200.8	297278
570-124252-2	EPBMC_011523	Total Recoverable	Water	200.8	297278
570-124252-3	EPBBC_011523	Total Recoverable	Water	200.8	297278
MB 570-297278/1-A	Method Blank	Total Recoverable	Water	200.8	297278
LCS 570-297278/2-A	Lab Control Sample	Total Recoverable	Water	200.8	297278
LCSD 570-297278/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	297278
570-124392-F-1-H MS	Matrix Spike	Total Recoverable	Water	200.8	297278
570-124392-F-1-I MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	297278

Analysis Batch: 297463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total Recoverable	Water	200.7 Rev 4.4	297274
570-124252-2	EPBMC_011523	Total Recoverable	Water	200.7 Rev 4.4	297274
570-124252-3	EPBBC_011523	Total Recoverable	Water	200.7 Rev 4.4	297274
MB 570-297274/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	297274
LCS 570-297274/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	297274
LCSD 570-297274/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	297274
570-124382-B-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	297274
570-124382-B-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	297274

General Chemistry

Analysis Batch: 297433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	SM 2540D	
570-124252-2	EPBMC_011523	Total/NA	Water	SM 2540D	
570-124252-3	EPBBC_011523	Total/NA	Water	SM 2540D	
MB 570-297433/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-297433/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-297433/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-124252-1 DU	EPBLLC_011523	Total/NA	Water	SM 2540D	

Analysis Batch: 297946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	Kelada 01	
570-124252-2	EPBMC_011523	Total/NA	Water	Kelada 01	

General Chemistry (Continued)

Analysis Batch: 297946 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-3	EPBBC_011523	Total/NA	Water	Kelada 01	
MB 570-297946/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-297946/14	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-297946/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-297946/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-124243-S-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-124243-S-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 298235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	218.6 CR3	
570-124252-2	EPBMC_011523	Total/NA	Water	218.6 CR3	
570-124252-3	EPBBC_011523	Total/NA	Water	218.6 CR3	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Client Sample ID: EPBLLC_011523

Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		4	5 mL	5 mL	296662	01/18/23 12:28	OH1	EET CAL 4
	Instrument ID: GCMSW									
Total/NA	Prep	625			1011.3 mL	2 mL	296476	01/18/23 12:55	UM1W	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	298809	01/26/23 17:58	ULLI	EET CAL 4
	Instrument ID: GCMSEEE									
Dissolved	Filtration	Filtration			100 mL	100 mL	296615	01/18/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	296556	01/18/23 07:27	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	296556	01/18/23 05:28	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296623	01/18/23 08:42	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296624	01/18/23 08:42	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0	DL	20	4 mL	4 mL	296624	01/18/23 14:20	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	297043	01/20/23 09:25	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	296797	01/18/23 13:25	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			297291	01/20/23 02:37	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	297274	01/20/23 06:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			297463	01/20/23 16:43	VZ0K	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	296798	01/18/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			297048	01/19/23 10:44	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	297278	01/20/23 06:26	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297371	01/20/23 10:18	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			298235	01/24/23 15:25	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	297946	01/23/23 14:38	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	200 mL	1000 mL	297433	01/20/23 13:11	UWCT	EET CAL 4
	Instrument ID: BAL62									

Client Sample ID: EPBMC_011523

Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		4	5 mL	5 mL	296662	01/18/23 12:49	OH1	EET CAL 4
	Instrument ID: GCMSW									

Client Sample ID: EPBMC_011523

Lab Sample ID: 570-124252-2

Date Collected: 01/15/23 08:55

Matrix: Water

Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1016.3 mL	2 mL	296476	01/18/23 12:55	UM1W	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	298809	01/26/23 18:19	ULLI	EET CAL 4
	Instrument ID: GCMSEEE									
Dissolved	Filtration	Filtration			100 mL	100 mL	296615	01/18/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	296556	01/18/23 07:40	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	296556	01/18/23 05:40	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296623	01/18/23 10:57	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296624	01/18/23 10:57	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0	DL	10	4 mL	4 mL	296624	01/18/23 14:37	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	297043	01/20/23 09:44	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	296797	01/18/23 13:25	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			297291	01/20/23 02:39	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	297274	01/20/23 06:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			297463	01/20/23 16:45	VZ0K	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	296798	01/18/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			297048	01/19/23 10:46	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	297278	01/20/23 06:26	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297371	01/20/23 10:20	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			298235	01/24/23 15:25	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	297946	01/23/23 14:45	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	300 mL	1000 mL	297433	01/20/23 13:11	UWCT	EET CAL 4
	Instrument ID: BAL62									

Client Sample ID: EPBBC_011523

Lab Sample ID: 570-124252-3

Date Collected: 01/15/23 07:20

Matrix: Water

Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		4	5 mL	5 mL	296662	01/18/23 13:11	OH1	EET CAL 4
	Instrument ID: GCMSW									
Total/NA	Prep	625			966.6 mL	2 mL	296476	01/18/23 12:55	UM1W	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	298809	01/26/23 18:40	ULLI	EET CAL 4
	Instrument ID: GCMSEEE									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Client Sample ID: EPBBC_011523

Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			100 mL	100 mL	296615	01/18/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	296556	01/18/23 07:52	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	296556	01/18/23 05:52	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296623	01/18/23 11:13	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296624	01/18/23 11:13	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	297043	01/20/23 10:03	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	296797	01/18/23 13:25	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			297291	01/20/23 02:51	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	297274	01/20/23 06:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			297463	01/20/23 16:47	VZ0K	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	296798	01/18/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			297048	01/19/23 09:15	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	297278	01/20/23 06:26	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297371	01/20/23 10:22	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			298235	01/24/23 15:25	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	297946	01/23/23 14:51	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	297433	01/20/23 13:11	UWCT	EET CAL 4
	Instrument ID: BAL62									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124252-1	EPBLLC_011523	Water	01/15/23 08:05	01/17/23 18:25
570-124252-2	EPBMC_011523	Water	01/15/23 08:55	01/17/23 18:25
570-124252-3	EPBBC_011523	Water	01/15/23 07:20	01/17/23 18:25

124252

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

Eurofins Calscience, Inc.

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. Dominick	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8505	Lab Contact: Virendra Patel (714) 895-5494	Carrier	of COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☑ 2 days ☐ 1 day			
H&A Project Number 129095-010-001-08				
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds				
H&A P O #				

Add Al to Method 200.8 total and dissolved analysis. (KR 2/8/2023)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E908.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn; – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must filter TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
1 EPBLLC_011523	1-15-23	0805	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2 EPBMC_011523	1-15-23	0855	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3 EPBBC_011523	1-15-23	0720	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBCC_			G	WM	21																					
EPB_VC			G	WM	21																					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyald..com and post to ...otal Access. Bill to Haley & Aldrich at AP@haleyaldrich.com Report ...ev... Data Package and provide EDD. All dissolv... samples are to be filte...d with 24 h...urs of rece...e...en those p...aced on hold ...ow l...mits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:		
Relinquished by: Michelle Gallardo	Company: H&A	Date/Time: 1-17-23 1245	Received by:	Date/Time:
Relinquished by:	Company: EC	Date/Time: 1/17/23 1825	Received by: EC	Date/Time: 1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.9/1.9 2.1/2.1 1.8/1.8 SCII

570-124252 Chain of Custody

SAP COC 2019/2020 VERSION 3

2/13/2023

124252

eurofins

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. Dominick	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8505	Lab Contact: Virendra Patel (714) 395-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E908.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn; – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
									2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
1	EPBLLC_011523	1-15-23	0805	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2	EPBMC_011523	1-15-23	0855	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3	EPBBC_011523	1-15-23	0720	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	EPBC_			G	WM	21																				MS MSD
	EPB_VC			G	WM	21																				
	Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyald..h.com and post to ..otal Acce-s, B..r to Haley & Aldrich at AP@ha..eyaldrich.com Report ..ev.. Data Package and provide EDD.. Al..d ..ssolv.. samples are to be filte..d with 24 h..urs of rece..p.. even those p..aced on hold ..ow l..mits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____		
Relinquished by: Michelle Dallabetta	Company: H&A	Date/Time: 1-17-23 1245	Received by:	Date/Time: 1/17/23 1245
Relinquished by:	Company: EC	Date/Time: 1/17/23 1825	Received by:	Date/Time: 1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.9/1.9 2.1/2.1 1.8/1.8 SCII

570-124252 Chain of Custody

SAP COC 2019/2020 VERSION 3

2/13/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No. 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin. California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124252-3
Address: 5755 8th Street East, ,	Due Date Requested 2/6/2023			
City: Tacoma	TAT Requested (days)			
State, Zip WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_011523 (570-124252-1)	1/15/23	08 05 Pacific		Water			X	X	2	
EPBMC_011523 (570-124252-2)	1/15/23	08 55 Pacific		Water			X	X	2	
EPBBC_011523 (570-124252-3)	1/15/23	07 20 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals BMP Performance

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the BMP Performance program starting from data collected October 1st, 2022.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124252-1

Login Number: 124252
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/13/2023 3:28:02 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124252-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

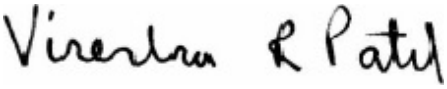
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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2/13/2023 3:28:02 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124252-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124252-2

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3), (CCV 320-651969/2) and (MB 320-651189/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: EPBLLC_011523 (570-124252-1), (CCV 320-652285/2) and (MB 320-650862/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-2

Client Sample ID: EPBLLC_011523 — Lab Sample ID: 570-124252-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000047	J,DX MB q	0.000049	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.00000046	J,DX MB q	0.000049	0.00000014	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000051	J,DX MB	0.000049	0.00000017	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000021	J,DX MB q	0.000049	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000075	J,DX MB	0.000049	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000068	J,DX MB q	0.000049	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000080	J,DX MB	0.000049	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000043	J,DX MB q	0.000049	0.00000011	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000055	J,DX MB	0.000049	0.00000011	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000036	J,DX MB	0.000049	0.000000093	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000030	J,DX MB	0.000049	0.00000017	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000014	J,DX MB q	0.000049	0.00000028	ug/L	1		1613B	Total/NA
OCDD	0.000017	J,DX MB	0.000097	0.00000031	ug/L	1		1613B	Total/NA
OCDF	0.0000015	J,DX MB	0.000097	0.00000015	ug/L	1		1613B	Total/NA
Total TCDD	0.0000015	J,DX MB q	0.0000097	0.00000027	ug/L	1		1613B	Total/NA
Total TCDF	0.00000062	J,DX MB q	0.0000097	0.00000011	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000078	J,DX MB q	0.000049	0.00000021	ug/L	1		1613B	Total/NA
Total PeCDF	0.00000097	J,DX MB q	0.000049	0.00000014	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000035	J,DX MB q	0.000049	0.00000019	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000021	J,DX MB q	0.000049	0.000000093	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000062	J,DX MB	0.000049	0.00000017	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000014	J,DX MB q	0.000049	0.00000028	ug/L	1		1613B	Total/NA

Client Sample ID: EPBMC_011523 — Lab Sample ID: 570-124252-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000096	J,DX	0.000050	0.00000027	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.00000088	J,DX MB	0.000050	0.00000016	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000085	J,DX	0.000050	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000026	J,DX q MB	0.000050	0.00000024	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000011	J,DX	0.000050	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000012	J,DX MB	0.000050	0.00000021	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample ID: EPBMC_011523 (Continued)

Lab Sample ID: 570-124252-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDF	0.0000012	J,DX MB	0.000050	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000092	J,DX MB	0.000050	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000013	J,DX MB	0.000050	0.00000020	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000075	J,DX q MB	0.000050	0.00000017	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000026	J,DX MB	0.000050	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000019	J,DX q MB	0.000050	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000083	J,DX q MB	0.000050	0.00000023	ug/L	1		1613B	Total/NA
OCDD	0.0000080	J,DX MB	0.000099	0.00000036	ug/L	1		1613B	Total/NA
OCDF	0.0000045	J,DX MB	0.000099	0.00000023	ug/L	1		1613B	Total/NA
Total TCDD	0.0000025	J,DX q MB	0.0000099	0.00000036	ug/L	1		1613B	Total/NA
Total TCDF	0.00000084	J,DX q MB	0.0000099	0.00000015	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000096	J,DX MB	0.000050	0.00000027	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000017	J,DX MB	0.000050	0.00000016	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000052	J,DX q MB	0.000050	0.00000021	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000041	J,DX q MB	0.000050	0.00000017	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000045	J,DX q MB	0.000050	0.00000016	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000027	J,DX q MB	0.000050	0.00000022	ug/L	1		1613B	Total/NA

Client Sample ID: EPBBC_011523

Lab Sample ID: 570-124252-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.00000033	J,DX MB	0.000049	0.00000013	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000033	J,DX q	0.000049	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000021	J,DX MB	0.000049	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000046	J,DX q	0.000049	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000049	J,DX MB	0.000049	0.00000017	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000042	J,DX q MB	0.000049	0.00000013	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000020	J,DX q MB	0.000049	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000049	J,DX MB	0.000049	0.00000013	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000027	J,DX q MB	0.000049	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000087	J,DX MB	0.000049	0.00000045	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPBBC_011523 (Continued)

Lab Sample ID: 570-124252-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDF	0.0000026	J,DX MB	0.000049	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000031	J,DX q MB	0.000049	0.00000023	ug/L	1		1613B	Total/NA
OCDD	0.000091	J,DX MB	0.000098	0.00000086	ug/L	1		1613B	Total/NA
OCDF	0.0000087	J,DX MB	0.000098	0.00000022	ug/L	1		1613B	Total/NA
Total TCDD	0.0000026	J,DX MB	0.0000098	0.00000037	ug/L	1		1613B	Total/NA
Total TCDF	0.0000014	J,DX q MB	0.0000098	0.00000014	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000031	J,DX q MB	0.000049	0.00000020	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000013	J,DX q MB	0.000049	0.00000013	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000049	J,DX q MB	0.000049	0.00000017	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000027	J,DX q MB	0.000049	0.00000012	ug/L	1		1613B	Total/NA
Total HpCDD	0.000018	J,DX q MB	0.000049	0.00000045	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000075	J,DX q MB	0.000049	0.00000020	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000097	0.00000027	ug/L		02/01/23 06:04	02/06/23 21:21	1
1,2,3,7,8-PeCDD	**0.00000047**	**J,DX MB q**	0.000049	0.00000021	ug/L		02/01/23 06:04	02/06/23 21:21	1
1,2,3,7,8-PeCDF	**0.00000046**	**J,DX MB q**	0.000049	0.00000014	ug/L		02/01/23 06:04	02/06/23 21:21	1
2,3,4,7,8-PeCDF	**0.00000051**	**J,DX MB**	0.000049	0.00000017	ug/L		02/01/23 06:04	02/06/23 21:21	1
1,2,3,4,7,8-HxCDD	**0.0000021**	**J,DX MB q**	0.000049	0.00000022	ug/L		02/01/23 06:04	02/06/23 21:21	1
1,2,3,6,7,8-HxCDD	**0.00000075**	**J,DX MB**	0.000049	0.00000021	ug/L		02/01/23 06:04	02/06/23 21:21	1
1,2,3,7,8,9-HxCDD	**0.00000068**	**J,DX MB q**	0.000049	0.00000019	ug/L		02/01/23 06:04	02/06/23 21:21	1
1,2,3,4,7,8-HxCDF	**0.00000080**	**J,DX MB**	0.000049	0.00000012	ug/L		02/01/23 06:04	02/06/23 21:21	1
1,2,3,6,7,8-HxCDF	**0.00000043**	**J,DX MB q**	0.000049	0.00000011	ug/L		02/01/23 06:04	02/06/23 21:21	1
1,2,3,7,8,9-HxCDF	**0.00000055**	**J,DX MB**	0.000049	0.00000011	ug/L		02/01/23 06:04	02/06/23 21:21	1
2,3,4,6,7,8-HxCDF	**0.00000036**	**J,DX MB**	0.000049	0.0000000093	ug/L		02/01/23 06:04	02/06/23 21:21	1
1,2,3,4,6,7,8-HpCDD	**0.0000030**	**J,DX MB**	0.000049	0.00000017	ug/L		02/01/23 06:04	02/06/23 21:21	1
1,2,3,4,6,7,8-HpCDF	**0.0000014**	**J,DX MB q**	0.000049	0.00000028	ug/L		02/01/23 06:04	02/06/23 21:21	1
1,2,3,4,7,8,9-HpCDF	ND		0.000049	0.00000029	ug/L		02/01/23 06:04	02/06/23 21:21	1
OCDD	**0.000017**	**J,DX MB**	0.000097	0.00000031	ug/L		02/01/23 06:04	02/06/23 21:21	1
OCDF	**0.0000015**	**J,DX MB**	0.000097	0.00000015	ug/L		02/01/23 06:04	02/06/23 21:21	1
Total TCDD	**0.0000015**	**J,DX MB q**	0.0000097	0.00000027	ug/L		02/01/23 06:04	02/06/23 21:21	1
Total TCDF	**0.00000062**	**J,DX MB q**	0.0000097	0.00000011	ug/L		02/01/23 06:04	02/06/23 21:21	1
Total PeCDD	**0.00000078**	**J,DX MB q**	0.000049	0.00000021	ug/L		02/01/23 06:04	02/06/23 21:21	1
Total PeCDF	**0.00000097**	**J,DX MB q**	0.000049	0.00000014	ug/L		02/01/23 06:04	02/06/23 21:21	1
Total HxCDD	**0.0000035**	**J,DX MB q**	0.000049	0.00000019	ug/L		02/01/23 06:04	02/06/23 21:21	1
Total HxCDF	**0.0000021**	**J,DX MB q**	0.000049	0.0000000093	ug/L		02/01/23 06:04	02/06/23 21:21	1
Total HpCDD	**0.0000062**	**J,DX MB**	0.000049	0.00000017	ug/L		02/01/23 06:04	02/06/23 21:21	1
Total HpCDF	**0.0000014**	**J,DX MB q**	0.000049	0.00000028	ug/L		02/01/23 06:04	02/06/23 21:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*05*		*25 - 106*	*42/41/23 40:46*	*42/40/23 21:21*	*1*
13C-2,3,7,8-TCDF	*03*		*26 - 109*	*42/41/23 40:46*	*42/40/23 21:21*	*1*
13C-1,2,3,7,8-PeCDD	*07*		*25 - 181*	*42/41/23 40:46*	*42/40/23 21:21*	*1*
13C-1,2,3,7,8-PeCDF	*07*		*26 - 185*	*42/41/23 40:46*	*42/40/23 21:21*	*1*
13C-2,3,6,7,8-PeCDF	*02*		*21 - 178*	*42/41/23 40:46*	*42/40/23 21:21*	*1*
13C-1,2,3,6,7,8-HxCDD	*03*		*32 - 161*	*42/41/23 40:46*	*42/40/23 21:21*	*1*
13C-1,2,3,0,7,8-HxCDD	*00*		*28 - 134*	*42/41/23 40:46*	*42/40/23 21:21*	*1*
13C-1,2,3,6,7,8-HxCDF	*58*		*20 - 152*	*42/41/23 40:46*	*42/40/23 21:21*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,0,7,8-HxCDF	07		20 - 123	42/41/23 40:46	42/40/23 21:21	1
13C-1,2,3,7,8,9-HxCDF	75		29 - 167	42/41/23 40:46	42/40/23 21:21	1
13C-2,3,6,0,7,8-HxCDF	75		28 - 130	42/41/23 40:46	42/40/23 21:21	1
13C-1,2,3,6,0,7,8-HpCDD	74		23 - 164	42/41/23 40:46	42/40/23 21:21	1
13C-1,2,3,6,0,7,8-HpCDF	03		28 - 163	42/41/23 40:46	42/40/23 21:21	1
13C-1,2,3,6,7,8,9-HpCDF	72		20 - 138	42/41/23 40:46	42/40/23 21:21	1
13C-OCDD	07		17 - 157	42/41/23 40:46	42/40/23 21:21	1
13C-OCDF	00		17 - 157	42/41/23 40:46	42/40/23 21:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	81		35 - 197	42/41/23 40:46	42/40/23 21:21	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000099	0.00000036	ug/L		02/02/23 06:24	02/05/23 17:53	1
1,2,3,7,8-PeCDD	**0.00000096**	**J,DX**	0.000050	0.00000027	ug/L		02/02/23 06:24	02/05/23 17:53	1
1,2,3,7,8-PeCDF	**0.00000088**	**J,DX MB**	0.000050	0.00000016	ug/L		02/02/23 06:24	02/05/23 17:53	1
2,3,4,7,8-PeCDF	**0.00000085**	**J,DX**	0.000050	0.00000019	ug/L		02/02/23 06:24	02/05/23 17:53	1
1,2,3,4,7,8-HxCDD	**0.0000026**	**J,DX q MB**	0.000050	0.00000024	ug/L		02/02/23 06:24	02/05/23 17:53	1
1,2,3,6,7,8-HxCDD	**0.0000011**	**J,DX**	0.000050	0.00000023	ug/L		02/02/23 06:24	02/05/23 17:53	1
1,2,3,7,8,9-HxCDD	**0.0000012**	**J,DX MB**	0.000050	0.00000021	ug/L		02/02/23 06:24	02/05/23 17:53	1
1,2,3,4,7,8-HxCDF	**0.0000012**	**J,DX MB**	0.000050	0.00000022	ug/L		02/02/23 06:24	02/05/23 17:53	1
1,2,3,6,7,8-HxCDF	**0.00000092**	**J,DX MB**	0.000050	0.00000019	ug/L		02/02/23 06:24	02/05/23 17:53	1
1,2,3,7,8,9-HxCDF	**0.0000013**	**J,DX MB**	0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 17:53	1
2,3,4,6,7,8-HxCDF	**0.00000075**	**J,DX q MB**	0.000050	0.00000017	ug/L		02/02/23 06:24	02/05/23 17:53	1
1,2,3,4,6,7,8-HpCDD	**0.0000026**	**J,DX MB**	0.000050	0.00000016	ug/L		02/02/23 06:24	02/05/23 17:53	1
1,2,3,4,6,7,8-HpCDF	**0.0000019**	**J,DX q MB**	0.000050	0.00000022	ug/L		02/02/23 06:24	02/05/23 17:53	1
1,2,3,4,7,8,9-HpCDF	**0.00000083**	**J,DX q MB**	0.000050	0.00000023	ug/L		02/02/23 06:24	02/05/23 17:53	1
OCDD	**0.0000080**	**J,DX MB**	0.000099	0.00000036	ug/L		02/02/23 06:24	02/05/23 17:53	1
OCDF	**0.0000045**	**J,DX MB**	0.000099	0.00000023	ug/L		02/02/23 06:24	02/05/23 17:53	1
Total TCDD	**0.0000025**	**J,DX q MB**	0.0000099	0.00000036	ug/L		02/02/23 06:24	02/05/23 17:53	1
Total TCDF	**0.00000084**	**J,DX q MB**	0.0000099	0.00000015	ug/L		02/02/23 06:24	02/05/23 17:53	1
Total PeCDD	**0.00000096**	**J,DX MB**	0.000050	0.00000027	ug/L		02/02/23 06:24	02/05/23 17:53	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total PeCDF	**0.0000017**	**J,DX MB**	0.000050	0.00000016	ug/L		02/02/23 06:24	02/05/23 17:53	1
Total HxCDD	**0.0000052**	**J,DX q MB**	0.000050	0.00000021	ug/L		02/02/23 06:24	02/05/23 17:53	1
Total HxCDF	**0.0000041**	**J,DX q MB**	0.000050	0.00000017	ug/L		02/02/23 06:24	02/05/23 17:53	1
Total HpCDD	**0.0000045**	**J,DX q MB**	0.000050	0.00000016	ug/L		02/02/23 06:24	02/05/23 17:53	1
Total HpCDF	**0.0000027**	**J,DX q MB**	0.000050	0.00000022	ug/L		02/02/23 06:24	02/05/23 17:53	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*25 - 106*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-2,3,7,8-TCDF	*78*		*26 - 109*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-1,2,3,7,8-PeCDD	*82*		*25 - 181*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-1,2,3,7,8-PeCDF	*81*		*26 - 185*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-2,3,6,7,8-PeCDF	*70*		*21 - 178*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-1,2,3,6,7,8-HxCDD	*74*		*32 - 161*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-1,2,3,0,7,8-HxCDD	*84*		*28 - 134*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-1,2,3,6,7,8-HxCDF	*00*		*20 - 152*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-1,2,3,0,7,8-HxCDF	*79*		*20 - 123*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-1,2,3,7,8,9-HxCDF	*83*		*29 - 167*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-2,3,6,0,7,8-HxCDF	*86*		*28 - 130*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-1,2,3,6,0,7,8-HpCDD	*84*		*23 - 164*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-1,2,3,6,0,7,8-HpCDF	*73*		*28 - 163*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-1,2,3,6,7,8,9-HpCDF	*84*		*20 - 138*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-OCDD	*84*		*17 - 157*	*42/42/23 40:26*	*42/45/23 17:53*	*1*
13C-OCDF	*84*		*17 - 157*	*42/42/23 40:26*	*42/45/23 17:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*94*		*35 - 197*	*42/42/23 40:26*	*42/45/23 17:53*	*1*

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000098	0.00000037	ug/L		02/02/23 06:24	02/05/23 18:40	1
1,2,3,7,8-PeCDD	ND		0.000049	0.00000020	ug/L		02/02/23 06:24	02/05/23 18:40	1
1,2,3,7,8-PeCDF	**0.00000033**	**J,DX MB**	0.000049	0.00000013	ug/L		02/02/23 06:24	02/05/23 18:40	1
2,3,4,7,8-PeCDF	**0.00000033**	**J,DX q**	0.000049	0.00000014	ug/L		02/02/23 06:24	02/05/23 18:40	1
1,2,3,4,7,8-HxCDD	**0.0000021**	**J,DX MB**	0.000049	0.00000019	ug/L		02/02/23 06:24	02/05/23 18:40	1
1,2,3,6,7,8-HxCDD	**0.00000046**	**J,DX q**	0.000049	0.00000020	ug/L		02/02/23 06:24	02/05/23 18:40	1
1,2,3,7,8,9-HxCDD	**0.00000049**	**J,DX MB**	0.000049	0.00000017	ug/L		02/02/23 06:24	02/05/23 18:40	1
1,2,3,4,7,8-HxCDF	**0.00000042**	**J,DX q MB**	0.000049	0.00000013	ug/L		02/02/23 06:24	02/05/23 18:40	1
1,2,3,6,7,8-HxCDF	**0.00000020**	**J,DX q MB**	0.000049	0.00000012	ug/L		02/02/23 06:24	02/05/23 18:40	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8,9-HxCDF	0.00000049	J,DX MB	0.000049	0.00000013	ug/L		02/02/23 06:24	02/05/23 18:40	1
2,3,4,6,7,8-HxCDF	0.00000027	J,DX q MB	0.000049	0.00000012	ug/L		02/02/23 06:24	02/05/23 18:40	1
1,2,3,4,6,7,8-HpCDD	0.0000087	J,DX MB	0.000049	0.00000045	ug/L		02/02/23 06:24	02/05/23 18:40	1
1,2,3,4,6,7,8-HpCDF	0.0000026	J,DX MB	0.000049	0.00000020	ug/L		02/02/23 06:24	02/05/23 18:40	1
1,2,3,4,7,8,9-HpCDF	0.00000031	J,DX q MB	0.000049	0.00000023	ug/L		02/02/23 06:24	02/05/23 18:40	1
OCDD	0.000091	J,DX MB	0.000098	0.00000086	ug/L		02/02/23 06:24	02/05/23 18:40	1
OCDF	0.0000087	J,DX MB	0.000098	0.00000022	ug/L		02/02/23 06:24	02/05/23 18:40	1
Total TCDD	0.0000026	J,DX MB	0.0000098	0.00000037	ug/L		02/02/23 06:24	02/05/23 18:40	1
Total TCDF	0.0000014	J,DX q MB	0.0000098	0.00000014	ug/L		02/02/23 06:24	02/05/23 18:40	1
Total PeCDD	0.00000031	J,DX q MB	0.000049	0.00000020	ug/L		02/02/23 06:24	02/05/23 18:40	1
Total PeCDF	0.0000013	J,DX q MB	0.000049	0.00000013	ug/L		02/02/23 06:24	02/05/23 18:40	1
Total HxCDD	0.0000049	J,DX q MB	0.000049	0.00000017	ug/L		02/02/23 06:24	02/05/23 18:40	1
Total HxCDF	0.0000027	J,DX q MB	0.000049	0.00000012	ug/L		02/02/23 06:24	02/05/23 18:40	1
Total HpCDD	0.000018	J,DX q MB	0.000049	0.00000045	ug/L		02/02/23 06:24	02/05/23 18:40	1
Total HpCDF	0.0000075	J,DX q MB	0.000049	0.00000020	ug/L		02/02/23 06:24	02/05/23 18:40	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*81*		*25 - 106*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-2,3,7,8-TCDF	*84*		*26 - 109*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*25 - 181*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-1,2,3,7,8-PeCDF	*85*		*26 - 185*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-2,3,6,7,8-PeCDF	*85*		*21 - 178*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-1,2,3,6,7,8-HxCDD	*86*		*32 - 161*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-1,2,3,0,7,8-HxCDD	*88*		*28 - 134*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-1,2,3,6,7,8-HxCDF	*79*		*20 - 152*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-1,2,3,0,7,8-HxCDF	*94*		*20 - 123*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-1,2,3,7,8,9-HxCDF	*88*		*29 - 167*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-2,3,6,0,7,8-HxCDF	*89*		*28 - 130*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-1,2,3,6,0,7,8-HpCDD	*85*		*23 - 164*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-1,2,3,6,0,7,8-HpCDF	*81*		*28 - 163*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-1,2,3,6,7,8,9-HpCDF	*85*		*20 - 138*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-OCDD	*80*		*17 - 157*	*42/42/23 40:26*	*42/45/23 18:64*	*1*
13C-OCDF	*85*		*17 - 157*	*42/42/23 40:26*	*42/45/23 18:64*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*94*		*35 - 197*	*42/42/23 40:26*	*42/45/23 18:64*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000097	0.00000042	ug/L		02/01/23 06:04	02/07/23 17:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*01*		*26 - 109*	*42/41/23 40:46*	*42/47/23 17:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*96*		*35 - 197*	*42/41/23 40:46*	*42/47/23 17:32*	*1*

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000099	0.00000041	ug/L		02/02/23 06:24	02/06/23 13:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*79*		*26 - 109*	*42/42/23 40:26*	*42/40/23 13:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*111*		*35 - 197*	*42/42/23 40:26*	*42/40/23 13:19*	*1*

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000098	0.00000032	ug/L		02/02/23 06:24	02/06/23 14:21	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*79*		*26 - 109*	*42/42/23 40:26*	*42/40/23 16:21*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*140*		*35 - 197*	*42/42/23 40:26*	*42/40/23 16:21*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-124252-1	EPBLLC_011523	81
570-124252-1 - RA	EPBLLC_011523	94
570-124252-2	EPBMC_011523	90
570-124252-2 - RA	EPBMC_011523	111
570-124252-3	EPBBC_011523	90
570-124252-3 - RA	EPBBC_011523	106
MB 320-650862/1-A	Method Blank	82
MB 320-650862/1-A - RA	Method Blank	95
MB 320-651189/1-A	Method Blank	93
MB 320-651189/1-A - RA	Method Blank	107

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-650862/2-A	Lab Control Sample	83
LCS 320-651189/2-A	Lab Control Sample	90
LCSD 320-650862/3-A	Lab Control Sample Dup	79
LCSD 320-651189/3-A	Lab Control Sample Dup	92

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-124252-1	EPBLLC_011523	65	63	67	67	62	63	66	58
570-124252-1 - RA	EPBLLC_011523		61						
570-124252-2	EPBMC_011523	79	78	82	81	76	70	80	66
570-124252-2 - RA	EPBMC_011523		79						
570-124252-3	EPBBC_011523	81	80	85	85	85	84	88	79
570-124252-3 - RA	EPBBC_011523		79						
MB 320-650862/1-A	Method Blank	61	60	63	63	64	62	66	57
MB 320-650862/1-A - RA	Method Blank		59						
MB 320-651189/1-A	Method Blank	60	61	58	57	56	46	55	45
MB 320-651189/1-A - RA	Method Blank		60						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-124252-1	EPBLLC_011523	67	75	75	70	63	72	67	66
570-124252-1 - RA	EPBLLC_011523								
570-124252-2	EPBMC_011523	79	83	84	80	73	80	80	80
570-124252-2 - RA	EPBMC_011523								
570-124252-3	EPBBC_011523	90	88	89	85	81	85	86	85
570-124252-3 - RA	EPBBC_011523								
MB 320-650862/1-A	Method Blank	66	66	67	62	59	62	61	60
MB 320-650862/1-A - RA	Method Blank								
MB 320-651189/1-A	Method Blank	54	53	55	50	47	50	48	47
MB 320-651189/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-650862/2-A	Lab Control Sample	60	59	60	61	55	54	57	49
LCS 320-651189/2-A	Lab Control Sample	73	71	78	76	76	75	80	69

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124252-2
Project/Site: Boeing SSFL ISRA and BMP

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCSD 320-650862/3-A	Lab Control Sample Dup	62	60	64	65	62	62	64	58
LCSD 320-651189/3-A	Lab Control Sample Dup	77	76	78	79	72	68	75	63

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-650862/2-A	Lab Control Sample	57	66	65	62	55	63	62	62
LCS 320-651189/2-A	Lab Control Sample	81	78	81	77	73	77	78	78
LCSD 320-650862/3-A	Lab Control Sample Dup	65	69	70	65	62	67	65	64
LCSD 320-651189/3-A	Lab Control Sample Dup	75	82	82	79	69	79	80	79

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-650862/1-A
Matrix: Water
Analysis Batch: 652038

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 650862

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.000000844	J,DX q	0.000010	0.00000034	ug/L		02/01/23 06:04	02/06/23 14:23	1
2,3,7,8-TCDF	0.000000804	J,DX q	0.000010	0.00000018	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,7,8-PeCDD	0.00000133	J,DX	0.000050	0.00000028	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,7,8-PeCDF	0.00000141	J,DX	0.000050	0.00000026	ug/L		02/01/23 06:04	02/06/23 14:23	1
2,3,4,7,8-PeCDF	0.00000105	J,DX	0.000050	0.00000028	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,4,7,8-HxCDD	0.00000333	J,DX	0.000050	0.00000027	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,6,7,8-HxCDD	0.00000177	J,DX	0.000050	0.00000028	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,7,8,9-HxCDD	0.00000192	J,DX	0.000050	0.00000024	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,4,7,8-HxCDF	0.00000144	J,DX	0.000050	0.00000025	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,6,7,8-HxCDF	0.00000140	J,DX	0.000050	0.00000022	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,7,8,9-HxCDF	0.00000126	J,DX q	0.000050	0.00000024	ug/L		02/01/23 06:04	02/06/23 14:23	1
2,3,4,6,7,8-HxCDF	0.000000852	J,DX q	0.000050	0.00000021	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,4,6,7,8-HpCDD	0.00000347	J,DX q	0.000050	0.00000019	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,4,6,7,8-HpCDF	0.00000196	J,DX q	0.000050	0.00000023	ug/L		02/01/23 06:04	02/06/23 14:23	1
1,2,3,4,7,8,9-HpCDF	0.00000202	J,DX	0.000050	0.00000026	ug/L		02/01/23 06:04	02/06/23 14:23	1
OCDD	0.0000106	J,DX	0.00010	0.00000036	ug/L		02/01/23 06:04	02/06/23 14:23	1
OCDF	0.00000474	J,DX	0.00010	0.00000024	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total TCDD	0.00000670	J,DX q	0.000010	0.00000034	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total TCDF	0.000000804	J,DX q	0.000010	0.00000018	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total PeCDD	0.00000176	J,DX q	0.000050	0.00000028	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total PeCDF	0.00000246	J,DX	0.000050	0.00000026	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total HxCDD	0.00000809	J,DX q	0.000050	0.00000024	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total HxCDF	0.00000495	J,DX q	0.000050	0.00000021	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total HpCDD	0.00000606	J,DX q	0.000050	0.00000019	ug/L		02/01/23 06:04	02/06/23 14:23	1
Total HpCDF	0.00000398	J,DX q	0.000050	0.00000023	ug/L		02/01/23 06:04	02/06/23 14:23	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*61*		*25 - 164*	*02/01/23 06:04*	*02/06/23 14:23*	*1*
13C-2,3,7,8-TCDF	*60*		*24 - 169*	*02/01/23 06:04*	*02/06/23 14:23*	*1*
13C-1,2,3,7,8-PeCDD	*63*		*25 - 181*	*02/01/23 06:04*	*02/06/23 14:23*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-650862/1-A
Matrix: Water
Analysis Batch: 652038

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 650862

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	63		24 - 185	02/01/23 06:04	02/06/23 14:23	1
13C-2,3,4,7,8-PeCDF	64		21 - 178	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,4,7,8-HxCDD	62		32 - 141	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,6,7,8-HxCDD	66		28 - 130	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,4,7,8-HxCDF	57		26 - 152	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,6,7,8-HxCDF	66		26 - 123	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,7,8,9-HxCDF	66		29 - 147	02/01/23 06:04	02/06/23 14:23	1
13C-2,3,4,6,7,8-HxCDF	67		28 - 136	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,4,6,7,8-HpCDD	62		23 - 140	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,4,6,7,8-HpCDF	59		28 - 143	02/01/23 06:04	02/06/23 14:23	1
13C-1,2,3,4,7,8,9-HpCDF	62		26 - 138	02/01/23 06:04	02/06/23 14:23	1
13C-OCDD	61		17 - 157	02/01/23 06:04	02/06/23 14:23	1
13C-OCDF	60		17 - 157	02/01/23 06:04	02/06/23 14:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	82		35 - 197	02/01/23 06:04	02/06/23 14:23	1

Lab Sample ID: LCS 320-650862/2-A
Matrix: Water
Analysis Batch: 652038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 650862

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000218		ug/L		109	67 - 158
2,3,7,8-TCDF	0.000200	0.000228		ug/L		114	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.00103		ug/L		103	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.00104		ug/L		104	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.00104		ug/L		104	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.00102		ug/L		102	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00105		ug/L		105	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.00116		ug/L		116	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.00104		ug/L		104	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.00105		ug/L		105	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.00103		ug/L		103	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.00104		ug/L		104	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.00104		ug/L		104	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.00105		ug/L		105	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.00104		ug/L		104	78 - 138
OCDD	0.00200	0.00205		ug/L		103	78 - 144
OCDF	0.00200	0.00216		ug/L		108	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	60		20 - 175
13C-2,3,7,8-TCDF	59		22 - 152
13C-1,2,3,7,8-PeCDD	60		21 - 227
13C-1,2,3,7,8-PeCDF	61		21 - 192
13C-2,3,4,7,8-PeCDF	55		13 - 328
13C-1,2,3,4,7,8-HxCDD	54		21 - 193
13C-1,2,3,6,7,8-HxCDD	57		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-650862/2-A
Matrix: Water
Analysis Batch: 652038

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 650862

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	49		19 - 202
13C-1,2,3,6,7,8-HxCDF	57		21 - 159
13C-1,2,3,7,8,9-HxCDF	66		17 - 205
13C-2,3,4,6,7,8-HxCDF	65		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	62		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	55		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	63		20 - 186
13C-OCDD	62		13 - 199
13C-OCDF	62		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	83		31 - 191

Lab Sample ID: LCSD 320-650862/3-A
Matrix: Water
Analysis Batch: 652038

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 650862

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000213		ug/L		106	67 - 158	2	50
2,3,7,8-TCDF			0.000200	0.000223		ug/L		112	75 - 158	2	50
1,2,3,7,8-PeCDD			0.00100	0.00102		ug/L		102	70 - 142	1	50
1,2,3,7,8-PeCDF			0.00100	0.00102		ug/L		102	80 - 134	2	50
2,3,4,7,8-PeCDF			0.00100	0.00104		ug/L		104	68 - 160	0	50
1,2,3,4,7,8-HxCDD			0.00100	0.000996		ug/L		100	70 - 164	2	50
1,2,3,6,7,8-HxCDD			0.00100	0.00105		ug/L		105	76 - 134	0	50
1,2,3,7,8,9-HxCDD			0.00100	0.00105		ug/L		105	64 - 162	9	50
1,2,3,4,7,8-HxCDF			0.00100	0.00101		ug/L		101	72 - 134	3	50
1,2,3,6,7,8-HxCDF			0.00100	0.00104		ug/L		104	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00102		ug/L		102	78 - 130	2	50
2,3,4,6,7,8-HxCDF			0.00100	0.00102		ug/L		102	70 - 156	2	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00103		ug/L		103	70 - 140	0	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00104		ug/L		104	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00103		ug/L		103	78 - 138	1	50
OCDD			0.00200	0.00205		ug/L		102	78 - 144	0	50
OCDF			0.00200	0.00213		ug/L		106	63 - 170	1	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	62		20 - 175
13C-2,3,7,8-TCDF	60		22 - 152
13C-1,2,3,7,8-PeCDD	64		21 - 227
13C-1,2,3,7,8-PeCDF	65		21 - 192
13C-2,3,4,7,8-PeCDF	62		13 - 328
13C-1,2,3,4,7,8-HxCDD	62		21 - 193
13C-1,2,3,6,7,8-HxCDD	64		25 - 163
13C-1,2,3,4,7,8-HxCDF	58		19 - 202
13C-1,2,3,6,7,8-HxCDF	65		21 - 159
13C-1,2,3,7,8,9-HxCDF	69		17 - 205
13C-2,3,4,6,7,8-HxCDF	70		22 - 176

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-650862/3-A
Matrix: Water
Analysis Batch: 652038

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 650862

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	65		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	62		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	67		20 - 186
13C-OCDD	65		13 - 199
13C-OCDF	64		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	79		31 - 191

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000054	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8-PeCDF	0.000000691	J,DX	0.000050	0.00000018	ug/L		02/02/23 06:24	02/05/23 15:34	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8-HxCDD	0.00000202	J,DX q	0.000050	0.00000023	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000022	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8,9-HxCDD	0.000000925	J,DX	0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8-HxCDF	0.000000701	J,DX	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,6,7,8-HxCDF	0.000000358	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8,9-HxCDF	0.000000644	J,DX q	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 15:34	1
2,3,4,6,7,8-HxCDF	0.000000431	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,6,7,8-HpCDD	0.00000195	J,DX q	0.000050	0.00000028	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,6,7,8-HpCDF	0.00000178	J,DX q	0.000050	0.00000024	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8,9-HpCDF	0.000000759	J,DX q	0.000050	0.00000026	ug/L		02/02/23 06:24	02/05/23 15:34	1
OCDD	0.0000108	J,DX	0.00010	0.00000046	ug/L		02/02/23 06:24	02/05/23 15:34	1
OCDF	0.00000206	J,DX	0.00010	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total TCDD	0.00000231	J,DX	0.000010	0.00000054	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total TCDF	0.00000107	J,DX	0.000010	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total PeCDD	0.000000379	J,DX q	0.000050	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total PeCDF	0.000000691	J,DX	0.000050	0.00000018	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HxCDD	0.00000295	J,DX q	0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HxCDF	0.00000253	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HpCDD	0.00000444	J,DX q	0.000050	0.00000028	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HpCDF	0.00000254	J,DX q	0.000050	0.00000024	ug/L		02/02/23 06:24	02/05/23 15:34	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,7,8-PeCDD	*58*		*25 - 181*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,7,8-PeCDF	*57*		*24 - 185*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-2,3,4,7,8-PeCDF	*56*		*21 - 178*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,4,7,8-HxCDD	*46*		*32 - 141*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,6,7,8-HxCDD	*55*		*28 - 130*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,4,7,8-HxCDF	*45*		*26 - 152*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,6,7,8-HxCDF	*54*		*26 - 123*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,7,8,9-HxCDF	*53*		*29 - 147*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-2,3,4,6,7,8-HxCDF	*55*		*28 - 136*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*50*		*23 - 140*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*47*		*28 - 143*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*50*		*26 - 138*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-OCDD	*48*		*17 - 157*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-OCDF	*47*		*17 - 157*	*02/02/23 06:24*	*02/05/23 15:34*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*93*		*35 - 197*	*02/02/23 06:24*	*02/05/23 15:34*	*1*

Lab Sample ID: LCS 320-651189/2-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651189

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000208		ug/L		104	67 - 158
2,3,7,8-TCDF	0.000200	0.000215		ug/L		107	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.00101		ug/L		101	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.00100		ug/L		100	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.00102		ug/L		102	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000971		ug/L		97	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00103		ug/L		103	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000993		ug/L		99	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.00101		ug/L		101	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000997		ug/L		100	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000982		ug/L		98	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.00101		ug/L		101	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.00100		ug/L		100	70 - 140

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-651189/2-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651189

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00102		ug/L		102	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000993		ug/L		99	78 - 138		
OCDD			0.00200	0.00200		ug/L		100	78 - 144		
OCDF			0.00200	0.00207		ug/L		103	63 - 170		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*73*		*20 - 175*
13C-2,3,7,8-TCDF	*71*		*22 - 152*
13C-1,2,3,7,8-PeCDD	*78*		*21 - 227*
13C-1,2,3,7,8-PeCDF	*76*		*21 - 192*
13C-2,3,4,7,8-PeCDF	*76*		*13 - 328*
13C-1,2,3,4,7,8-HxCDD	*75*		*21 - 193*
13C-1,2,3,6,7,8-HxCDD	*80*		*25 - 163*
13C-1,2,3,4,7,8-HxCDF	*69*		*19 - 202*
13C-1,2,3,6,7,8-HxCDF	*81*		*21 - 159*
13C-1,2,3,7,8,9-HxCDF	*78*		*17 - 205*
13C-2,3,4,6,7,8-HxCDF	*81*		*22 - 176*
13C-1,2,3,4,6,7,8-HpCDD	*77*		*26 - 166*
13C-1,2,3,4,6,7,8-HpCDF	*73*		*21 - 158*
13C-1,2,3,4,7,8,9-HpCDF	*77*		*20 - 186*
13C-OCDD	*78*		*13 - 199*
13C-OCDF	*78*		*13 - 199*

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
37Cl4-2,3,7,8-TCDD	*90*		*31 - 191*

Lab Sample ID: LCSD 320-651189/3-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651189

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000216		ug/L		108	67 - 158	3	50
2,3,7,8-TCDF			0.000200	0.000221		ug/L		110	75 - 158	3	50
1,2,3,7,8-PeCDD			0.00100	0.00105		ug/L		105	70 - 142	4	50
1,2,3,7,8-PeCDF			0.00100	0.00104		ug/L		104	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.00106		ug/L		106	68 - 160	4	50
1,2,3,4,7,8-HxCDD			0.00100	0.00102		ug/L		102	70 - 164	5	50
1,2,3,6,7,8-HxCDD			0.00100	0.00107		ug/L		107	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.00114		ug/L		114	64 - 162	14	50
1,2,3,4,7,8-HxCDF			0.00100	0.00106		ug/L		106	72 - 134	5	50
1,2,3,6,7,8-HxCDF			0.00100	0.00103		ug/L		103	84 - 130	3	50
1,2,3,7,8,9-HxCDF			0.00100	0.00103		ug/L		103	78 - 130	4	50
2,3,4,6,7,8-HxCDF			0.00100	0.00104		ug/L		104	70 - 156	3	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00104		ug/L		104	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00106		ug/L		106	82 - 122	4	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00104		ug/L		104	78 - 138	4	50
OCDD			0.00200	0.00207		ug/L		104	78 - 144	4	50
OCDF			0.00200	0.00216		ug/L		108	63 - 170	4	50

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 175
13C-2,3,7,8-TCDF	76		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	79		21 - 192
13C-2,3,4,7,8-PeCDF	72		13 - 328
13C-1,2,3,4,7,8-HxCDD	68		21 - 193
13C-1,2,3,6,7,8-HxCDD	75		25 - 163
13C-1,2,3,4,7,8-HxCDF	63		19 - 202
13C-1,2,3,6,7,8-HxCDF	75		21 - 159
13C-1,2,3,7,8,9-HxCDF	82		17 - 205
13C-2,3,4,6,7,8-HxCDF	82		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	79		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	69		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	80		13 - 199
13C-OCDF	79		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-650862/1-A
Matrix: Water
Analysis Batch: 652285

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 650862

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD - RA	ND		0.000010	0.00000098	ug/L		02/01/23 06:04	02/07/23 13:23	1
2,3,7,8-TCDF - RA	ND		0.000010	0.00000058	ug/L		02/01/23 06:04	02/07/23 13:23	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	59		24 - 169	02/01/23 06:04	02/07/23 13:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	95		35 - 197	02/01/23 06:04	02/07/23 13:23	1

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651969

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000042	ug/L		02/02/23 06:24	02/06/23 12:44	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	60		24 - 169	02/02/23 06:24	02/06/23 12:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	107		35 - 197	02/02/23 06:24	02/06/23 12:44	1

Specialty Organics

Prep Batch: 650862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1 - RA	EPBLLC_011523	Total/NA	Water	1613B	
570-124252-1	EPBLLC_011523	Total/NA	Water	1613B	
MB 320-650862/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-650862/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-650862/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-650862/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Prep Batch: 651189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-2 - RA	EPBMC_011523	Total/NA	Water	1613B	
570-124252-2	EPBMC_011523	Total/NA	Water	1613B	
570-124252-3 - RA	EPBBC_011523	Total/NA	Water	1613B	
570-124252-3	EPBBC_011523	Total/NA	Water	1613B	
MB 320-651189/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-651189/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-651189/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-651189/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 651907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-2	EPBMC_011523	Total/NA	Water	1613B	651189
570-124252-3	EPBBC_011523	Total/NA	Water	1613B	651189
MB 320-651189/1-A	Method Blank	Total/NA	Water	1613B	651189
LCS 320-651189/2-A	Lab Control Sample	Total/NA	Water	1613B	651189
LCSD 320-651189/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	651189

Analysis Batch: 651969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-2 - RA	EPBMC_011523	Total/NA	Water	1613B	651189
570-124252-3 - RA	EPBBC_011523	Total/NA	Water	1613B	651189
MB 320-651189/1-A - RA	Method Blank	Total/NA	Water	1613B	651189

Analysis Batch: 652038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	1613B	650862
MB 320-650862/1-A	Method Blank	Total/NA	Water	1613B	650862
LCS 320-650862/2-A	Lab Control Sample	Total/NA	Water	1613B	650862
LCSD 320-650862/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	650862

Analysis Batch: 652285

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1 - RA	EPBLLC_011523	Total/NA	Water	1613B	650862
MB 320-650862/1-A - RA	Method Blank	Total/NA	Water	1613B	650862

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-2

Client Sample ID: EPBLLC_011523

Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1030.6 mL	20 uL	650862	02/01/23 06:04	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	652285	02/07/23 17:32	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1030.6 mL	20 uL	650862	02/01/23 06:04	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	652038	02/06/23 21:21	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: EPBMC_011523

Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1006.8 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651969	02/06/23 13:19	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1006.8 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	651907	02/05/23 17:53	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: EPBBC_011523

Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1018 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651969	02/06/23 14:21	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1018 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	651907	02/05/23 18:40	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-2

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124252-1	EPBLLC_011523	Water	01/15/23 08:05	01/17/23 18:25
570-124252-2	EPBMC_011523	Water	01/15/23 08:55	01/17/23 18:25
570-124252-3	EPBBC_011523	Water	01/15/23 07:20	01/17/23 18:25

124252

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. Dominick	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 395-5494	Carrier:	of COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☐ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-08	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E908.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn; – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
									2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
1	EPBLLC_011523	1-15-23	0805	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2	EPBMC_011523	1-15-23	0855	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3	EPBBC_011523	1-15-23	0720	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	EPBC_			G	WM	21																				
	EPB_VC			G	WM	21																				
	Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyald..h.com and post to ..otal Acce..s. B..r to Haley & Aldrich at AP@ha..ey-aldrich.com Report ..ev.. Data Package and provide EDD. Al..d ..ssolv.. samples are to be filte..d with 24 h..urs of rece..e..en those p..aced on hold ..ow l..mits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No. | Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:

Relinquished by: Michelle Dallabetta	Company: H&A	Date/Time: 1-17-23 1245	Received by:	EC	Date/Time: 1/17/23 1245
Relinquished by:	Company: EC	Date/Time: 1/17/23 1825	Received by:	EC	Date/Time: 1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 2.1/2.1 1.8/1.8 SCII

SAP COC 2019/2020 VERSION 3

570-124252 Chain of Custody

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No. 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin. California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124252-3
Address: 5755 8th Street East, ,	Due Date Requested 2/6/2023			
City: Tacoma	TAT Requested (days)			
State, Zip WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_011523 (570-124252-1)	1/15/23	08 05 Pacific		Water			X	X	2	
EPBMC_011523 (570-124252-2)	1/15/23	08 55 Pacific		Water			X	X	2	
EPBBC_011523 (570-124252-3)	1/15/23	07 20 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204509.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124252-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/6/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_011523 (570-124252-1)	1/15/23	08:05 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPBMC_011523 (570-124252-2)	1/15/23	08:55 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPBBC_011523 (570-124252-3)	1/15/23	07:20 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/18/23 1325			1.19.23 940	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 1.8c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124252-2

Login Number: 124252
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124252-2

Login Number: 124252
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/19/23 11:49 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8c 1.7c 2.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/25/2023 7:41:55 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124252-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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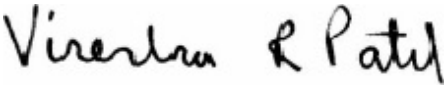
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124252-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124252-3

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

Metals
Method 1631E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following sample associated with analytical batch 580-416060 were outside control limits: (580-122334-A-10 MS) and (580-122334-A-10 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-3

Client Sample ID: EPBLLC_011523 — Lab Sample ID: 570-124252-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.011		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0031		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: EPBMC_011523 — Lab Sample ID: 570-124252-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.014		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0086		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: EPBBC_011523 — Lab Sample ID: 570-124252-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.011		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0083		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-3

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.011		0.00050	0.000079	ug/L			01/20/23 20:18	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.014		0.00050	0.000079	ug/L			01/20/23 16:42	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.011		0.00050	0.000079	ug/L			01/24/23 15:17	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-3

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0031		0.00050	0.000079	ug/L			01/20/23 17:36	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0086		0.00050	0.000079	ug/L			01/20/23 17:41	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0083		0.00050	0.000079	ug/L			01/20/23 17:45	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-416060/19
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:46	1

Lab Sample ID: MB 580-416060/20
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:50	1

Lab Sample ID: MB 580-416060/23
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 13:03	1

Lab Sample ID: LCS 580-416060/29
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00449		ug/L		90	77 - 123		

Lab Sample ID: LCSD 580-416060/32
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00438		ug/L		88	77 - 123	2	24

Lab Sample ID: 570-124252-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: EPBLLC_011523
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.011		0.0150	0.0255		ug/L		99	71 - 125		

Lab Sample ID: 570-124252-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: EPBLLC_011523
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.011		0.0150	0.0259		ug/L		102	71 - 125	2	24

Lab Sample ID: 570-124263-D-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.14		0.200	0.360		ug/L		109	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 570-124263-D-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.14		0.200	0.358		ug/L		108	71 - 125	1	24

Lab Sample ID: MB 580-416234/14
Matrix: Water
Analysis Batch: 416234

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/24/23 14:14	1

Lab Sample ID: MB 580-416234/15
Matrix: Water
Analysis Batch: 416234

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/24/23 14:19	1

Lab Sample ID: MB 580-416234/16
Matrix: Water
Analysis Batch: 416234

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/24/23 14:23	1

Lab Sample ID: LCS 580-416234/19
Matrix: Water
Analysis Batch: 416234

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00461		ug/L		92	77 - 123		

Lab Sample ID: LCSD 580-416234/20
Matrix: Water
Analysis Batch: 416234

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00468		ug/L		94	77 - 123	2	24

Lab Sample ID: 580-122437-A-40 MS
Matrix: Water
Analysis Batch: 416234

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00043	J,DX	0.00500	0.00450		ug/L		81	71 - 125		

Lab Sample ID: 580-122437-A-40 MSD
Matrix: Water
Analysis Batch: 416234

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00043	J,DX	0.00500	0.00439		ug/L		79	71 - 125	2	24

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-122509-B-1 MS
Matrix: Water
Analysis Batch: 416234

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.00025	J,DX	0.00500	0.00433		ug/L		82	71 - 125		

Lab Sample ID: 580-122509-B-1 MSD
Matrix: Water
Analysis Batch: 416234

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00025	J,DX	0.00500	0.00424		ug/L		80	71 - 125	2	24

Lab Sample ID: MB 580-415853/1-A
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 14:46	1

Metals

Filtration Batch: 415853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	Filtration	
570-124252-2	EPBMC_011523	Dissolved	Water	Filtration	
570-124252-3	EPBBC_011523	Dissolved	Water	Filtration	
MB 580-415853/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 416060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	1631E	415853
570-124252-1	EPBLLC_011523	Total/NA	Water	1631E	
570-124252-2	EPBMC_011523	Dissolved	Water	1631E	415853
570-124252-2	EPBMC_011523	Total/NA	Water	1631E	
570-124252-3	EPBBC_011523	Dissolved	Water	1631E	415853
MB 580-415853/1-A	Method Blank	Dissolved	Water	1631E	415853
MB 580-416060/19	Method Blank	Total/NA	Water	1631E	
MB 580-416060/20	Method Blank	Total/NA	Water	1631E	
MB 580-416060/23	Method Blank	Total/NA	Water	1631E	
LCS 580-416060/29	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-416060/32	Lab Control Sample Dup	Total/NA	Water	1631E	
570-124252-1 MS	EPBLLC_011523	Total/NA	Water	1631E	
570-124252-1 MSD	EPBLLC_011523	Total/NA	Water	1631E	
570-124263-D-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-124263-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Analysis Batch: 416234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-3	EPBBC_011523	Total/NA	Water	1631E	
MB 580-416234/14	Method Blank	Total/NA	Water	1631E	
MB 580-416234/15	Method Blank	Total/NA	Water	1631E	
MB 580-416234/16	Method Blank	Total/NA	Water	1631E	
LCS 580-416234/19	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-416234/20	Lab Control Sample Dup	Total/NA	Water	1631E	
580-122437-A-40 MS	Matrix Spike	Total/NA	Water	1631E	
580-122437-A-40 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-122509-B-1 MS	Matrix Spike	Total/NA	Water	1631E	
580-122509-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-3

Client Sample ID: EPBLLC_011523

Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415853	01/19/23 13:15	AJD	EET SEA
Dissolved	Analysis	1631E		1			416060	01/20/23 17:36	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			416060	01/20/23 20:18	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: EPBMC_011523

Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415853	01/19/23 13:15	AJD	EET SEA
Dissolved	Analysis	1631E		1			416060	01/20/23 17:41	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			416060	01/20/23 16:42	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: EPBBC_011523

Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415853	01/19/23 13:15	AJD	EET SEA
Dissolved	Analysis	1631E		1			416060	01/20/23 17:45	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			416234	01/24/23 15:17	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124252-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-3

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124252-1	EPBLLC_011523	Water	01/15/23 08:05	01/17/23 18:25
570-124252-2	EPBMC_011523	Water	01/15/23 08:55	01/17/23 18:25
570-124252-3	EPBBC_011523	Water	01/15/23 07:20	01/17/23 18:25

124252

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. Dominick	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8505	Lab Contact: Virendra Patel (714) 395-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-08	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E908.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn; – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
1 EPBLLC_011523	1-15-23	0805	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2 EPBMC_011523	1-15-23	0855	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3 EPBBC_011523	1-15-23	0720	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBC__			G	WM	21																				
EPB_VC			G	WM	21																				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

MS MSD

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyald..h.com and post to ..otal Acce-s. B..r to Haley & Aldrich at AP@ha..y-aldrich.com Report ..ev.. Data Package and provide EDD. Al..d ..ssolv.. samples are to be filte..d with 24 h..urs of rece..p.. even those p..aced on hold ..ow l..mits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No. | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Michelle Wallabe	H&A	1-17-23 1241		EC	1/17/23 1245
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	EC	1/17/23 1825		EC	1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 2.1/2.1 1.8/1.8 SCH

SAP COC 2019/2020 VERSION 3

570-124252 Chain of Custody

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No. 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin. California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124252-3
Address: 5755 8th Street East, ,	Due Date Requested 2/6/2023			
City: Tacoma	TAT Requested (days)			
State, Zip WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_011523 (570-124252-1)	1/15/23	08 05 Pacific		Water			X	X	2	
EPBMC_011523 (570-124252-2)	1/15/23	08 55 Pacific		Water			X	X	2	
EPBBC_011523 (570-124252-3)	1/15/23	07 20 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204480.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124252-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_011523 (570-124252-1)	1/15/23	08:05 Pacific		Water			X	X	2	
EPBMC_011523 (570-124252-2)	1/15/23	08:55 Pacific		Water			X	X	2	
EPBBC_011523 (570-124252-3)	1/15/23	07:20 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed L, B	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements: 6293 0824 8317

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: NA | Cooler Temperature(s) °C and Other Remarks: 0.0 D/G 4 0.3 L, Blue Ice

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124252-3

Login Number: 124252
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124252-3

Login Number: 124252
List Number: 4
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/19/23 12:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124252-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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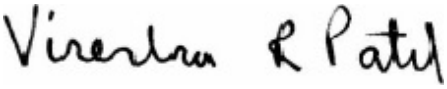
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-4

Job ID: 570-124252-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124252-4

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

3 Client HC Cay & Adrchler, . dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-129252-9

Client Sample ID: EPBLLC_011523 — Lab Sample ID: 570-124252-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
3 GHa MC ((ncHe 0,00sm1)) %	s0,01		0,01	0,01	T	1		D9989	NorHCj6 &
/ lCaM0,00sm1 no 0,0825)) %	84,12		0,01	0,01	T	1		D9989	NorHCj6 &
NorHC/ lCaHeA 3 GHa M0 no 0,0828)) %	m4,1s		0,01	0,01	T	1		D9989	NorHCj6 &
Vi da glei / HeA M0,0825 no 0,125)) %	1,47		0,01	0,01	T	1		D9989	NorHCj6 &

Client Sample ID: EPBMC_011523 — Lab Sample ID: 570-124252-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
3 GHa MC ((ncHe 0,00sm1)) %	24,79		0,01	0,01	T	1		D9989	NorHCj6 &
/ lCaM0,00sm1 no 0,0825)) %	70,sm		0,01	0,01	T	1		D9989	NorHCj6 &
NorHC/ lCaHeA 3 GHa M0 no 0,0828)) %	mm,19		0,01	0,01	T	1		D9989	NorHCj6 &
Vi da glei / HeA M0,0825 no 0,125)) %	0,48		0,01	0,01	T	1		D9989	NorHCj6 &

Client Sample ID: EPBBC_011523 — Lab Sample ID: 570-124252-3

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
3 GHa MC ((ncHe 0,00sm1)) %	19,s7		0,01	0,01	T	1		D9989	NorHCj6 &
/ lCaM0,00sm1 no 0,0825)) %	78,94		0,01	0,01	T	1		D9989	NorHCj6 &
NorHC/ lCaHeA 3 GHa M0 no 0,0828)) %	m0,45		0,01	0,01	T	1		D9989	NorHCj6 &
Vi da glei / HeA M0,0825 no 0,125)) %	m,1s		0,01	0,01	T	1		D9989	NorHCj6 &

Ncl(Di ni rnloe / E)) Hda Aoi (eonler CEAi cHAlor ci) lr HCni (nd (EC(,

u Ecbfle(3 HCrli eri

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**30.01**		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	**68.12**		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	**98.13**		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	**1.87**		0.01	0.01	%			02/04/23 13:34	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**28.74**		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	**70.39**		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	**99.14**		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	**0.86**		0.01	0.01	%			02/04/23 13:34	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**14.37**		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	**76.48**		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	**90.85**		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	**9.13**		0.01	0.01	%			02/04/23 13:34	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

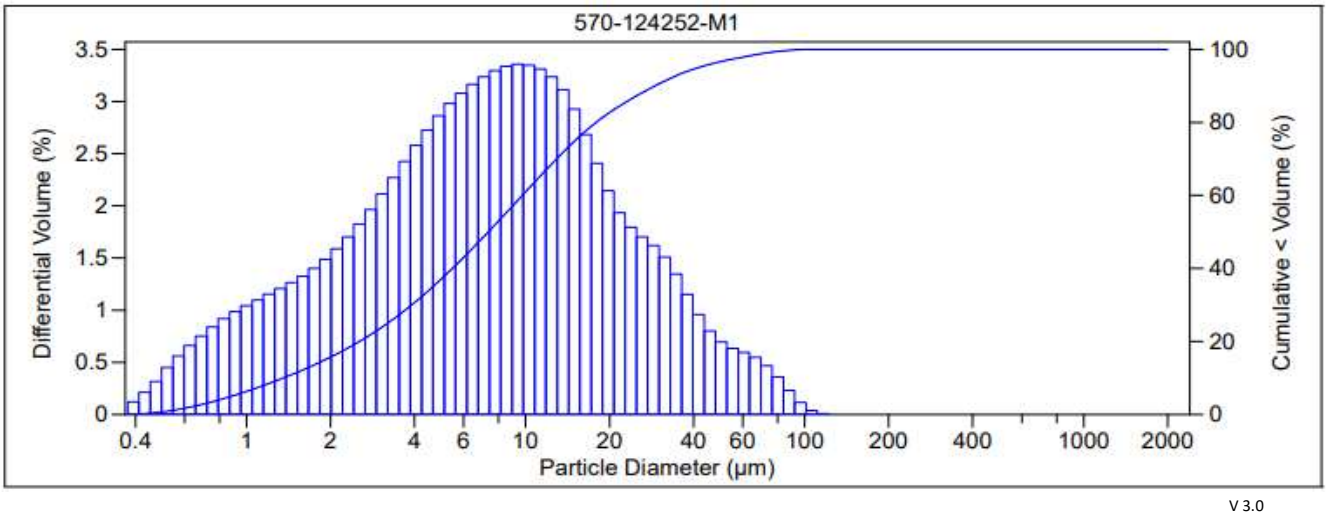
Haley & Aldrich, Inc.

Date Sampled:	01/15/23
Date Received:	01/17/23
Work Order No:	570-124252
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBLLC_011523		N/A	0.012

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	1.87	68.12	30.01	98.13



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

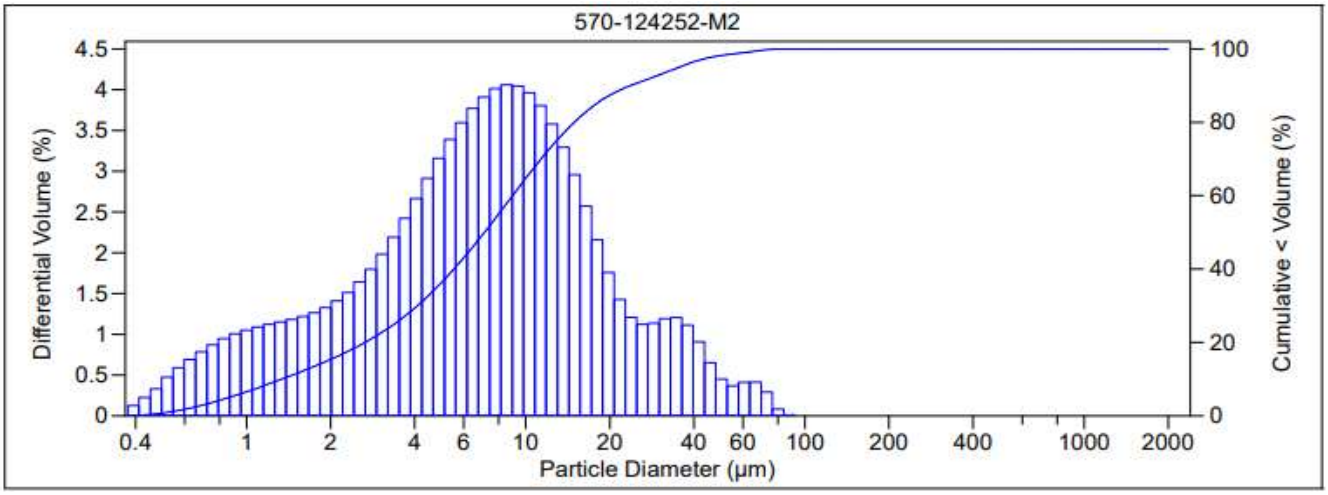
Haley & Aldrich, Inc.

Date Sampled:	01/15/23
Date Received:	01/17/23
Work Order No:	570-124252
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBMC_011523		N/A	0.011

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.00	0.86	70.39	28.74	99.14



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

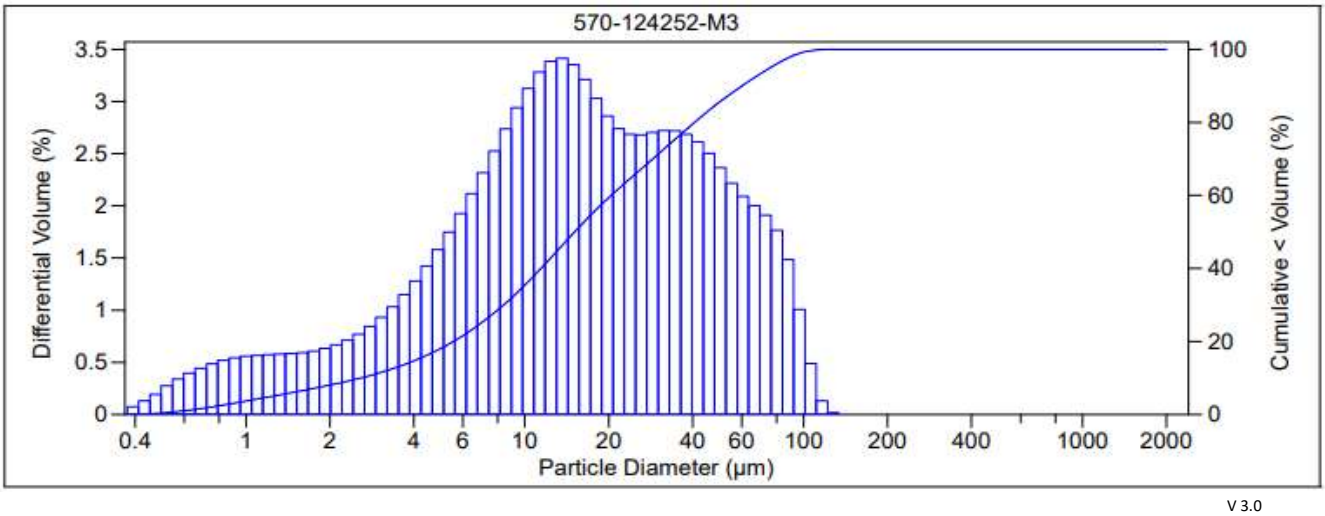
Haley & Aldrich, Inc.

Date Sampled:	01/15/23
Date Received:	01/17/23
Work Order No:	570-124252
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_011523		N/A	0.024

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.01	9.13	76.48	14.37	90.85



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

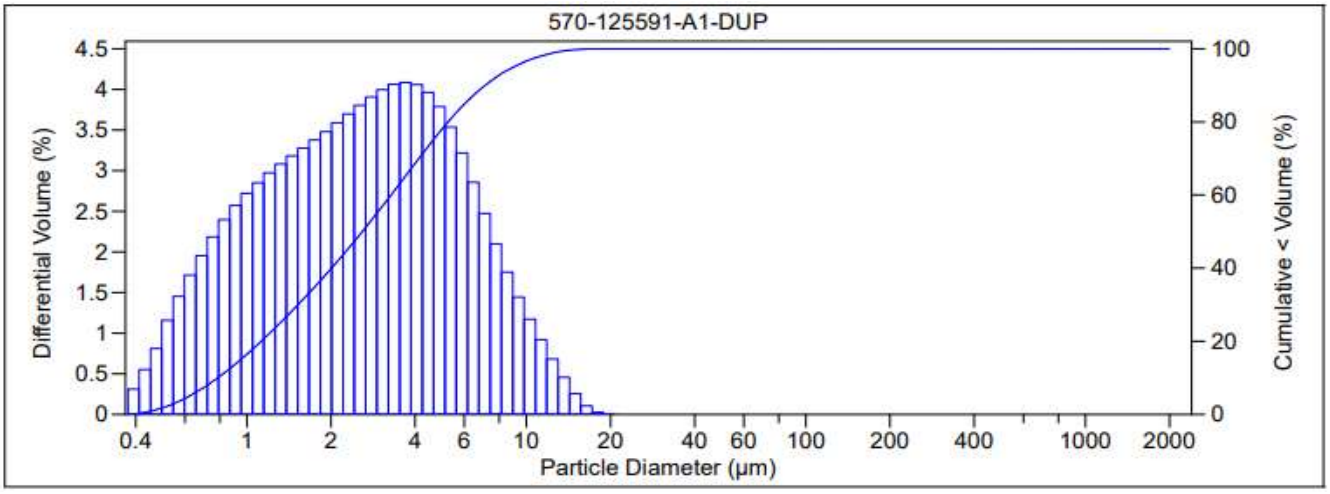
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125590
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13130

Sample ID	Depth ft	Description	Mean Grain Size mm
130-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	32.31	67.69	100.00



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

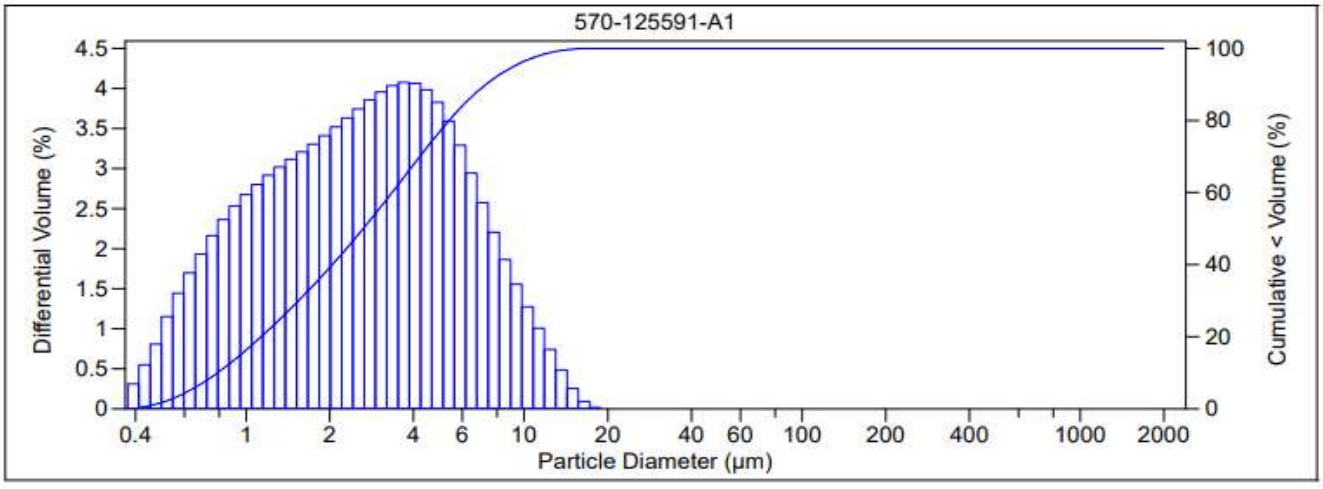
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125591
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13131

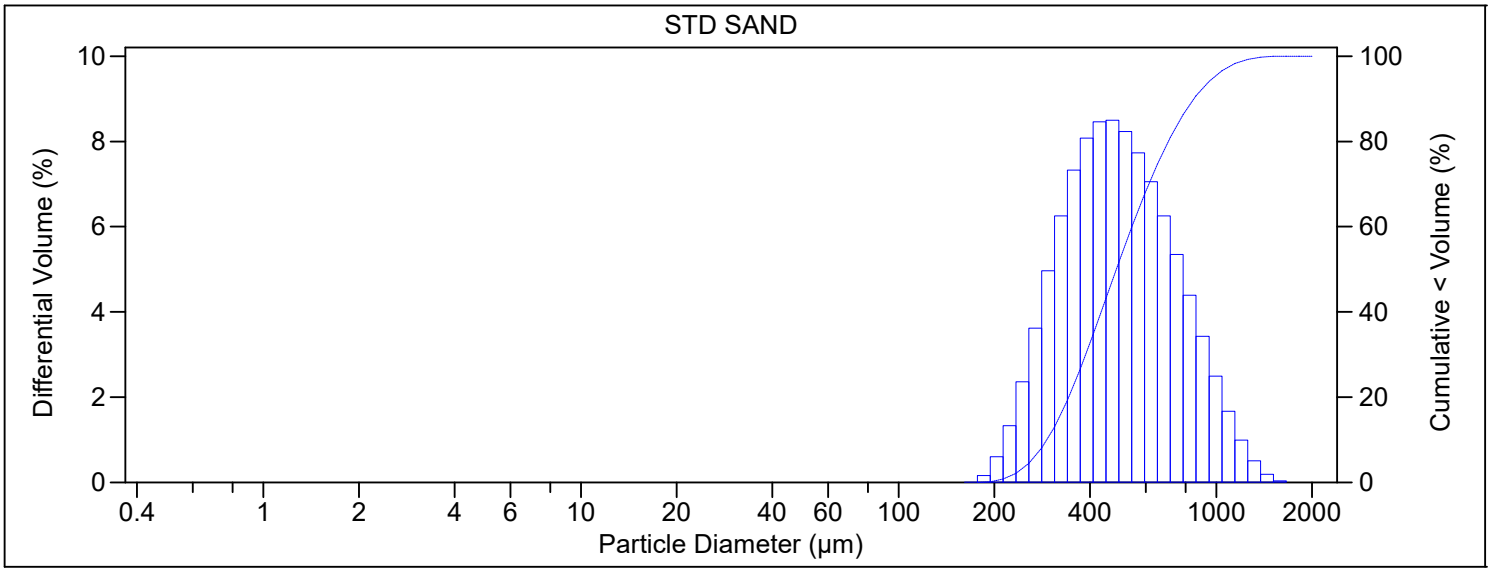
Sample ID	Depth ft	Description	Mean Grain Size mm
131-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	33.28	66.72	100.00



V 3.0

File name:	C:\LS13320\STD SAND_ 3 Feb 2023_19.52.20.$ls		
	STD SAND_ 3 Feb 2023_19.52.20.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	22		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	19:51 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 3 Feb 2023_19.52.20.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	534.6 µm	S.D.:	224.4 µm
Median:	485.0 µm	Variance:	50358 µm^2
Mean/Median ratio:	1.102	Skewness:	1.068 Right skewed
Mode:	471.1 µm	Kurtosis:	1.067 Leptokurtic

d_{10}: 292.7 µm d_{50}: 485.0 µm d_{90}: 851.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.02	Median:	1.04	Deviation:	0.60
Skewness:	-0.06	Kurtosis:	0.93		

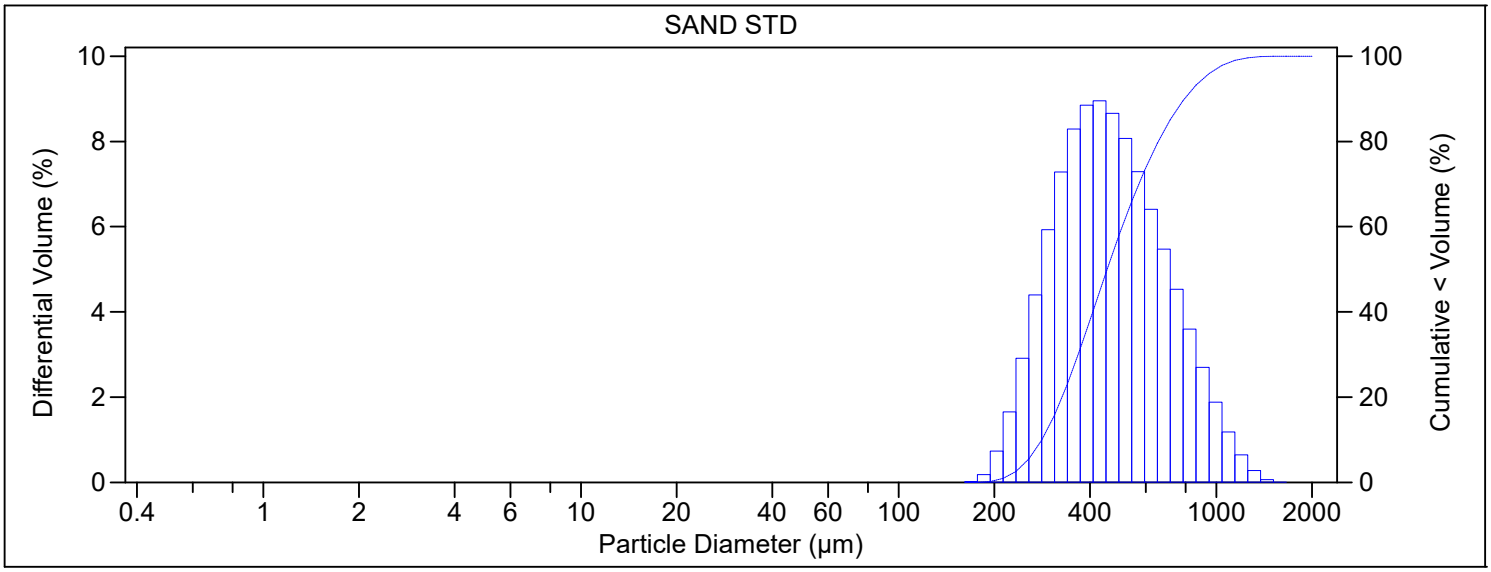
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
260.7 µm	323.9 µm	365.7 µm	434.7 µm	485.0 µm	656.2 µm	756.9 µm	981.3 µm

Particle Diameter µm	STD SAND_ 3 Feb 2023 _19.52.20 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	3.75
250	49.0
500	42.8
1000	4.50
2000	

STD SAND_ 3 Feb 2023_19.52.20.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.99
0.412	0	22.73	0	1255	0.51
0.452	0	24.95	0	1377	0.19
0.496	0	27.39	0	1512	0.034
0.545	0	30.07	0	1660	0.0013
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.011		
3.206	0	176.9	0.16		
3.519	0	194.2	0.60		
3.863	0	213.2	1.33		
4.241	0	234.1	2.36		
4.656	0	256.9	3.62		
5.111	0	282.1	4.97		
5.611	0	309.6	6.26		
6.159	0	339.9	7.33		
6.761	0	373.1	8.07		
7.422	0	409.6	8.46		
8.148	0	449.7	8.50		
8.944	0	493.6	8.23		
9.819	0	541.9	7.73		
10.78	0	594.9	7.06		
11.83	0	653.0	6.25		
12.99	0	716.9	5.35		
14.26	0	786.9	4.39		
15.65	0	863.9	3.43		
17.18	0	948.3	2.50		
18.86	0	1041	1.67		

File name:	C:\LS13320\SAND STD_ 3 Feb 2023_20.33.47.$ls		
	SAND STD_ 3 Feb 2023_20.33.47.$ls		
File ID:	SAND STD		
Sample ID:	SAND STD		
Operator:	C6FB		
Run number:	24		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:32 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) SAND STD_ 3 Feb 2023_20.33.47.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	501.8 µm	S.D.:	207.4 µm
Median:	453.7 µm	Variance:	42999 µm^2
Mean/Median ratio:	1.106	Skewness:	1.134 Right skewed
Mode:	429.2 µm	Kurtosis:	1.262 Leptokurtic

d_{10}: 282.5 µm d_{50}: 453.7 µm d_{90}: 794.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.11	Median:	1.14	Deviation:	0.58
Skewness:	-0.08	Kurtosis:	0.94		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
253.0 µm	310.4 µm	347.5 µm	408.6 µm	453.7 µm	611.0 µm	703.9 µm	919.1 µm

Particle Diameter µm	SAND STD_ 3 Feb 2023 _20.33.47 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	4.62
250	54.3
500	38.1
1000	3.02
2000	

SAND STD_ 3 Feb 2023_20.33.47.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.65
0.412	0	22.73	0	1255	0.28
0.452	0	24.95	0	1377	0.068
0.496	0	27.39	0	1512	0.0041
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.012		
3.206	0	176.9	0.19		
3.519	0	194.2	0.74		
3.863	0	213.2	1.65		
4.241	0	234.1	2.91		
4.656	0	256.9	4.40		
5.111	0	282.1	5.93		
5.611	0	309.6	7.28		
6.159	0	339.9	8.29		
6.761	0	373.1	8.85		
7.422	0	409.6	8.95		
8.148	0	449.7	8.66		
8.944	0	493.6	8.07		
9.819	0	541.9	7.29		
10.78	0	594.9	6.41		
11.83	0	653.0	5.48		
12.99	0	716.9	4.53		
14.26	0	786.9	3.59		
15.65	0	863.9	2.70		
17.18	0	948.3	1.88		
18.86	0	1041	1.18		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-4

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-125591-A-1 DU
Matrix: Water
Analysis Batch: 301228

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay (less than 0.00391 mm)	66.72			67.69		%				1	20
Coarse Sand (0.5mm to 1mm)	ND			ND		%				NC	20
Fine Sand (0.125 to 0.25mm)	ND			ND		%				NC	20
Gravel (greater than 2 mm)	ND			ND		%				NC	20
Medium Sand (0.25 to 0.5 mm)	ND			ND		%				NC	20
Silt (0.00391 to 0.0625mm)	33.28			32.31		%				3	20
Total Silt and Clay (0 to 0.0626mm)	100.00			100.00		%				0	20
Very Coarse Sand (1 to 2mm)	ND			ND		%				NC	20
Very Fine Sand (0.0625 to 0.125 mm)	ND			ND		%				NC	20

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-4

Geotechnical

Analysis Batch: 301228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	D4464	
570-124252-2	EPBMC_011523	Total/NA	Water	D4464	
570-124252-3	EPBBC_011523	Total/NA	Water	D4464	
LCS 570-301228/22	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-301228/24	Lab Control Sample Dup	Total/NA	Water	D4464	
570-125591-A-1 DU	Duplicate	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-4

Client Sample ID: EPBLLC_011523

Lab Sample ID: 570-124252-1

Date Collected: 01/15/23 08:05

Matrix: Water

Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EPBMC_011523

Lab Sample ID: 570-124252-2

Date Collected: 01/15/23 08:55

Matrix: Water

Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EPBBC_011523

Lab Sample ID: 570-124252-3

Date Collected: 01/15/23 07:20

Matrix: Water

Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129252-9

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	1010Q	07-31-23
California	SCAv MD LAP	17LA0Q1Q	11-30-23
California	State	3082	07-31-23
NeQada	State	CA00111	08-01-23
Eregon	N4 LAP	9175	02-02-29
USDA	US Federal Programs	P330-22-0005Q	05-29-23
Washington	State	CQ16-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-4

Method	Method Description	Protocol	Laboratory
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4

Protocol References:

ASTM = ASTM International

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124252-1	EPBLLC_011523	Water	01/15/23 08:05	01/17/23 18:25
570-124252-2	EPBMC_011523	Water	01/15/23 08:55	01/17/23 18:25
570-124252-3	EPBBC_011523	Water	01/15/23 07:20	01/17/23 18:25

124252

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. Dominick	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8505	Lab Contact: Virendra Patel (714) 395-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-08	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E908.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn; – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
1 EPBLLC_011523	1-15-23	0805	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2 EPBMC_011523	1-15-23	0855	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3 EPBBC_011523	1-15-23	0720	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBC__			G	WM	21																				
EPB_VC			G	WM	21																				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

MS MSD

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyald...com and post to ...otal Acce...s, B...r to Haley & Aldrich at AP@ha...yaldrich.com Report ...ev... Data Package and provide EDD. Al...d ...ssolv... samples are to be filte...d with 24 h...urs of rece...e...en those p...aced on hold ...ow l...mits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No. | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Michelle Dallabetta	H&A	1-17-23 1241		EC	1/17/23 1245
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	EC	1/17/23 1825		EC	1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 2.1/2.1 1.8/1.8 SCII

570-124252 Chain of Custody

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s)	COC No. 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin. California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124252-3
Address: 5755 8th Street East, ,	Due Date Requested 2/6/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_011523 (570-124252-1)	1/15/23	08 05 Pacific		Water			X	X	2	
EPBMC_011523 (570-124252-2)	1/15/23	08 55 Pacific		Water			X	X	2	
EPBBC_011523 (570-124252-3)	1/15/23	07 20 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124252-4

Login Number: 124252
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124252-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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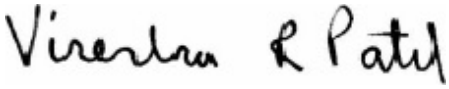
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
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(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-5

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.
X	Carrier is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124252-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124252-5

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.8º C, 1.9º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6. The samples were adjusted to the appropriate pH in the laboratory.

Job#: 570-124260 -1
Job#: 570-124252 -1.2.3
Job#: 570-124263 -1,2
Job#: 570-124262 -1

The following samples were received outside of holding time for NO3,NO2 & Cr VI: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3).

RAD
Method 900.0: Gross Alpha and Gross Beta batch 598534
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 598534
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3), (LCS 160-598534/2-A), (LCSB 160-598534/3-A), (MB 160-598534/1-A), (570-124230-R-1-G), (570-124230-R-1-J DU), (570-124230-R-1-H MS) and (570-124230-R-1-I MSBT)

Method 901.1: Gamma Prep Batch 160-597949
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224

Job ID: 570-124252-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3), (570-123901-U-2-E) and (570-123901-U-2-F DU)

Method 901.1: Gamma Prep Batch 160-597709
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3) and (570-124252-U-1-F DU)

Method 903.0: Radium-226 batch 597616
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time

Job ID: 570-124252-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

applied as the Activity Reference Date.
EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3), (LCS 160-597616/2-A), (MB 160-597616/1-A), (160-48612-B-1-A) and (160-48612-D-1-A DU)

Methods 903.0, 9315: Radium-226 batch 598000
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3), (LCS 160-598000/2-A), (LCSD 160-598000/3-A) and (MB 160-598000/1-A)

Method 904.0: Radium 228 batch 597622
The LCS recovered at (126%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-597622/2-A)

Method 904.0: Radium 228 batch 597622
The detection goal was not met for the following sample(s). Samples are prepped at a reduced volume due to the presence of matrix interferences: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3), (160-48612-B-1-B) and (160-48612-D-1-B DU). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium 228 batch 597622
The lower control limit (40%) for the following sample: EPBLLC_011523 (570-124252-1). There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method 904.0: Radium 228 batch 597622
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3), (LCS 160-597622/2-A), (MB 160-597622/1-A), (160-48612-B-1-B) and (160-48612-D-1-B DU)

Methods 904.0, 9320: Radium-228 batch 598012
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3), (LCS 160-598012/2-A), (LCSD 160-598012/3-A) and (MB 160-598012/1-A)

Method 905: Strontium prep batch 160-597624:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3), (LCS 160-597624/2-A), (LCSD 160-597624/3-A) and (MB 160-597624/1-A)

Method 905: Strontium-90 prep batch 160-598546:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3)

Job ID: 570-124252-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Methods 900.0, 905: Gross Alpha Beta prep batch 160-598892:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. (LCS 160-598546/2-A), (LCSD 160-598546/3-A) and (MB 160-598546/1-A)

Method 906.0: Tritium 598717
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3), (LCS 160-598717/2-A), (MB 160-598717/1-A), (570-124392-Q-1-A), (570-124392-Q-1-B DU), (570-124868-Q-1-A) and (570-124868-Q-1-B MS)

Method A-01-R: Isotopic Uranium batch 598078
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2), EPBBC_011523 (570-124252-3), (LCS 160-598078/2-A), (MB 160-598078/1-A), (570-124263-K-2-C) and (570-124263-K-2-D DU)

Method ExtChrom: Uranium Prep Batch 160-597078:

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3).

Method PrecSep_0:

Method PrecSep_0: Radium-228 Prep Batch 160-598012

The following samples were prepared at a reduced aliquot due to Matrix: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0: Radium 228 prep batch 160-597622

The yttrium recovery is outside the lower control limit (40%) for the following samples: EPBLLC_011523 (570-124252-1) and EPBBC_011523 (570-124252-3). There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method PrecSep-21:

Method PrecSep-21: Radium-226 Prep Batch 160-598000

The following samples were prepared at a reduced aliquot due to Matrix: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-597624

The following samples were prepared at a reduced aliquot due to Matrix: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Job ID: 570-124252-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method PrecSep-7: Strontium-90 Prep Batch 160-598546

Insufficient sample volume was available to perform a sample duplicate for the following samples: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-598546

The following samples were prepared at a reduced aliquot due to Matrix: EPBLLC_011523 (570-124252-1), EPBMC_011523 (570-124252-2) and EPBBC_011523 (570-124252-3). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-5

Client Sample ID: EPBLLC_011523 — Lab Sample ID: 570-124252-1

No Detections.

Client Sample ID: EPBMC_011523 — Lab Sample ID: 570-124252-2

No Detections.

Client Sample ID: EPBBC_011523 — Lab Sample ID: 570-124252-3

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**27.7**	**G**	13.6	14.0	3.00	18.3	pCi/L	01/27/23 10:37	02/13/23 16:18	1
Gross Beta	3.86	U G	3.50	3.52	4.00	5.12	pCi/L	01/27/23 10:37	02/13/23 16:18	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	4.41	U G	3.21	3.25	3.00	4.78	pCi/L	01/27/23 10:37	02/13/23 16:13	1
Gross Beta	**3.25**		1.28	1.32	4.00	1.66	pCi/L	01/27/23 10:37	02/13/23 16:13	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	2.03	U G	2.36	2.37	3.00	3.88	pCi/L	01/27/23 10:37	02/16/23 16:39	1
Gross Beta	**2.80**		0.947	0.988	4.00	1.26	pCi/L	01/27/23 10:37	02/16/23 16:39	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**25.2**	**G**	13.8	14.1	3.00	19.8	pCi/L	01/27/23 10:37	02/13/23 18:37	1
Gross Beta	**20.0**	**G**	4.85	5.25	4.00	5.51	pCi/L	01/27/23 10:37	02/13/23 18:37	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.73	U G	4.14	4.15	3.00	7.29	pCi/L	01/27/23 10:37	02/13/23 18:37	1
Gross Beta	**3.63**		1.73	1.77	4.00	2.50	pCi/L	01/27/23 10:37	02/13/23 18:37	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**2.92**		1.90	1.93	3.00	2.68	pCi/L	01/27/23 10:37	02/13/23 18:37	1
Gross Beta	**3.51**		0.837	0.907	4.00	0.958	pCi/L	01/27/23 10:37	02/13/23 18:37	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.848	U	5.96	5.97	20.0	7.48	pCi/L	01/20/23 14:22	02/20/23 18:34	1
Potassium-40	59.2	U	55.3	55.8		80.9	pCi/L	01/20/23 14:22	02/20/23 18:34	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-4.15	U	8.26	8.27	20.0	9.86	pCi/L	01/20/23 14:22	02/20/23 20:55	1
Potassium-40	-59.2	U	115	116		124	pCi/L	01/20/23 14:22	02/20/23 20:55	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.04	U	7.08	7.08	20.0	8.82	pCi/L	01/20/23 14:22	02/20/23 20:31	1
Potassium-40	-35.0	U	105	105		139	pCi/L	01/20/23 14:22	02/20/23 20:31	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-6.60	U	13.4	13.4	20.0	16.0	pCi/L	01/23/23 15:17	02/08/23 11:56	1
Potassium-40	-15.9	U	144	144		165	pCi/L	01/23/23 15:17	02/08/23 11:56	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.414	U	7.51	7.51	20.0	9.37	pCi/L	01/23/23 15:17	02/08/23 14:04	1
Potassium-40	-47.5	U	73.7	73.9		116	pCi/L	01/23/23 15:17	02/08/23 14:04	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-5.43	U	12.2	12.2	20.0	14.7	pCi/L	01/23/23 15:17	02/08/23 17:16	1
Potassium-40	13.6	U	125	125		145	pCi/L	01/23/23 15:17	02/08/23 17:16	1

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.278	U	0.286	0.287	1.00	0.454	pCi/L	01/20/23 12:30	02/13/23 15:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.4*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:28*	*1*

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0625	U	0.0843	0.0845	1.00	0.142	pCi/L	01/20/23 12:30	02/13/23 15:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.0*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:29*	*1*

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0638	U	0.0737	0.0739	1.00	0.118	pCi/L	01/20/23 12:30	02/13/23 15:29	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.0*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:29*	*1*

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.151**		0.0993	0.100	1.00	0.135	pCi/L	01/24/23 10:22	02/15/23 10:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.7*		*40 - 110*	*01/24/23 10:22*	*02/15/23 10:09*	*1*

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0266	U	0.0580	0.0580	1.00	0.108	pCi/L	01/24/23 10:22	02/15/23 10:11	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.4*		*40 - 110*	*01/24/23 10:22*	*02/15/23 10:11*	*1*

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0546	U	0.0737	0.0739	1.00	0.124	pCi/L	01/24/23 10:22	02/15/23 10:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*01/24/23 10:22*	*02/15/23 10:13*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	3.25	U G	3.42	3.44	1.00	5.59	pCi/L	01/20/23 12:59	01/26/23 12:20	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.4*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:20*	*1*
Y Carrier	*28.0*	*X*	*40 - 110*	*01/20/23 12:59*	*01/26/23 12:20*	*1*

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.201	U G	0.674	0.674	1.00	1.19	pCi/L	01/20/23 12:59	01/26/23 12:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.0*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:21*	*1*
Y Carrier	*41.5*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:21*	*1*

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0750	U G	0.778	0.778	1.00	1.39	pCi/L	01/20/23 12:59	01/26/23 12:21	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*76.0*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:21*	*1*
Y Carrier	*40.0*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:21*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.264	U	0.423	0.424	1.00	0.723	pCi/L	01/24/23 10:38	01/31/23 12:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*83.7*		*40 - 110*	*01/24/23 10:38*	*01/31/23 12:23*	*1*
Y Carrier	*84.5*		*40 - 110*	*01/24/23 10:38*	*01/31/23 12:23*	*1*

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.226	U	0.340	0.340	1.00	0.710	pCi/L	01/24/23 10:38	01/31/23 12:23	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.4*		*40 - 110*	*01/24/23 10:38*	*01/31/23 12:23*	*1*
Y Carrier	*86.0*		*40 - 110*	*01/24/23 10:38*	*01/31/23 12:23*	*1*

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.197	U	0.437	0.437	1.00	0.761	pCi/L	01/24/23 10:38	01/31/23 12:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.7*		*40 - 110*	*01/24/23 10:38*	*01/31/23 12:26*	*1*
Y Carrier	*88.2*		*40 - 110*	*01/24/23 10:38*	*01/31/23 12:26*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	**1.59**		0.841	0.851	3.00	1.24	pCi/L	01/20/23 13:08	01/30/23 17:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*80.7*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:22*	*1*
Y Carrier	*86.7*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:22*	*1*

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.502	U	0.374	0.376	3.00	0.580	pCi/L	01/20/23 13:08	01/30/23 17:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*82.5*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:22*	*1*
Y Carrier	*84.9*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:22*	*1*

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.263	U	0.436	0.436	3.00	0.735	pCi/L	01/20/23 13:08	01/30/23 17:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.0*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:22*	*1*
Y Carrier	*84.9*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:22*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	**0.677**		0.408	0.412	3.00	0.620	pCi/L	01/27/23 12:54	02/08/23 16:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.8*		*40 - 110*	*01/27/23 12:54*	*02/08/23 16:05*	*1*
Y Carrier	*89.0*		*40 - 110*	*01/27/23 12:54*	*02/08/23 16:05*	*1*

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.590	U	0.410	0.413	3.00	0.622	pCi/L	01/27/23 12:54	02/08/23 16:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*80.8*		*40 - 110*	*01/27/23 12:54*	*02/08/23 16:05*	*1*
Y Carrier	*72.1*		*40 - 110*	*01/27/23 12:54*	*02/08/23 16:05*	*1*

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.231	U	0.329	0.329	3.00	0.637	pCi/L	01/27/23 12:54	02/08/23 16:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*89.6*		*40 - 110*	*01/27/23 12:54*	*02/08/23 16:06*	*1*
Y Carrier	*87.1*		*40 - 110*	*01/27/23 12:54*	*02/08/23 16:06*	*1*

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-0.450	U	161	161	500	296	pCi/L	01/31/23 12:11	02/01/23 22:16	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	40.1	U	157	157	500	275	pCi/L	01/31/23 12:11	02/01/23 22:39	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-50.5	U	149	149	500	281	pCi/L	01/31/23 12:11	02/01/23 23:02	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	14.3		2.72	2.85	1.00	0.725	pCi/L	01/24/23 12:57	02/13/23 13:44	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	2.35		0.658	0.672	1.00	0.237	pCi/L	01/24/23 12:57	02/13/23 13:44	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	1.78		0.605	0.615	1.00	0.380	pCi/L	01/24/23 12:57	02/13/23 13:51	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBLLC_011523
Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	12.5		1.39	1.57	1.00	0.247	pCi/L	01/24/23 12:57	02/13/23 13:44	1

Client Sample ID: EPBMC_011523
Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	2.42		0.639	0.653	1.00	0.233	pCi/L	01/24/23 12:57	02/13/23 13:44	1

Client Sample ID: EPBBC_011523
Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	1.49		0.475	0.484	1.00	0.258	pCi/L	01/24/23 12:57	02/13/23 13:51	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-5

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
160-48612-D-1-A DU	Duplicate	79.4
570-124252-1	EPBLLC_011523	79.4
570-124252-2	EPBMC_011523	76.0
570-124252-3	EPBBC_011523	76.0
LCS 160-597616/2-A	Lab Control Sample	96.3
LCS 160-598000/2-A	Lab Control Sample	94.3
LCSD 160-598000/3-A	Lab Control Sample Dup	96.3
MB 160-597616/1-A	Method Blank	85.4
MB 160-598000/1-A	Method Blank	90.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (40-110)
570-124252-1	EPBLLC_011523	83.7
570-124252-2	EPBMC_011523	89.4
570-124252-3	EPBBC_011523	91.7

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (40-110)	Y (40-110)
160-48612-D-1-B DU	Duplicate	79.4	50.1
570-124252-1	EPBLLC_011523	79.4	28.0 X
570-124252-2	EPBMC_011523	76.0	41.5
570-124252-3	EPBBC_011523	76.0	40.0
LCS 160-597622/2-A	Lab Control Sample	96.3	49.3
LCS 160-598012/2-A	Lab Control Sample	94.3	85.2
LCSD 160-598012/3-A	Lab Control Sample Dup	96.3	85.6
MB 160-597622/1-A	Method Blank	85.4	59.4
MB 160-598012/1-A	Method Blank	90.6	82.6

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124252-5
Project/Site: Boeing SSFL ISRA and BMP

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124252-1	EPBLLC_011523	83.7	84.5
570-124252-2	EPBMC_011523	89.4	86.0
570-124252-3	EPBBC_011523	91.7	88.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124252-1	EPBLLC_011523	80.7	86.7
570-124252-2	EPBMC_011523	82.5	84.9
570-124252-3	EPBBC_011523	86.0	84.9
LCS 160-597624/2-A	Lab Control Sample	90.8	84.1
LCS 160-598546/2-A	Lab Control Sample	85.4	87.5
LCSD 160-597624/3-A	Lab Control Sample Dup	87.3	88.2
LCSD 160-598546/3-A	Lab Control Sample Dup	88.3	86.4
MB 160-597624/1-A	Method Blank	89.1	85.6
MB 160-598546/1-A	Method Blank	87.1	87.1

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124252-1	EPBLLC_011523	87.8	89.0
570-124252-2	EPBMC_011523	80.8	72.1
570-124252-3	EPBBC_011523	89.6	87.1

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-598078/2-A	Lab Control Sample	85.2
MB 160-598078/1-A	Method Blank	82.1

Tracer/Carrier Legend

U-232 = Uranium-232

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124252-5
Project/Site: Boeing SSFL ISRA and BMP

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	U-232 (30-110)							
570-124263-K-2-D DU	Duplicate	73.4							

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-598534/1-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598534

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.2749	U	0.539	0.540	3.00	1.11	pCi/L	01/27/23 10:37	02/13/23 16:16	1
Gross Beta	0.3954	U	0.533	0.534	4.00	0.888	pCi/L	01/27/23 10:37	02/13/23 16:16	1

Lab Sample ID: LCS 160-598534/2-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	47.97		7.10	3.00	2.38	pCi/L	95	75 - 125

Lab Sample ID: LCSB 160-598534/3-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	67.26		7.25	4.00	0.956	pCi/L	91	75 - 125

Lab Sample ID: 570-124230-R-1-H MS
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	2.61		50.5	33.45		5.21	3.00	1.74	pCi/L	61	60 - 140

Lab Sample ID: 570-124230-R-1-I MSBT
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	3.65		73.7	75.89		8.13	4.00	0.892	pCi/L	98	60 - 140

Lab Sample ID: 570-124230-R-1-J DU
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	2.61		1.519	U	1.20	3.00	1.80	pCi/L	0.37	1
Gross Beta	3.65		2.505		0.804	4.00	0.976	pCi/L	0.66	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597709/1-A
Matrix: Water
Analysis Batch: 600999

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597709

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.201	U	9.37	9.37	20.0	11.7	pCi/L	01/20/23 14:22	02/20/23 18:19	1
Potassium-40	-11.33	U	161	161		182	pCi/L	01/20/23 14:22	02/20/23 18:19	1

Lab Sample ID: LCS 160-597709/2-A
Matrix: Water
Analysis Batch: 601005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597709

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	137900		16400		298	pCi/L	102	75 - 125
Cesium-137	40900	42040		5010	20.0	72.3	pCi/L	103	75 - 125
Cobalt-60	18000	18800		2240		42.9	pCi/L	104	75 - 125

Lab Sample ID: 570-124252-1 DU
Matrix: Water
Analysis Batch: 600999

Client Sample ID: EPBLLC_011523
Prep Type: Total/NA
Prep Batch: 597709

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	0.848	U	-2.934	U	8.67	20.0	10.7	pCi/L	0.26	1
Potassium-40	59.2	U	133.7		94.8		91.6	pCi/L	0.49	1

Lab Sample ID: MB 160-597949/1-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597949

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.297	U	6.65	6.65	20.0	8.59	pCi/L	01/23/23 15:17	02/08/23 14:01	1
Potassium-40	43.04	U	107	107		122	pCi/L	01/23/23 15:17	02/08/23 14:01	1

Lab Sample ID: LCS 160-597949/2-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597949

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	147900		17600		344	pCi/L	109	75 - 125
Cesium-137	41000	39930		4760	20.0	101	pCi/L	97	75 - 125
Cobalt-60	18100	17850		2130		66.0	pCi/L	99	75 - 125

Lab Sample ID: 570-123901-U-2-F DU
Matrix: Water
Analysis Batch: 599622

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 597949

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	1.70	U	3.380	U	6.27	20.0	7.58	pCi/L	0.14	1
Potassium-40	82.3		-45.72	U	90.3		128	pCi/L	0.80	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-597616/1-A
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597616

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02734	U	0.0585	0.0585	1.00	0.106	pCi/L	01/20/23 12:30	02/13/23 15:23	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.4*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:23*	*1*

Lab Sample ID: LCS 160-597616/2-A
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597616

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.92		1.11	1.00	0.0938	pCi/L	96	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.3*		*40 - 110*

Lab Sample ID: 160-48612-D-1-A DU
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597616

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.0133	U		0.07048	U	0.0846	1.00	0.138	pCi/L			0.33	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*79.4*		*40 - 110*

Lab Sample ID: MB 160-598000/1-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598000

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02089	U	0.0448	0.0448	1.00	0.0825	pCi/L	01/24/23 10:22	02/15/23 10:07	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*01/24/23 10:22*	*02/15/23 10:07*	*1*

Lab Sample ID: LCS 160-598000/2-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598000

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.66		1.09	1.00	0.0723	pCi/L	94	75 - 125		

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-598000/2-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598000

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	94.3		40 - 110

Lab Sample ID: LCSD 160-598000/3-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598000

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.99		1.12	1.00	0.116	pCi/L	97	75 - 125	0.15	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	96.3		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-597622/1-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597622

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1588	U	0.399	0.399	1.00	0.686	pCi/L	01/20/23 12:59	01/26/23 12:13	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.4		40 - 110	01/20/23 12:59	01/26/23 12:13	1
Y Carrier	59.4		40 - 110	01/20/23 12:59	01/26/23 12:13	1

Lab Sample ID: LCS 160-597622/2-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597622

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.24	10.41		1.36	1.00	0.674	pCi/L	126	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	96.3		40 - 110
Y Carrier	49.3		40 - 110

Lab Sample ID: 160-48612-D-1-B DU
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597622

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.549	U G		0.3935	U	0.527	1.00	0.877	pCi/L			0.13	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: 160-48612-D-1-B DU
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597622

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	79.4		40 - 110
Y Carrier	50.1		40 - 110

Lab Sample ID: MB 160-598012/1-A
Matrix: Water
Analysis Batch: 598848

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598012

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2147	U	0.309	0.310	1.00	0.521	pCi/L	01/24/23 10:38	01/31/23 11:46	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110	01/24/23 10:38	01/31/23 11:46	1
Y Carrier	82.6		40 - 110	01/24/23 10:38	01/31/23 11:46	1

Lab Sample ID: LCS 160-598012/2-A
Matrix: Water
Analysis Batch: 598848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598012

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.23	8.192		1.13	1.00	0.455	pCi/L	100	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	94.3		40 - 110
Y Carrier	85.2		40 - 110

Lab Sample ID: LCSD 160-598012/3-A
Matrix: Water
Analysis Batch: 598848

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598012

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.23	7.773		1.08	1.00	0.444	pCi/L	94	75 - 125	0.19	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	96.3		40 - 110
Y Carrier	85.6		40 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-597624/1-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597624

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1919	U	0.177	0.177	3.00	0.284	pCi/L	01/20/23 13:08	01/30/23 17:13	1

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	89.1		40 - 110	01/20/23 13:08	01/30/23 17:13	1
Y Carrier	85.6		40 - 110	01/20/23 13:08	01/30/23 17:13	1

Lab Sample ID: LCS 160-597624/2-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597624

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	7.782		0.841	3.00	0.259	pCi/L	106	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	90.8		40 - 110
Y Carrier	84.1		40 - 110

Lab Sample ID: LCSD 160-597624/3-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597624

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	7.236		0.795	3.00	0.281	pCi/L	98	75 - 125	0.33	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	87.3		40 - 110
Y Carrier	88.2		40 - 110

Lab Sample ID: MB 160-598546/1-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598546

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1970	U	0.181	0.182	3.00	0.291	pCi/L	01/27/23 12:54	02/08/23 15:57	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	87.1		40 - 110	01/27/23 12:54	02/08/23 15:57	1
Y Carrier	87.1		40 - 110	01/27/23 12:54	02/08/23 15:57	1

Lab Sample ID: LCS 160-598546/2-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598546

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	7.382		0.816	3.00	0.271	pCi/L	100	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	85.4		40 - 110
Y Carrier	87.5		40 - 110

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCSD 160-598546/3-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598546

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	7.433		0.819	3.00	0.316	pCi/L	101	75 - 125	0.03	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*88.3*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-598717/1-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598717

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-27.93	U	147	147	500	270	pCi/L	01/31/23 12:11	02/01/23 21:31	1

Lab Sample ID: LCS 160-598717/2-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598717

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2110	1839		333	500	270	pCi/L	87	75 - 125		

Lab Sample ID: 570-124868-Q-1-B MS
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	123	U	2160	2177		373	500	286	pCi/L	95	60 - 140		

Lab Sample ID: 570-124392-Q-1-B DU
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	0.901	U		2.703	U	159	500	289	pCi/L			0.01	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-598078/1-A
Matrix: Water
Analysis Batch: 600266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598078

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1667		0.1389	0.1391	1.00	0.146	pCi/L	01/24/23 12:57	02/13/23 13:42	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: MB 160-598078/1-A
Matrix: Water
Analysis Batch: 600266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598078

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.1667		0.1389	0.1391	1.00	0.146	pCi/L	01/24/23 12:57	02/13/23 13:42	1

Lab Sample ID: LCS 160-598078/2-A
Matrix: Water
Analysis Batch: 600267

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598078

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.05		1.53	1.00	0.100	pCi/L	102	75 - 125		
Uranium-238			13.0	13.26		1.55	1.00	0.114	pCi/L	102	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*85.2*		*30 - 110*

Lab Sample ID: 570-124263-K-2-D DU
Matrix: Water
Analysis Batch: 600236

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 598078

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.0601	U		0.2092	U	0.206	1.00	0.250	pCi/L			0.35	1
Total Uranium	0.0601	U		0.2092	U	0.206	1.00	0.250	pCi/L			0.35	1

Rad

Filtration Batch: 597489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-U-2-F DU	Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 597606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	Filtration	
570-124252-2	EPBMC_011523	Dissolved	Water	Filtration	
570-124252-3	EPBBC_011523	Dissolved	Water	Filtration	
570-124263-K-2-D DU	Duplicate	Dissolved	Water	Filtration	

Prep Batch: 597616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	PrecSep-21	
570-124252-2	EPBMC_011523	Total/NA	Water	PrecSep-21	
570-124252-3	EPBBC_011523	Total/NA	Water	PrecSep-21	
MB 160-597616/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597616/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-48612-D-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 597622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	PrecSep_0	
570-124252-2	EPBMC_011523	Total/NA	Water	PrecSep_0	
570-124252-3	EPBBC_011523	Total/NA	Water	PrecSep_0	
MB 160-597622/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597622/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-48612-D-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 597624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	PrecSep-7	
570-124252-2	EPBMC_011523	Total/NA	Water	PrecSep-7	
570-124252-3	EPBBC_011523	Total/NA	Water	PrecSep-7	
MB 160-597624/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-597624/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597624/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	Fill_Geo-0	
570-124252-2	EPBMC_011523	Total/NA	Water	Fill_Geo-0	
570-124252-3	EPBBC_011523	Total/NA	Water	Fill_Geo-0	
MB 160-597709/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597709/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-124252-1 DU	EPBLLC_011523	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	Fill_Geo-0	597606
570-124252-2	EPBMC_011523	Dissolved	Water	Fill_Geo-0	597606
570-124252-3	EPBBC_011523	Dissolved	Water	Fill_Geo-0	597606
MB 160-597949/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	

Rad (Continued)

Prep Batch: 597949 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-597949/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123901-U-2-F DU	Duplicate	Dissolved	Water	Fill_Geo-0	597489

Prep Batch: 598000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	PrecSep-21	597606
570-124252-2	EPBMC_011523	Dissolved	Water	PrecSep-21	597606
570-124252-3	EPBBC_011523	Dissolved	Water	PrecSep-21	597606
MB 160-598000/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-598000/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-598000/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 598012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	PrecSep_0	597606
570-124252-2	EPBMC_011523	Dissolved	Water	PrecSep_0	597606
570-124252-3	EPBBC_011523	Dissolved	Water	PrecSep_0	597606
MB 160-598012/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-598012/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-598012/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 598078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	ExtChrom	597606
570-124252-1	EPBLLC_011523	Total/NA	Water	ExtChrom	
570-124252-2	EPBMC_011523	Dissolved	Water	ExtChrom	597606
570-124252-2	EPBMC_011523	Total/NA	Water	ExtChrom	
570-124252-3	EPBBC_011523	Dissolved	Water	ExtChrom	597606
570-124252-3	EPBBC_011523	Total/NA	Water	ExtChrom	
MB 160-598078/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-598078/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-124263-K-2-D DU	Duplicate	Dissolved	Water	ExtChrom	597606

Prep Batch: 598534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	Evaporation	597606
570-124252-1	EPBLLC_011523	Total/NA	Water	Evaporation	
570-124252-2	EPBMC_011523	Dissolved	Water	Evaporation	597606
570-124252-2	EPBMC_011523	Total/NA	Water	Evaporation	
570-124252-3	EPBBC_011523	Dissolved	Water	Evaporation	597606
570-124252-3	EPBBC_011523	Total/NA	Water	Evaporation	
MB 160-598534/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598534/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598534/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-124230-R-1-H MS	Matrix Spike	Total/NA	Water	Evaporation	
570-124230-R-1-I MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-124230-R-1-J DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 598546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Dissolved	Water	PrecSep-7	597606

Rad (Continued)

Prep Batch: 598546 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-2	EPBMC_011523	Dissolved	Water	PrecSep-7	597606
570-124252-3	EPBBC_011523	Dissolved	Water	PrecSep-7	597606
MB 160-598546/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-598546/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-598546/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 598717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-1	EPBLLC_011523	Total/NA	Water	LSC_Dist_Susp	
570-124252-2	EPBMC_011523	Total/NA	Water	LSC_Dist_Susp	
570-124252-3	EPBBC_011523	Total/NA	Water	LSC_Dist_Susp	
MB 160-598717/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-598717/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-124868-Q-1-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-124392-Q-1-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-5

Client Sample ID: EPBLLC_011523

Date Collected: 01/15/23 08:05
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Evaporation			34.64 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Dissolved	Analysis	900.0		1	1.0 mL	1.0 mL	600138	02/13/23 18:37	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			32.04 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	600145	02/13/23 16:18	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597949	01/23/23 15:17	JML	EET SL
Dissolved	Analysis	901.1		1			599616	02/08/23 11:56	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597709	01/20/23 14:22	JML	EET SL
Total/NA	Analysis	901.1		1			601006	02/20/23 18:34	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep-21			744.58 mL	1.0 g	598000	01/24/23 10:22	DJP	EET SL
Dissolved	Analysis	903.0		1			600464	02/15/23 10:09	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			254.47 mL	1.0 g	597616	01/20/23 12:30	DJP	EET SL
Total/NA	Analysis	903.0		1			600139	02/13/23 15:28	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep_0			744.58 mL	1.0 g	598012	01/24/23 10:38	DJP	EET SL
Dissolved	Analysis	904.0		1			598850	01/31/23 12:23	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			254.47 mL	1.0 g	597622	01/20/23 12:59	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	598283	01/26/23 12:20	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep-7			496.66 mL	1.0 g	598546	01/27/23 12:54	DJP	EET SL
Dissolved	Analysis	905		1			599763	02/08/23 16:05	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-7			256.67 mL	1.0 g	597624	01/20/23 13:08	DJP	EET SL
Total/NA	Analysis	905		1			598613	01/30/23 17:22	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			98.56 mL	1.0 g	598717	01/31/23 12:11	SEH	EET SL
Total/NA	Analysis	906.0		1			599486	02/01/23 22:16	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	ExtChrom			303.37 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Dissolved	Analysis	A-01-R		1			600273	02/13/23 13:44	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			98.62 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Total/NA	Analysis	A-01-R		1			600274	02/13/23 13:44	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-5

Client Sample ID: EPBMC_011523

Date Collected: 01/15/23 08:55
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Evaporation			78.55 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Dissolved	Analysis	900.0		1	1.0 mL	1.0 mL	600138	02/13/23 18:37	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			100.005 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Total/NA	Analysis	900.0		1			600161	02/13/23 16:13	FLC	EET SL
	Instrument ID: GFPCORANGE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597949	01/23/23 15:17	JML	EET SL
Dissolved	Analysis	901.1		1			599622	02/08/23 14:04	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597709	01/20/23 14:22	JML	EET SL
Total/NA	Analysis	901.1		1			601006	02/20/23 20:55	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep-21			749.38 mL	1.0 g	598000	01/24/23 10:22	DJP	EET SL
Dissolved	Analysis	903.0		1			600464	02/15/23 10:11	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			740.65 mL	1.0 g	597616	01/20/23 12:30	DJP	EET SL
Total/NA	Analysis	903.0		1			600139	02/13/23 15:29	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep_0			749.38 mL	1.0 g	598012	01/24/23 10:38	DJP	EET SL
Dissolved	Analysis	904.0		1			598850	01/31/23 12:23	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			740.65 mL	1.0 g	597622	01/20/23 12:59	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	598283	01/26/23 12:21	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep-7			490.57 mL	1.0 g	598546	01/27/23 12:54	DJP	EET SL
Dissolved	Analysis	905		1			599763	02/08/23 16:05	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-7			504.79 mL	1.0 g	597624	01/20/23 13:08	DJP	EET SL
Total/NA	Analysis	905		1			598613	01/30/23 17:22	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			97.32 mL	1.0 g	598717	01/31/23 12:11	SEH	EET SL
Total/NA	Analysis	906.0		1			599486	02/01/23 22:39	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	ExtChrom			303.14 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Dissolved	Analysis	A-01-R		1			600276	02/13/23 13:44	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			253.45 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Total/NA	Analysis	A-01-R		1			600275	02/13/23 13:44	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-5

Client Sample ID: EPBBC_011523

Date Collected: 01/15/23 07:20
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124252-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Evaporation			200.00 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Dissolved	Analysis	900.0		1	1.0 mL	1.0 mL	600138	02/13/23 18:37	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			159.57 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	600561	02/16/23 16:39	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597949	01/23/23 15:17	JML	EET SL
Dissolved	Analysis	901.1		1			599616	02/08/23 17:16	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597709	01/20/23 14:22	JML	EET SL
Total/NA	Analysis	901.1		1			601005	02/20/23 20:31	SCB	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep-21			740.84 mL	1.0 g	598000	01/24/23 10:22	DJP	EET SL
Dissolved	Analysis	903.0		1			600464	02/15/23 10:13	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			740.50 mL	1.0 g	597616	01/20/23 12:30	DJP	EET SL
Total/NA	Analysis	903.0		1			600139	02/13/23 15:29	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep_0			740.84 mL	1.0 g	598012	01/24/23 10:38	DJP	EET SL
Dissolved	Analysis	904.0		1			598849	01/31/23 12:26	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			740.50 mL	1.0 g	597622	01/20/23 12:59	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	598283	01/26/23 12:21	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep-7			492.97 mL	1.0 g	598546	01/27/23 12:54	DJP	EET SL
Dissolved	Analysis	905		1			599763	02/08/23 16:06	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-7			508.77 mL	1.0 g	597624	01/20/23 13:08	DJP	EET SL
Total/NA	Analysis	905		1			598613	01/30/23 17:22	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			95.47 mL	1.0 g	598717	01/31/23 12:11	SEH	EET SL
Total/NA	Analysis	906.0		1			599486	02/01/23 23:02	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	ExtChrom			298.95 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Dissolved	Analysis	A-01-R		1			600221	02/13/23 13:51	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			254.34 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Total/NA	Analysis	A-01-R		1			600217	02/13/23 13:51	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-5

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124252-5
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-5

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124252-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124252-1	EPBLLC_011523	Water	01/15/23 08:05	01/17/23 18:25
570-124252-2	EPBMC_011523	Water	01/15/23 08:55	01/17/23 18:25
570-124252-3	EPBBC_011523	Water	01/15/23 07:20	01/17/23 18:25

124252

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. Dominick	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 395-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-08	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E908.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.7: B, Zn; – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr Cu, Fe, Mn, Ni, Pb Se, Sb, Tl; Method 200.7: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
1 EPBLLC_011523	1-15-23	0805	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2 EPBMC_011523	1-15-23	0855	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3 EPBBC_011523	1-15-23	0720	G	WM	21			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EPBC__			G	WM	21																				
EPB_VC			G	WM	21																				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

MS MSD

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyald..h.com and post to ..otal Acce-s, B..r to Haley & Aldrich at AP@ha..yaldrich.com Report ..ev.. Data Package and provide EDD. Al..d ..ssolv.. samples are to be filte..d with 24 h..urs of rece..p.. even those p..aced on hold ..ow l..mits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No. | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by: Michelle Dallabetta	Company: H&A	Date/Time: 1-17-23 1245	Received by:	EC	Date/Time: 1/17/23 1245
Relinquished by:	Company: EC	Date/Time: 1/17/23 1825	Received by:	EC	Date/Time: 1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 2.1/2.1 1.8/1.8 SCH

SAP COC 2019/2020 VERSION 3

570-124252 Chain of Custody

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM. Patel Virendra	Carrier Tracking No(s):	COC No. 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin. California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124252-3
Address: 5755 8th Street East, ,	**Due Date Requested** 2/6/2023			
City: Tacoma	**TAT Requested (days)**			
State, Zip WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V MCAA
W pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_011523 (570-124252-1)	1/15/23	08 05 Pacific		Water			X	X	2	
EPBMC_011523 (570-124252-2)	1/15/23	08 55 Pacific		Water			X	X	2	
EPBBC_011523 (570-124252-3)	1/15/23	07 20 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/23/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204483.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-124252-5
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/21/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_011523 (570-124252-1)	1/15/23	08:05 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBMC_011523 (570-124252-2)	1/15/23	08:55 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBBC_011523 (570-124252-3)	1/15/23	07:20 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	[signature]	01/18/23 13:00	[illegible]	FEDEX		
	Relinquished by: FEDEX	Date/Time:	Company	Received by: Brianna Sharkey-Gonzalez	Date/Time: 1/19/23 9:00Am	Company ETASTL
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124252-5

Login Number: 124252
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124252-5

Login Number: 124252
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/19/23 11:16 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/23/2023 9:42:06 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124259-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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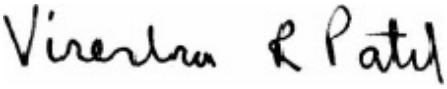
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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1/23/2023 9:42:06 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-1

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124259-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124259-1

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:23 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.3º C.

Metals
Method 200.8: The method blank for preparation batch 570-296798 and analytical batch 570-297030 contained Lead above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: LXBMP0010_20230114 (570-124259-1) and LXBMP0012_20230114 (570-124259-2). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-1

Client Sample ID: LXBMP0010_20230114 — Lab Sample ID: 570-124259-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2.7		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	5.3		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	0.40	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.19	J,DX BU MB	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	7.8		1.7	1.4	mg/L	1		SM 2540D	Total/NA

Client Sample ID: LXBMP0012_20230114 — Lab Sample ID: 570-124259-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.5	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	1.5		1.0	0.12	ug/L	1		200.8	Total Recoverable
Copper	0.79	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Total Suspended Solids	26		2.5	2.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: LXBMP0010_20230114
Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/20/23 08:34	01/20/23 13:47	1
Copper	**2.7**		2.0	0.32	ug/L		01/20/23 08:34	01/20/23 13:47	1
Lead	**5.3**		1.0	0.12	ug/L		01/20/23 08:34	01/20/23 13:47	1

Client Sample ID: LXBMP0012_20230114
Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/20/23 08:34	01/20/23 13:44	1
Copper	**1.5**	**J,DX**	2.0	0.32	ug/L		01/20/23 08:34	01/20/23 13:44	1
Lead	**1.5**		1.0	0.12	ug/L		01/20/23 08:34	01/20/23 13:44	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: LXBMP0010_20230114
Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/19/23 09:36	1
Copper	**0.40**	**J,DX BU**	2.0	0.32	ug/L			01/19/23 09:36	1
Lead	**0.19**	**J,DX BU MB**	1.0	0.12	ug/L			01/19/23 09:36	1

Client Sample ID: LXBMP0012_20230114
Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	BU	1.0	0.13	ug/L			01/19/23 09:38	1
Copper	**0.79**	**J,DX BU**	2.0	0.32	ug/L			01/19/23 09:38	1
Lead	ND	BU	1.0	0.12	ug/L			01/19/23 09:38	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-1

General Chemistry

Client Sample ID: LXBMP0010_20230114
Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	7.8		1.7	1.4	mg/L			01/18/23 12:03	1

Client Sample ID: LXBMP0012_20230114
Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	26		2.5	2.1	mg/L			01/18/23 12:03	1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-297319/1-A
Matrix: Water
Analysis Batch: 297473

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L		01/20/23 08:34	01/20/23 13:28	1
Copper	ND		2.0	0.32	ug/L		01/20/23 08:34	01/20/23 13:28	1
Lead	ND		1.0	0.12	ug/L		01/20/23 08:34	01/20/23 13:28	1

Lab Sample ID: LCS 570-297319/2-A
Matrix: Water
Analysis Batch: 297473

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium			80.0	82.6		ug/L		103	85 - 115		
Copper			80.0	85.6		ug/L		107	85 - 115		
Lead			80.0	82.2		ug/L		103	85 - 115		

Lab Sample ID: LCSD 570-297319/3-A
Matrix: Water
Analysis Batch: 297473

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	82.0		ug/L		103	85 - 115	1	20
Copper			80.0	86.1		ug/L		108	85 - 115	1	20
Lead			80.0	84.0		ug/L		105	85 - 115	2	20

Lab Sample ID: 570-124263-C-2-D MS
Matrix: Water
Analysis Batch: 297473

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium	ND		80.0	82.5		ug/L		103	80 - 120		
Copper	3.1		80.0	88.9		ug/L		107	80 - 120		
Lead	1.2		80.0	82.6		ug/L		102	80 - 120		

Lab Sample ID: 570-124263-C-2-E MSD
Matrix: Water
Analysis Batch: 297473

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	81.7		ug/L		102	80 - 120	1	20
Copper	3.1		80.0	89.1		ug/L		107	80 - 120	0	20
Lead	1.2		80.0	84.5		ug/L		104	80 - 120	2	20

Lab Sample ID: 570-124219-A-9-B MS
Matrix: Water
Analysis Batch: 297030

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium	ND		80.0	70.0		ug/L		88	80 - 120		
Copper	2.5		80.0	75.0		ug/L		91	80 - 120		
Lead	0.21	J,DX MB	80.0	71.9		ug/L		90	80 - 120		

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124219-A-9-C MSD
Matrix: Water
Analysis Batch: 297030

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	71.8		ug/L		90	80 - 120	3	20
Copper	2.5		80.0	76.2		ug/L		92	80 - 120	2	20
Lead	0.21	J,DX MB	80.0	74.2		ug/L		92	80 - 120	3	20

Lab Sample ID: MB 570-296798/1-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.13	ug/L			01/19/23 10:31	1
Copper	ND		2.0	0.32	ug/L			01/19/23 10:31	1
Lead	0.167	J,DX	1.0	0.12	ug/L			01/19/23 10:31	1

Lab Sample ID: LCS 570-296798/2-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	74.3		ug/L		93	85 - 115
Copper	80.0	74.4		ug/L		93	85 - 115
Lead	80.0	74.0		ug/L		93	85 - 115

Lab Sample ID: LCSD 570-296798/3-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	74.2		ug/L		93	85 - 115	0	20
Copper	80.0	74.8		ug/L		93	85 - 115	0	20
Lead	80.0	76.2		ug/L		95	85 - 115	3	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-296761/1
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/18/23 12:02	1

Lab Sample ID: LCS 570-296761/2
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	101		mg/L		101	77 - 116

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 570-296761/3
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	99.0		mg/L		99	77 - 116	2	10

Lab Sample ID: 570-124511-F-1 DU
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	120			110		mg/L				9	10

Metals

Filtration Batch: 296798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124259-1	LXBMP0010_20230114	Dissolved	Water	Filtration	
570-124259-2	LXBMP0012_20230114	Dissolved	Water	Filtration	
MB 570-296798/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124219-A-9-B MS	Matrix Spike	Dissolved	Water	Filtration	
570-124219-A-9-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 297030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124259-1	LXBMP0010_20230114	Dissolved	Water	200.8	296798
570-124259-2	LXBMP0012_20230114	Dissolved	Water	200.8	296798
570-124219-A-9-B MS	Matrix Spike	Dissolved	Water	200.8	296798
570-124219-A-9-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	296798

Analysis Batch: 297048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296798/1-A	Method Blank	Dissolved	Water	200.8	296798
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	200.8	296798
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	296798

Prep Batch: 297319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124259-1	LXBMP0010_20230114	Total Recoverable	Water	200.8	
570-124259-2	LXBMP0012_20230114	Total Recoverable	Water	200.8	
MB 570-297319/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-297319/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-297319/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-124263-C-2-D MS	Matrix Spike	Total Recoverable	Water	200.8	
570-124263-C-2-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 297471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124259-1	LXBMP0010_20230114	Total Recoverable	Water	200.8	297319
570-124259-2	LXBMP0012_20230114	Total Recoverable	Water	200.8	297319

Analysis Batch: 297473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-297319/1-A	Method Blank	Total Recoverable	Water	200.8	297319
LCS 570-297319/2-A	Lab Control Sample	Total Recoverable	Water	200.8	297319
LCSD 570-297319/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	297319
570-124263-C-2-D MS	Matrix Spike	Total Recoverable	Water	200.8	297319
570-124263-C-2-E MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	297319

General Chemistry

Analysis Batch: 296761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124259-1	LXBMP0010_20230114	Total/NA	Water	SM 2540D	
570-124259-2	LXBMP0012_20230114	Total/NA	Water	SM 2540D	
MB 570-296761/1	Method Blank	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 296761 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-296761/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-296761/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-124511-F-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-1

Client Sample ID: LXBMP0010_20230114

Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	296798	01/18/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			297030	01/19/23 09:36	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Total Recoverable	Prep	200.8			50 mL	50 mL	297319	01/20/23 08:34	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297471	01/20/23 13:47	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Total/NA	Analysis	SM 2540D		1	600 mL	1000 mL	296761	01/18/23 12:03	BDH9	EET CAL 4
	Instrument ID:	BAL62								

Client Sample ID: LXBMP0012_20230114

Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	296798	01/18/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			297030	01/19/23 09:38	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Total Recoverable	Prep	200.8			50 mL	50 mL	297319	01/20/23 08:34	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297471	01/20/23 13:44	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Total/NA	Analysis	SM 2540D		1	400 mL	1000 mL	296761	01/18/23 12:03	BDH9	EET CAL 4
	Instrument ID:	BAL62								

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124259-1
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-12-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-1

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124259-1	LXBMP0010_20230114	Water	01/14/23 10:00	01/17/23 18:23
570-124259-2	LXBMP0012_20230114	Water	01/14/23 11:00	01/17/23 18:23

124259

Chain of Custody Record for Chain of Custody Record

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

estAmerica ervices under thi CoC sha be performed in accordance with he T&Cs ithin Blanket Servi ce Agreement# 20 9-22 TestAmerica b, and between Haley & Aldrich c, its sub idiaries and affiliates and TestAmerica Laboratories nc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)						
								1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1 250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly						
A1BMP0002			G	WM	8	Y	N	X	X	X	X	X	X	X						
A1BMP0003			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0009			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0010			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0011			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0002			G	WM	8	Y	Y	X	X	X	X	X	X	X						
LBMP0004			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0005			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0008			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0002			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0003			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0004			G	WM	8	Y	Y	X	X	X	X	X	X	X						
LXBMP0010_20230114	01/14/23	1000	G	WM	8	Y	N	X	X	X	X	X	X	X						
LXBMP0012_20230114	01/14/23	1100	G	WM	8	Y	N	X	X	X	X	X	X	X						
ILQW0007			G	WM	6	Y	N	X	X	X	X	X								
EPNDSW04			G	WM	8	Y	N	X	X	X	X	X	X	X						
DUP01			G	WM	8	Y	N	X	X	X	X	X	X	X						
DUP02			G	WM	8	Y	N	X	X	X	X	X	X	X						
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1						

570-124259 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C). Obs'd. ____ Corr'd: ____ Therm ID No. ____

Relinquished by	Company: 01/14/23 JHA	Date/Time: 17/1853/1245	Received by: EC	Date/Time: 1/17/23 1245
Relinquished by	Company: EC	Date/Time: 1/17/23 1823	Received by:	Date/Time: 1/17/23 18 23
Relinquished by	Company:	Date/Time	Received in Laboratory by	Date/Time.

2.3/2.3 1.7/1.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

1/23/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124259-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0010_20230114 (570-124259-1)	1/14/23	10 00 Pacific		Water			X	X	2	
LXBMP0012_20230114 (570-124259-2)	1/14/23	11 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/18/23 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124259-1

Login Number: 124259
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124259-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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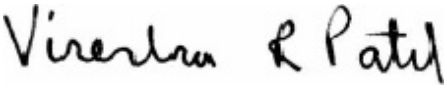
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124259-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124259-2

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:23 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.3º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: LXBMP0010_20230114 (570-124259-1), LXBMP0012_20230114 (570-124259-2), (CCV 320-651969/2) and (MB 320-651189/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client Sample ID: LXBMP0010_20230114 — Lab Sample ID: 570-124259-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2.8.7.T-4l DD	0P0000095	J.DX q	0P00010	0P0000008 2	uFSR	1		1618g	4oHyiSNd
1.2.8.7.T-j nl DD	0P0000012	J.DX	0P00050	0P0000002 2	uFSR	1		1618g	4oHyiSNd
1.2.8.7.T-j nl DL	0P00000076	J.DX 3 g	0P00050	0P0000001 5	uFSR	1		1618g	4oHyiSNd
2.8.9.7.T-j nl DL	0P00000072	J.DX	0P00050	0P0000001 C	uFSR	1		1618g	4oHyiSNd
1.2.8.9.7.T-axl DD	0P000002C	J.DX 3 g	0P00050	0P0000002 2	uFSR	1		1618g	4oHyiSNd
1.2.8.6.7.T-axl DD	0P0000081	J.DX	0P00050	0P0000002 1	uFSR	1		1618g	4oHyiSNd
1.2.8.7.T.C-axl DD	0P0000027	J.DX 3 g	0P00050	0P0000001 C	uFSR	1		1618g	4oHyiSNd
1.2.8.9.7.T-axl DL	0P000001T	J.DX 3 g	0P00050	0P0000002 0	uFSR	1		1618g	4oHyiSNd
1.2.8.6.7.T-axl DL	0P0000012	J.DX 3 g	0P00050	0P0000001 7	uFSR	1		1618g	4oHyiSNd
1.2.8.7.T.C-axl DL	0P0000070	J.DX 3 g	0P00050	0P0000001 6	uFSR	1		1618g	4oHyiSNd
2.8.9.6.7.T-axl DL	0P000000TC	J.DX 3 g	0P00050	0P0000001 5	uFSR	1		1618g	4oHyiSNd
1.2.8.9.6.7.T-apl DD	0P000052	3 g	0P00050	0P0000016	uFSR	1		1618g	4oHyiSNd
1.2.8.9.6.7.T-apl DL	0P00001C	J.DX 3 g	0P00050	0P0000006 8	uFSR	1		1618g	4oHyiSNd
1.2.8.9.7.T.C-apl DL	0P000001T	J.DX 3 g	0P00050	0P0000006 1	uFSR	1		1618g	4oHyiSNd
Ol DD	0P00096	3 g	0P00010	0P0000029	uFSR	1		1618g	4oHyiSNd
Ol DL	0P000067	J.DX 3 g	0P00010	0P0000009 7	uFSR	1		1618g	4oHyiSNd
4oHyi 4l DD	0P0000011	J.DX q 3 g	0P00010	0P0000008 2	uFSR	1		1618g	4oHyiSNd
4oHyi 4l DL	0P0000010	J.DX q 3 g	0P00010	0P0000001 2	uFSR	1		1618g	4oHyiSNd
4oHyi j nl DD	0P0000012	J.DX 3 g	0P00050	0P0000002 2	uFSR	1		1618g	4oHyiSNd
4oHyi j nl DL	0P0000022	J.DX q 3 g	0P00050	0P0000001 5	uFSR	1		1618g	4oHyiSNd
4oHyi axl DD	0P000016	J.DX q 3 g	0P00050	0P0000001 C	uFSR	1		1618g	4oHyiSNd
4oHyi axl DL	0P000012	J.DX q 3 g	0P00050	0P0000001 5	uFSR	1		1618g	4oHyiSNd
4oHyi apl DD	0P0000CC	3 g	0P00050	0P0000016	uFSR	1		1618g	4oHyiSNd
4oHyi apl DL	0P000058	J.DX 3 g	0P00050	0P0000006 1	uFSR	1		1618g	4oHyiSNd
2.8.7.T-4l DL - Md	0P00000060	J.DX	0P00010	0P0000008 9	uFSR	1		1618g	4oHyiSNd

Client Sample ID: LXBMP0012_20230114 — Lab Sample ID: 570-124259-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1.2.8.9.7.T-axl DD	0P0000029	J.DX 3 g	0P00050	0P0000001 7	uFSR	1		1618g	4oHyiSNd
1.2.8.6.7.T-axl DD	0P00000058	J.DX q	0P00050	0P0000001 7	uFSR	1		1618g	4oHyiSNd
1.2.8.7.T.C-axl DD	0P00000067	J.DX 3 g	0P00050	0P0000001 5	uFSR	1		1618g	4oHyiSNd

Detection Summary

l ient H: a yin& A dir oh, . It hP
j co/nhH Bh: g one F BBLRIBMd yt r g3 j

Job ID: 570-12925C-2

Client Sample ID: LXBMP0012_20230114 (Continued)

Lab Sample ID: 570-124259-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1.2.8.9.7.T-a xl DL	0P0000055	J.DX 3 g	0P00050	0P0000001 9	uFSR	1		1618g	4oHyiSNd
1.2.8.6.7.T-a xl DL	0P000008C	J.DX 3 g	0P00050	0P0000001 2	uFSR	1		1618g	4oHyiSNd
1.2.8.7.T.C-a xl DL	0P000008C	J.DX q 3 g	0P00050	0P00000011	uFSR	1		1618g	4oHyiSNd
2.8.9.6.7.T-a xl DL	0P00000082	J.DX q 3 g	0P00050	0P0000001 0	uFSR	1		1618g	4oHyiSNd
1.2.8.9.6.7.T-a pl DD	0P0000065	J.DX 3 g	0P00050	0P0000005 0	uFSR	1		1618g	4oHyiSNd
1.2.8.9.6.7.T-a pl DL	0P0000026	J.DX q 3 g	0P00050	0P0000002 7	uFSR	1		1618g	4oHyiSNd
Ol DD	0P000055	J.DX 3 g	0P0000CC	0P0000005 7	uFSR	1		1618g	4oHyiSNd
Ol DL	0P00000T5	J.DX 3 g	0P0000CC	0P0000002 7	uFSR	1		1618g	4oHyiSNd
4oHyi 4l DL	0P00000075	J.DX q 3 g	0P00000CC	0P00000011	uFSR	1		1618g	4oHyiSNd
4oHyi j nl DD	0P00000028	J.DX q 3 g	0P00050	0P0000002 8	uFSR	1		1618g	4oHyiSNd
4oHyi a xl DD	0P0000050	J.DX q 3 g	0P00050	0P0000001 5	uFSR	1		1618g	4oHyiSNd
4oHyi a xl DL	0P0000027	J.DX q 3 g	0P00050	0P0000001 0	uFSR	1		1618g	4oHyiSNd
4oHyi a pl DD	0P000018	J.DX 3 g	0P00050	0P0000005 0	uFSR	1		1618g	4oHyiSNd
4oHyi a pl DL	0P0000069	J.DX q 3 g	0P00050	0P0000002 7	uFSR	1		1618g	4oHyiSNd

4, es DnHhHet Bummyc&r ons t oHe hiur n cyr eh, nmeHyi HisHonsuiHsP

Eucofe s I yishent hn

2/13/2023

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: LXBMP0010_20230114
Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	0.00000045	J,DX q	0.000010	0.00000032	ug/L		02/02/23 06:24	02/05/23 19:26	1
1,2,3,7,8-PeCDD	0.0000012	J,DX	0.000050	0.00000022	ug/L		02/02/23 06:24	02/05/23 19:26	1
1,2,3,7,8-PeCDF	0.00000076	J,DX MB	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 19:26	1
2,3,4,7,8-PeCDF	0.00000072	J,DX	0.000050	0.00000019	ug/L		02/02/23 06:24	02/05/23 19:26	1
1,2,3,4,7,8-HxCDD	0.0000029	J,DX MB	0.000050	0.00000022	ug/L		02/02/23 06:24	02/05/23 19:26	1
1,2,3,6,7,8-HxCDD	0.0000031	J,DX	0.000050	0.00000021	ug/L		02/02/23 06:24	02/05/23 19:26	1
1,2,3,7,8,9-HxCDD	0.0000027	J,DX MB	0.000050	0.00000019	ug/L		02/02/23 06:24	02/05/23 19:26	1
1,2,3,4,7,8-HxCDF	0.0000018	J,DX MB	0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 19:26	1
1,2,3,6,7,8-HxCDF	0.0000012	J,DX MB	0.000050	0.00000017	ug/L		02/02/23 06:24	02/05/23 19:26	1
1,2,3,7,8,9-HxCDF	0.00000070	J,DX MB	0.000050	0.00000016	ug/L		02/02/23 06:24	02/05/23 19:26	1
2,3,4,6,7,8-HxCDF	0.00000089	J,DX MB	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 19:26	1
1,2,3,4,6,7,8-HpCDD	0.000052	MB	0.000050	0.0000016	ug/L		02/02/23 06:24	02/05/23 19:26	1
1,2,3,4,6,7,8-HpCDF	0.000019	J,DX MB	0.000050	0.00000063	ug/L		02/02/23 06:24	02/05/23 19:26	1
1,2,3,4,7,8,9-HpCDF	0.0000018	J,DX MB	0.000050	0.00000061	ug/L		02/02/23 06:24	02/05/23 19:26	1
OCDD	0.00046	MB	0.00010	0.0000024	ug/L		02/02/23 06:24	02/05/23 19:26	1
OCDF	0.000067	J,DX MB	0.00010	0.00000047	ug/L		02/02/23 06:24	02/05/23 19:26	1
Total TCDD	0.0000011	J,DX q MB	0.000010	0.00000032	ug/L		02/02/23 06:24	02/05/23 19:26	1
Total TCDF	0.0000010	J,DX q MB	0.000010	0.00000012	ug/L		02/02/23 06:24	02/05/23 19:26	1
Total PeCDD	0.0000012	J,DX MB	0.000050	0.00000022	ug/L		02/02/23 06:24	02/05/23 19:26	1
Total PeCDF	0.0000022	J,DX q MB	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 19:26	1
Total HxCDD	0.000016	J,DX q MB	0.000050	0.00000019	ug/L		02/02/23 06:24	02/05/23 19:26	1
Total HxCDF	0.000012	J,DX q MB	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 19:26	1
Total HpCDD	0.000099	MB	0.000050	0.0000016	ug/L		02/02/23 06:24	02/05/23 19:26	1
Total HpCDF	0.000053	J,DX MB	0.000050	0.00000061	ug/L		02/02/23 06:24	02/05/23 19:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*29 - 154*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-2,3,7,8-TCDF	*78*		*24 - 156*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-1,2,3,7,8-PeCDD	*83*		*29 - 181*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-1,2,3,7,8-PeCDF	*82*		*24 - 189*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-2,3,4,7,8-PeCDF	*73*		*21 - 178*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-1,2,3,4,7,8-HxCDD	*55*		*32 - 141*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-1,2,3,5,7,8-HxCDD	*77*		*28 - 130*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-1,2,3,4,7,8-HxCDF	*52*		*25 - 192*	*02/02/23 05:24*	*02/09/23 16:25*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LXBMP0010_20230114
Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,5,7,8-HxCDF	*79*		*25 - 123*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-1,2,3,7,8,6-HxCDF	*85*		*26 - 147*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-2,3,4,5,7,8-HxCDF	*85*		*28 - 135*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-1,2,3,4,5,7,8-HpCDD	*84*		*23 - 140*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-1,2,3,4,5,7,8-HpCDF	*71*		*28 - 143*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-1,2,3,4,7,8,6-HpCDF	*84*		*25 - 138*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-OCDD	*85*		*17 - 197*	*02/02/23 05:24*	*02/09/23 16:25*	*1*
13C-OCDF	*89*		*17 - 197*	*02/02/23 05:24*	*02/09/23 16:25*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*60*		*39 - 167*	*02/02/23 05:24*	*02/09/23 16:25*	*1*

Client Sample ID: LXBMP0012_20230114
Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000099	0.00000045	ug/L		02/02/23 06:24	02/05/23 20:13	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000023	ug/L		02/02/23 06:24	02/05/23 20:13	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000016	ug/L		02/02/23 06:24	02/05/23 20:13	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 20:13	1
1,2,3,4,7,8-HxCDD	**0.0000024**	**J,DX MB**	0.000050	0.00000017	ug/L		02/02/23 06:24	02/05/23 20:13	1
1,2,3,6,7,8-HxCDD	**0.00000053**	**J,DX q**	0.000050	0.00000017	ug/L		02/02/23 06:24	02/05/23 20:13	1
1,2,3,7,8,9-HxCDD	**0.00000067**	**J,DX MB**	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 20:13	1
1,2,3,4,7,8-HxCDF	**0.00000055**	**J,DX MB**	0.000050	0.00000014	ug/L		02/02/23 06:24	02/05/23 20:13	1
1,2,3,6,7,8-HxCDF	**0.00000039**	**J,DX MB**	0.000050	0.00000012	ug/L		02/02/23 06:24	02/05/23 20:13	1
1,2,3,7,8,9-HxCDF	**0.00000039**	**J,DX q MB**	0.000050	0.00000011	ug/L		02/02/23 06:24	02/05/23 20:13	1
2,3,4,6,7,8-HxCDF	**0.00000032**	**J,DX q MB**	0.000050	0.00000010	ug/L		02/02/23 06:24	02/05/23 20:13	1
1,2,3,4,6,7,8-HpCDD	**0.0000065**	**J,DX MB**	0.000050	0.00000050	ug/L		02/02/23 06:24	02/05/23 20:13	1
1,2,3,4,6,7,8-HpCDF	**0.0000026**	**J,DX q MB**	0.000050	0.00000027	ug/L		02/02/23 06:24	02/05/23 20:13	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000028	ug/L		02/02/23 06:24	02/05/23 20:13	1
OCDD	**0.000055**	**J,DX MB**	0.000099	0.00000057	ug/L		02/02/23 06:24	02/05/23 20:13	1
OCDF	**0.0000085**	**J,DX MB**	0.000099	0.00000027	ug/L		02/02/23 06:24	02/05/23 20:13	1
Total TCDD	ND		0.0000099	0.00000045	ug/L		02/02/23 06:24	02/05/23 20:13	1
Total TCDF	**0.00000075**	**J,DX q MB**	0.0000099	0.00000011	ug/L		02/02/23 06:24	02/05/23 20:13	1
Total PeCDD	**0.00000023**	**J,DX q MB**	0.000050	0.00000023	ug/L		02/02/23 06:24	02/05/23 20:13	1
Total PeCDF	ND		0.000050	0.00000016	ug/L		02/02/23 06:24	02/05/23 20:13	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LXBMP0012_20230114
Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HxCDD	0.0000050	J,DX q MB	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 20:13	1
Total HxCDF	0.0000027	J,DX q MB	0.000050	0.00000010	ug/L		02/02/23 06:24	02/05/23 20:13	1
Total HpCDD	0.000013	J,DX MB	0.000050	0.00000050	ug/L		02/02/23 06:24	02/05/23 20:13	1
Total HpCDF	0.0000064	J,DX q MB	0.000050	0.00000027	ug/L		02/02/23 06:24	02/05/23 20:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*29 - 154*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-2,3,7,8-TCDF	*56*		*24 - 156*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-1,2,3,7,8-PeCDD	*73*		*29 - 181*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-1,2,3,7,8-PeCDF	*72*		*24 - 189*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-2,3,4,7,8-PeCDF	*55*		*21 - 178*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-1,2,3,4,7,8-HxCDD	*96*		*32 - 141*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-1,2,3,5,7,8-HxCDD	*56*		*28 - 130*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-1,2,3,4,7,8-HxCDF	*99*		*25 - 192*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-1,2,3,5,7,8-HxCDF	*57*		*25 - 123*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-1,2,3,7,8,6-HxCDF	*74*		*26 - 147*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-2,3,4,5,7,8-HxCDF	*79*		*28 - 135*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-1,2,3,4,5,7,8-HpCDD	*70*		*23 - 140*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-1,2,3,4,5,7,8-HpCDF	*51*		*28 - 143*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-1,2,3,4,7,8,6-HpCDF	*70*		*25 - 138*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-OCDD	*58*		*17 - 197*	*02/02/23 05:24*	*02/09/23 20:13*	*1*
13C-OCDF	*58*		*17 - 197*	*02/02/23 05:24*	*02/09/23 20:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*86*		*39 - 167*	*02/02/23 05:24*	*02/09/23 20:13*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: LXBMP0010_20230114
Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	**0.00000060**	**J,DX**	0.000010	0.00000034	ug/L		02/02/23 06:24	02/06/23 14:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*77*		*24 - 156*	*02/02/23 05:24*	*02/05/23 14:48*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*103*		*39 - 167*	*02/02/23 05:24*	*02/05/23 14:48*	*1*

Client Sample ID: LXBMP0012_20230114
Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000099	0.00000043	ug/L		02/02/23 06:24	02/06/23 15:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*56*		*24 - 156*	*02/02/23 05:24*	*02/05/23 19:29*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*104*		*39 - 167*	*02/02/23 05:24*	*02/05/23 19:29*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-124259-1	LXBMP0010_20230114	90
570-124259-1 - RA	LXBMP0010_20230114	103
570-124259-2	LXBMP0012_20230114	89
570-124259-2 - RA	LXBMP0012_20230114	104
MB 320-651189/1-A	Method Blank	93
MB 320-651189/1-A - RA	Method Blank	107

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-651189/2-A	Lab Control Sample	90
LCSD 320-651189/3-A	Lab Control Sample Dup	92

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-124259-1	LXBMP0010_20230114	79	78	83	82	73	66	77	62
570-124259-1 - RA	LXBMP0010_20230114		77						
570-124259-2	LXBMP0012_20230114	70	69	73	72	66	59	69	55
570-124259-2 - RA	LXBMP0012_20230114		69						
MB 320-651189/1-A	Method Blank	60	61	58	57	56	46	55	45
MB 320-651189/1-A - RA	Method Blank		60						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-124259-1	LXBMP0010_20230114	75	86	86	84	71	84	86	85
570-124259-1 - RA	LXBMP0010_20230114								
570-124259-2	LXBMP0012_20230114	67	74	75	70	61	70	68	68
570-124259-2 - RA	LXBMP0012_20230114								
MB 320-651189/1-A	Method Blank	54	53	55	50	47	50	48	47
MB 320-651189/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-651189/2-A	Lab Control Sample	73	71	78	76	76	75	80	69
LCSD 320-651189/3-A	Lab Control Sample Dup	77	76	78	79	72	68	75	63

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-651189/2-A	Lab Control Sample	81	78	81	77	73	77	78	78
LCSD 320-651189/3-A	Lab Control Sample Dup	75	82	82	79	69	79	80	79

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-2

TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000054	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8-PeCDF	0.000000691	J,DX	0.000050	0.00000018	ug/L		02/02/23 06:24	02/05/23 15:34	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8-HxCDD	0.00000202	J,DX q	0.000050	0.00000023	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000022	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8,9-HxCDD	0.000000925	J,DX	0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8-HxCDF	0.000000701	J,DX	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,6,7,8-HxCDF	0.000000358	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8,9-HxCDF	0.000000644	J,DX q	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 15:34	1
2,3,4,6,7,8-HxCDF	0.000000431	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,6,7,8-HpCDD	0.00000195	J,DX q	0.000050	0.00000028	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,6,7,8-HpCDF	0.00000178	J,DX q	0.000050	0.00000024	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8,9-HpCDF	0.000000759	J,DX q	0.000050	0.00000026	ug/L		02/02/23 06:24	02/05/23 15:34	1
OCDD	0.0000108	J,DX	0.00010	0.00000046	ug/L		02/02/23 06:24	02/05/23 15:34	1
OCDF	0.00000206	J,DX	0.00010	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total TCDD	0.00000231	J,DX	0.000010	0.00000054	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total TCDF	0.00000107	J,DX	0.000010	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total PeCDD	0.000000379	J,DX q	0.000050	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total PeCDF	0.000000691	J,DX	0.000050	0.00000018	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HxCDD	0.00000295	J,DX q	0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HxCDF	0.00000253	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HpCDD	0.00000444	J,DX q	0.000050	0.00000028	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HpCDF	0.00000254	J,DX q	0.000050	0.00000024	ug/L		02/02/23 06:24	02/05/23 15:34	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,7,8-PeCDD	*58*		*25 - 181*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,7,8-PeCDF	*57*		*24 - 185*	*02/02/23 06:24*	*02/05/23 15:34*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	56		21 - 178	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8-HxCDD	46		32 - 141	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,6,7,8-HxCDD	55		28 - 130	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8-HxCDF	45		26 - 152	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,6,7,8-HxCDF	54		26 - 123	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,7,8,9-HxCDF	53		29 - 147	02/02/23 06:24	02/05/23 15:34	1
13C-2,3,4,6,7,8-HxCDF	55		28 - 136	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,6,7,8-HpCDD	50		23 - 140	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,6,7,8-HpCDF	47		28 - 143	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8,9-HpCDF	50		26 - 138	02/02/23 06:24	02/05/23 15:34	1
13C-OCDD	48		17 - 157	02/02/23 06:24	02/05/23 15:34	1
13C-OCDF	47		17 - 157	02/02/23 06:24	02/05/23 15:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	93		35 - 197	02/02/23 06:24	02/05/23 15:34	1

Lab Sample ID: LCS 320-651189/2-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651189

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000208		ug/L		104	67 - 158		
2,3,7,8-TCDF			0.000200	0.000215		ug/L		107	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.00101		ug/L		101	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.00100		ug/L		100	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.00102		ug/L		102	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000971		ug/L		97	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00103		ug/L		103	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000993		ug/L		99	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.00101		ug/L		101	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000997		ug/L		100	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000982		ug/L		98	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00101		ug/L		101	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.00100		ug/L		100	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00102		ug/L		102	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000993		ug/L		99	78 - 138		
OCDD			0.00200	0.00200		ug/L		100	78 - 144		
OCDF			0.00200	0.00207		ug/L		103	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	73		20 - 175
13C-2,3,7,8-TCDF	71		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	76		21 - 192
13C-2,3,4,7,8-PeCDF	76		13 - 328
13C-1,2,3,4,7,8-HxCDD	75		21 - 193
13C-1,2,3,6,7,8-HxCDD	80		25 - 163
13C-1,2,3,4,7,8-HxCDF	69		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-651189/2-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	81		21 - 159
13C-1,2,3,7,8,9-HxCDF	78		17 - 205
13C-2,3,4,6,7,8-HxCDF	81		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	77		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	73		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	77		20 - 186
13C-OCDD	78		13 - 199
13C-OCDF	78		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	90		31 - 191

Lab Sample ID: LCSD 320-651189/3-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651189

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000216		ug/L		108	67 - 158	3	50
2,3,7,8-TCDF			0.000200	0.000221		ug/L		110	75 - 158	3	50
1,2,3,7,8-PeCDD			0.00100	0.00105		ug/L		105	70 - 142	4	50
1,2,3,7,8-PeCDF			0.00100	0.00104		ug/L		104	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.00106		ug/L		106	68 - 160	4	50
1,2,3,4,7,8-HxCDD			0.00100	0.00102		ug/L		102	70 - 164	5	50
1,2,3,6,7,8-HxCDD			0.00100	0.00107		ug/L		107	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.00114		ug/L		114	64 - 162	14	50
1,2,3,4,7,8-HxCDF			0.00100	0.00106		ug/L		106	72 - 134	5	50
1,2,3,6,7,8-HxCDF			0.00100	0.00103		ug/L		103	84 - 130	3	50
1,2,3,7,8,9-HxCDF			0.00100	0.00103		ug/L		103	78 - 130	4	50
2,3,4,6,7,8-HxCDF			0.00100	0.00104		ug/L		104	70 - 156	3	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00104		ug/L		104	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00106		ug/L		106	82 - 122	4	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00104		ug/L		104	78 - 138	4	50
OCDD			0.00200	0.00207		ug/L		104	78 - 144	4	50
OCDF			0.00200	0.00216		ug/L		108	63 - 170	4	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 175
13C-2,3,7,8-TCDF	76		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	79		21 - 192
13C-2,3,4,7,8-PeCDF	72		13 - 328
13C-1,2,3,4,7,8-HxCDD	68		21 - 193
13C-1,2,3,6,7,8-HxCDD	75		25 - 163
13C-1,2,3,4,7,8-HxCDF	63		19 - 202
13C-1,2,3,6,7,8-HxCDF	75		21 - 159
13C-1,2,3,7,8,9-HxCDF	82		17 - 205
13C-2,3,4,6,7,8-HxCDF	82		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	79		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-651189/3-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	69		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	80		13 - 199
13C-OCDF	79		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651969

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000042	ug/L		02/02/23 06:24	02/06/23 12:44	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	60		24 - 169	02/02/23 06:24	02/06/23 12:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	107		35 - 197	02/02/23 06:24	02/06/23 12:44	1

Specialty Organics

Prep Batch: 651189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124259-1 - RA	LXBMP0010_20230114	Total/NA	Water	1613B	
570-124259-1	LXBMP0010_20230114	Total/NA	Water	1613B	
570-124259-2 - RA	LXBMP0012_20230114	Total/NA	Water	1613B	
570-124259-2	LXBMP0012_20230114	Total/NA	Water	1613B	
MB 320-651189/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-651189/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-651189/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-651189/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 651907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124259-1	LXBMP0010_20230114	Total/NA	Water	1613B	651189
570-124259-2	LXBMP0012_20230114	Total/NA	Water	1613B	651189
MB 320-651189/1-A	Method Blank	Total/NA	Water	1613B	651189
LCS 320-651189/2-A	Lab Control Sample	Total/NA	Water	1613B	651189
LCSD 320-651189/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	651189

Analysis Batch: 651969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124259-1 - RA	LXBMP0010_20230114	Total/NA	Water	1613B	651189
570-124259-2 - RA	LXBMP0012_20230114	Total/NA	Water	1613B	651189
MB 320-651189/1-A - RA	Method Blank	Total/NA	Water	1613B	651189

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-2

Client Sample ID: LXBMP0010_20230114

Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1002.7 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651969	02/06/23 14:48	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1002.7 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	651907	02/05/23 19:26	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: LXBMP0012_20230114

Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1009.6 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651969	02/06/23 15:25	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1009.6 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	651907	02/05/23 20:13	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124259-2
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124259-1	LXBMP0010_20230114	Water	01/14/23 10:00	01/17/23 18:23
570-124259-2	LXBMP0012_20230114	Water	01/14/23 11:00	01/17/23 18:23

124259

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

estAmerica ervices under thi CoC sha be performed in accordance with he T&Cs ithin Blanket Servi ce Agreement# 20 9-22 TestAmerica b, and between Haley & Aldrich c, its sub sidiaries and affiliates and TestAmerica Laboratories nc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1 250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002			G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011			G	WM	8	Y	N	X	X	X	X	X	X	X
LBMP0002			G	WM	8	Y	Y	X	X	X	X	X	X	X
LBMP0004			G	WM	8	Y	N	X	X	X	X	X	X	X
LBMP0005			G	WM	8	Y	N	X	X	X	X	X	X	X
LBMP0008			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010_20230114	01/14/23	1000	G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_20230114	01/14/23	1100	G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02			G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1

570-124259 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C). Obs'd. ____ Corr'd: ____ Therm ID No. ____

Relinquished by	Company: 01/14/23 JHA	Date/Time: 17/1853/1245	Received by: EC	Date/Time: 1/17/23 1245
Relinquished by	Company: EC	Date/Time: 1/17/23 1823	Received by:	Date/Time: 1/17/23 18 23
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time.

2.3/2.3 1.7/1.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

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2/13/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124259-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0010_20230114 (570-124259-1)	1/14/23	10 00 Pacific		Water			X	X	2	
LXBMP0012_20230114 (570-124259-2)	1/14/23	11 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/18/23 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204509.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124259-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/6/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
LXBMP0010_20230114 (570-124259-1)	1/14/23	10:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
LXBMP0012_20230114 (570-124259-2)	1/14/23	11:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/18/23 1325			1/19/23 910	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: Seal | Cooler Temperature(s) °C and Other Remarks: 1.8C

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124259-2

Login Number: 124259
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124259-2

Login Number: 124259
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/19/23 11:49 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8c 1.7c 2.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/24/2023 12:48:39 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124259-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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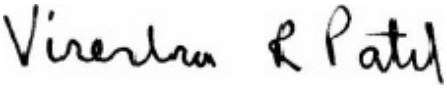
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124259-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124259-3

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:23 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.3º C.

Metals
Method 1631E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following sample associated with analytical batch 580-416060 were outside control limits: (580-122334-A-10 MS) and (580-122334-A-10 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-3

Client Sample ID: LXBMP0010_20230114 — Lab Sample ID: 570-124259-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0034		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0015		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: LXBMP0012_20230114 — Lab Sample ID: 570-124259-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.018		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.013		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-3

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: LXBMP0010_20230114
Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0034		0.00050	0.000079	ug/L			01/20/23 16:47	1

Client Sample ID: LXBMP0012_20230114
Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.018		0.00050	0.000079	ug/L			01/20/23 16:51	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-3

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: LXBMP0010_20230114
Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0015		0.00050	0.000079	ug/L			01/20/23 17:49	1

Client Sample ID: LXBMP0012_20230114
Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.013		0.00050	0.000079	ug/L			01/20/23 18:01	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-416060/19
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:46	1

Lab Sample ID: MB 580-416060/20
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:50	1

Lab Sample ID: MB 580-416060/23
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 13:03	1

Lab Sample ID: LCS 580-416060/29
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00449		ug/L		90	77 - 123		

Lab Sample ID: LCSD 580-416060/32
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00438		ug/L		88	77 - 123	2	24

Lab Sample ID: 570-124252-K-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.011		0.0150	0.0255		ug/L		99	71 - 125		

Lab Sample ID: 570-124252-K-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.011		0.0150	0.0259		ug/L		102	71 - 125	2	24

Lab Sample ID: 570-124263-D-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.14		0.200	0.360		ug/L		109	71 - 125		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-3

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 570-124263-D-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.14		0.200	0.358		ug/L		108	71 - 125	1	24

Lab Sample ID: MB 580-415853/1-A
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 14:46	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-3

Metals

Filtration Batch: 415853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124259-1	LXBMP0010_20230114	Dissolved	Water	Filtration	
570-124259-2	LXBMP0012_20230114	Dissolved	Water	Filtration	
MB 580-415853/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 416060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124259-1	LXBMP0010_20230114	Dissolved	Water	1631E	415853
570-124259-1	LXBMP0010_20230114	Total/NA	Water	1631E	
570-124259-2	LXBMP0012_20230114	Dissolved	Water	1631E	415853
570-124259-2	LXBMP0012_20230114	Total/NA	Water	1631E	
MB 580-415853/1-A	Method Blank	Dissolved	Water	1631E	415853
MB 580-416060/19	Method Blank	Total/NA	Water	1631E	
MB 580-416060/20	Method Blank	Total/NA	Water	1631E	
MB 580-416060/23	Method Blank	Total/NA	Water	1631E	
LCS 580-416060/29	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-416060/32	Lab Control Sample Dup	Total/NA	Water	1631E	
570-124252-K-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-124252-K-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
570-124263-D-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-124263-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-3

Client Sample ID: LXBMP0010_20230114

Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415853	01/19/23 13:15	AJD	EET SEA
Dissolved	Analysis	1631E		1			416060	01/20/23 17:49	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			416060	01/20/23 16:47	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: LXBMP0012_20230114

Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415853	01/19/23 13:15	AJD	EET SEA
Dissolved	Analysis	1631E		1			416060	01/20/23 18:01	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			416060	01/20/23 16:51	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124259-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-3

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124259-1	LXBMP0010_20230114	Water	01/14/23 10:00	01/17/23 18:23
570-124259-2	LXBMP0012_20230114	Water	01/14/23 11:00	01/17/23 18:23

124259

Chain of Custody Record for Chain of Custody Record

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

estAmerica services under thi CoC sha be performed in accordance with he T&Cs ithin Blanket Servi ce Agreement# 20 9-22 TestAmerica b, and between Haley & Aldrich c, its sub sidiaries and affiliates and TestAmerica Laboratories nc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)						
								1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1 250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly						
A1BMP0002			G	WM	8	Y	N	X	X	X	X	X	X	X						
A1BMP0003			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0009			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0010			G	WM	8	Y	N	X	X	X	X	X	X	X						
B1BMP0011			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0002			G	WM	8	Y	Y	X	X	X	X	X	X	X						
LBMP0004			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0005			G	WM	8	Y	N	X	X	X	X	X	X	X						
LBMP0008			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0002			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0003			G	WM	8	Y	N	X	X	X	X	X	X	X						
LPBMP0004			G	WM	8	Y	Y	X	X	X	X	X	X	X						
LXBMP0010_20230114	01/14/23	1000	G	WM	8	Y	N	X	X	X	X	X	X	X						
LXBMP0012_20230114	01/14/23	1100	G	WM	8	Y	N	X	X	X	X	X	X	X						
ILQW0007			G	WM	6	Y	N	X	X	X	X	X								
EPNDSW04			G	WM	8	Y	N	X	X	X	X	X	X	X						
DUP01			G	WM	8	Y	N	X	X	X	X	X	X	X						
DUP02			G	WM	8	Y	N	X	X	X	X	X	X	X						
Preservation Used: 1=Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1						

570-124259 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C). Obs'd. ____ Corr'd: ____ Therm ID No. ____

Relinquished by	Company: 01/14/23 JHA	Date/Time: 17/1853/1245	Received by: EC	Date/Time: 1/17/23 1245
Relinquished by	Company: EC	Date/Time: 1/17/23 1823	Received by:	Date/Time: 1/17/23 18 23
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time.

2.3/2.3 1.7/1.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Page 16 of 20

1/24/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124259-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0010_20230114 (570-124259-1)	1/14/23	10 00 Pacific		Water			X	X	2	
LXBMP0012_20230114 (570-124259-2)	1/14/23	11 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/18/23 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/24/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins
Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204480.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124259-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0010_20230114 (570-124259-1)	1/14/23	10:00 Pacific		Water			X	X	2	
LXBMP0012_20230114 (570-124259-2)	1/14/23	11:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/18/23 1230			1/19/23 0945	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.: NA	Cooler Temperature(s) °C and Other Remarks: 0.0 0.4 0.3

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124259-3

Login Number: 124259
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124259-3

Login Number: 124259
List Number: 3
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/19/23 12:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124259-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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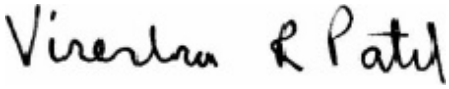
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124259-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124259-4

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:23 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.3º C.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-4

Client Sample ID: LXBMP0010_20230114 — Lab Sample ID: 570-124259-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	14.35		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	82.96		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	97.31		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	2.69		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: LXBMP0012_20230114 — Lab Sample ID: 570-124259-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	6.58		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	2.51		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	69.12		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	75.70		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	21.79		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: LXBMP0010_20230114
Date Collected: 01/14/23 10:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**14.35**		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	**82.96**		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	**97.31**		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	**2.69**		0.01	0.01	%			02/04/23 13:34	1

Client Sample ID: LXBMP0012_20230114
Date Collected: 01/14/23 11:00
Date Received: 01/17/23 18:23

Lab Sample ID: 570-124259-2
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**6.58**		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	**2.51**		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	**69.12**		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	**75.70**		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	**21.79**		0.01	0.01	%			02/04/23 13:34	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

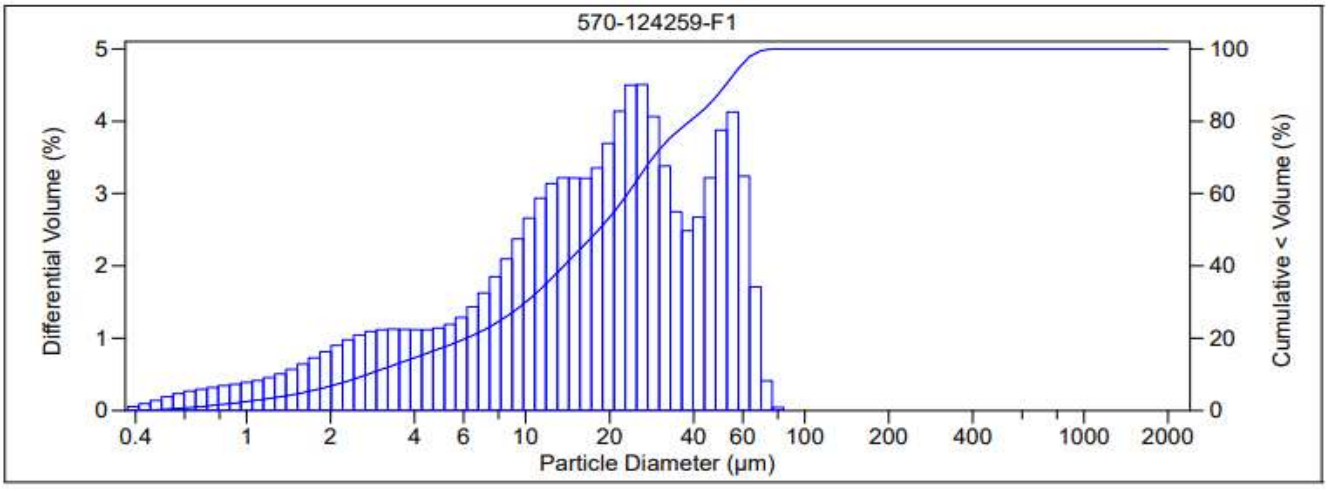
Haley & Aldrich, Inc.

Date Sampled:	01/14/23
Date Received:	01/17/23
Work Order No:	570-124259
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
LXBMP0010_20230114		N/A	0.023

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	0.00	2.69	82.96	14.35	97.31



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PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

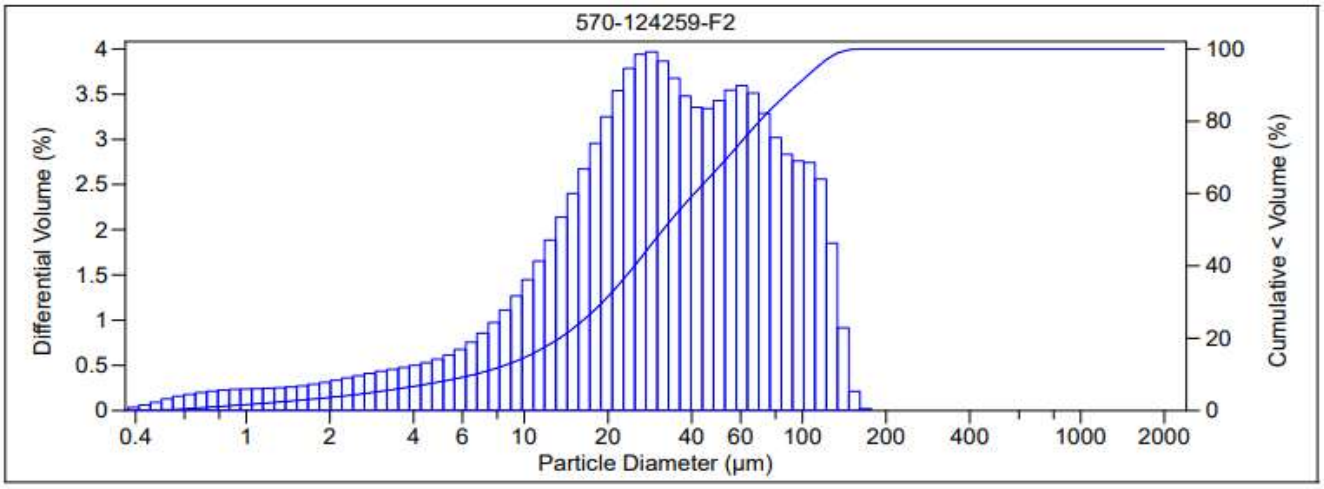
Haley & Aldrich, Inc.

Date Sampled:	01/14/23
Date Received:	01/17/23
Work Order No:	570-124259
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
LXBMP0012_20230114		VF clay+colloids	0.042

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	2.51	21.79	69.12	6.58	75.70



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

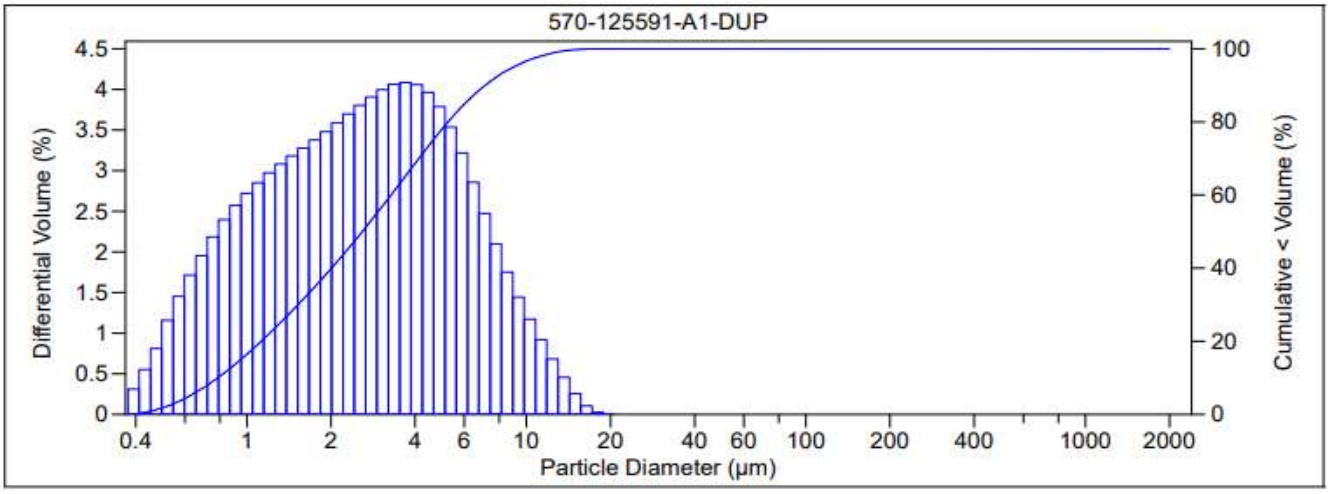
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125590
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13130

Sample ID	Depth ft	Description	Mean Grain Size mm
130-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	32.31	67.69	100.00



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

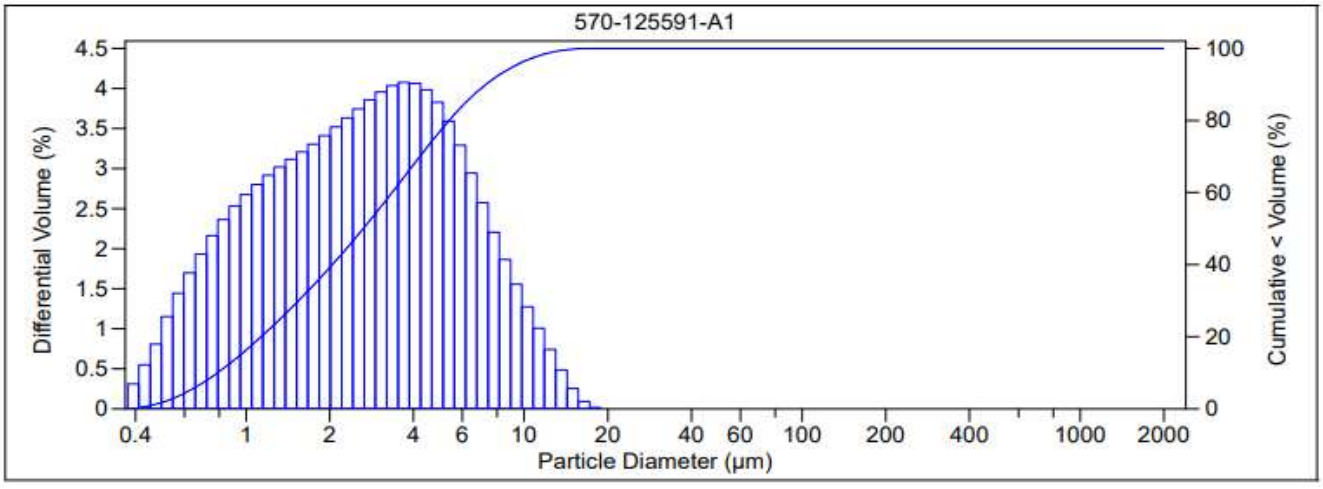
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125591
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13131

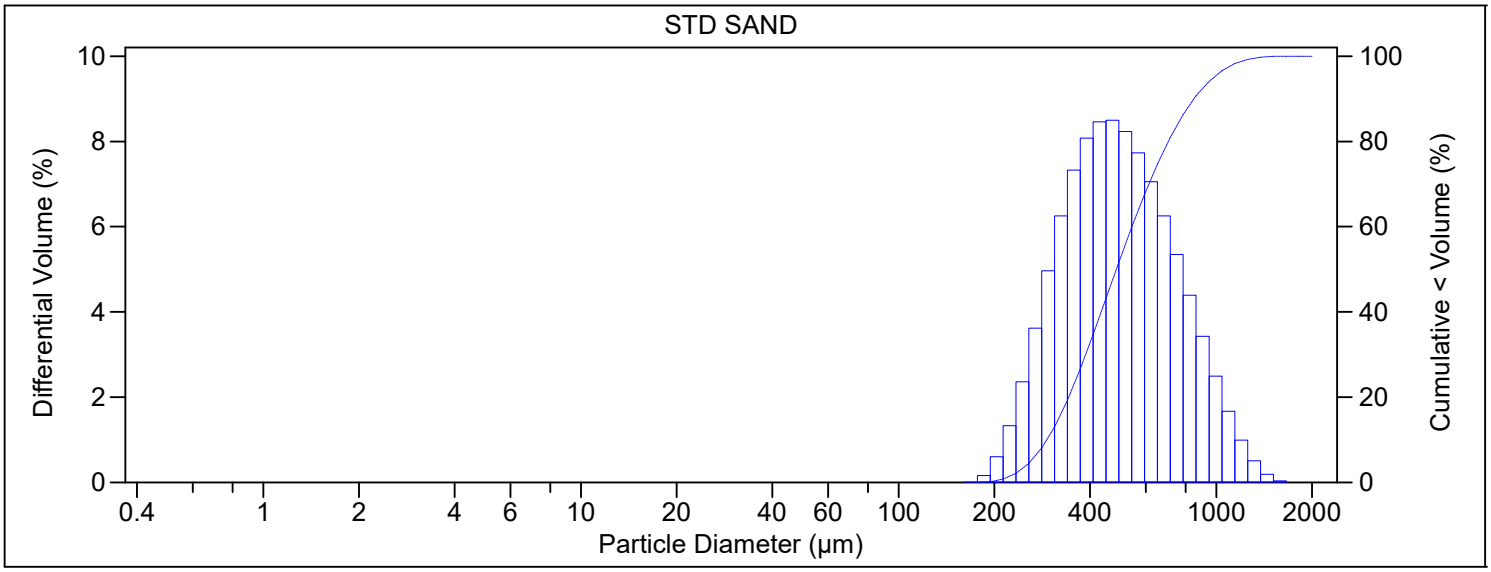
Sample ID	Depth ft	Description	Mean Grain Size mm
131-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	33.28	66.72	100.00



V 3.0

File name:	C:\LS13320\STD SAND_ 3 Feb 2023_19.52.20.$ls		
	STD SAND_ 3 Feb 2023_19.52.20.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	22		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	19:51 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 3 Feb 2023_19.52.20.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	534.6 µm	S.D.:	224.4 µm
Median:	485.0 µm	Variance:	50358 µm^2
Mean/Median ratio:	1.102	Skewness:	1.068 Right skewed
Mode:	471.1 µm	Kurtosis:	1.067 Leptokurtic

d_{10}: 292.7 µm d_{50}: 485.0 µm d_{90}: 851.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.02	Median:	1.04	Deviation:	0.60
Skewness:	-0.06	Kurtosis:	0.93		

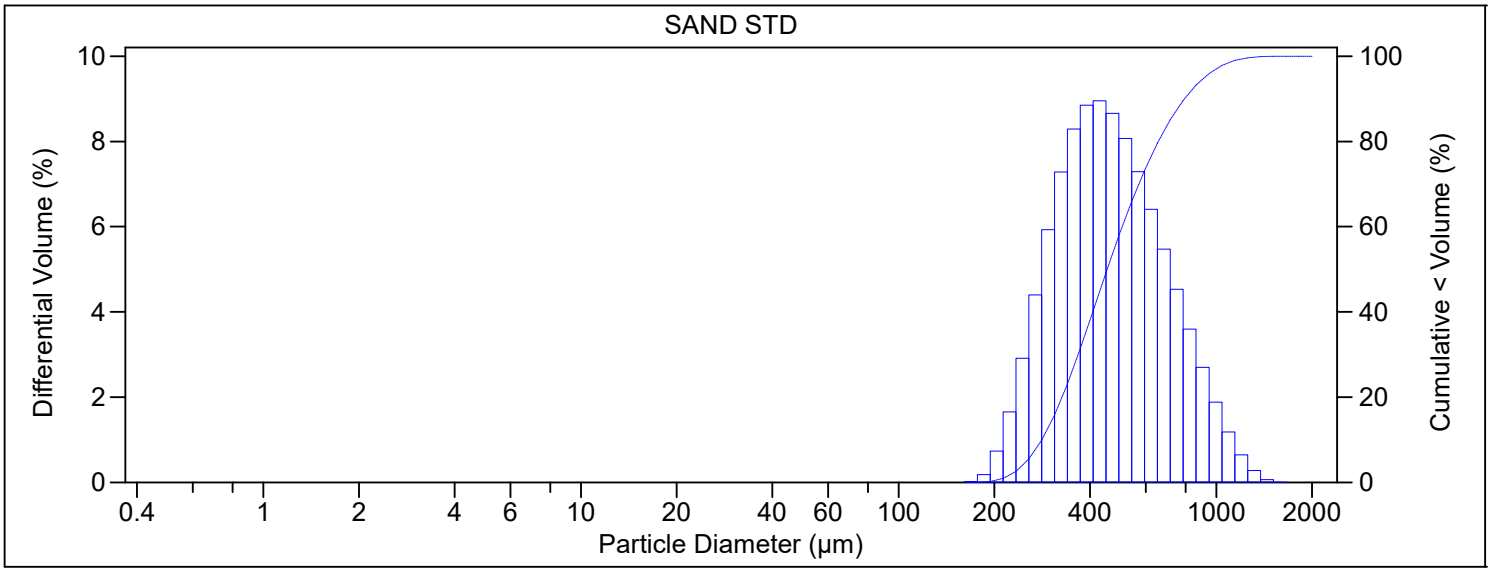
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
260.7 µm	323.9 µm	365.7 µm	434.7 µm	485.0 µm	656.2 µm	756.9 µm	981.3 µm

Particle Diameter µm	STD SAND_ 3 Feb 2023 _19.52.20 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	3.75
250	49.0
500	42.8
1000	4.50
2000	

STD SAND_ 3 Feb 2023_19.52.20.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.99
0.412	0	22.73	0	1255	0.51
0.452	0	24.95	0	1377	0.19
0.496	0	27.39	0	1512	0.034
0.545	0	30.07	0	1660	0.0013
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.011		
3.206	0	176.9	0.16		
3.519	0	194.2	0.60		
3.863	0	213.2	1.33		
4.241	0	234.1	2.36		
4.656	0	256.9	3.62		
5.111	0	282.1	4.97		
5.611	0	309.6	6.26		
6.159	0	339.9	7.33		
6.761	0	373.1	8.07		
7.422	0	409.6	8.46		
8.148	0	449.7	8.50		
8.944	0	493.6	8.23		
9.819	0	541.9	7.73		
10.78	0	594.9	7.06		
11.83	0	653.0	6.25		
12.99	0	716.9	5.35		
14.26	0	786.9	4.39		
15.65	0	863.9	3.43		
17.18	0	948.3	2.50		
18.86	0	1041	1.67		

File name:	C:\LS13320\SAND STD_ 3 Feb 2023_20.33.47.$ls		
	SAND STD_ 3 Feb 2023_20.33.47.$ls		
File ID:	SAND STD		
Sample ID:	SAND STD		
Operator:	C6FB		
Run number:	24		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:32 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) SAND STD_ 3 Feb 2023_20.33.47.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	501.8 µm	S.D.:	207.4 µm
Median:	453.7 µm	Variance:	42999 µm^2
Mean/Median ratio:	1.106	Skewness:	1.134 Right skewed
Mode:	429.2 µm	Kurtosis:	1.262 Leptokurtic

d_{10}: 282.5 µm d_{50}: 453.7 µm d_{90}: 794.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.11	Median:	1.14	Deviation:	0.58
Skewness:	-0.08	Kurtosis:	0.94		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
253.0 µm	310.4 µm	347.5 µm	408.6 µm	453.7 µm	611.0 µm	703.9 µm	919.1 µm

Particle Diameter µm	SAND STD_ 3 Feb 2023 _20.33.47 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	4.62
250	54.3
500	38.1
1000	3.02
2000	

SAND STD_ 3 Feb 2023_20.33.47.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.65
0.412	0	22.73	0	1255	0.28
0.452	0	24.95	0	1377	0.068
0.496	0	27.39	0	1512	0.0041
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.012		
3.206	0	176.9	0.19		
3.519	0	194.2	0.74		
3.863	0	213.2	1.65		
4.241	0	234.1	2.91		
4.656	0	256.9	4.40		
5.111	0	282.1	5.93		
5.611	0	309.6	7.28		
6.159	0	339.9	8.29		
6.761	0	373.1	8.85		
7.422	0	409.6	8.95		
8.148	0	449.7	8.66		
8.944	0	493.6	8.07		
9.819	0	541.9	7.29		
10.78	0	594.9	6.41		
11.83	0	653.0	5.48		
12.99	0	716.9	4.53		
14.26	0	786.9	3.59		
15.65	0	863.9	2.70		
17.18	0	948.3	1.88		
18.86	0	1041	1.18		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-4

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-125591-A-1 DU
Matrix: Water
Analysis Batch: 301228

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay (less than 0.00391 mm)	66.72			67.69		%				1	20
Coarse Sand (0.5mm to 1mm)	ND			ND		%				NC	20
Fine Sand (0.125 to 0.25mm)	ND			ND		%				NC	20
Gravel (greater than 2 mm)	ND			ND		%				NC	20
Medium Sand (0.25 to 0.5 mm)	ND			ND		%				NC	20
Silt (0.00391 to 0.0625mm)	33.28			32.31		%				3	20
Total Silt and Clay (0 to 0.0626mm)	100.00			100.00		%				0	20
Very Coarse Sand (1 to 2mm)	ND			ND		%				NC	20
Very Fine Sand (0.0625 to 0.125 mm)	ND			ND		%				NC	20

Client: Haley & Aldrich, Inc.
Job ID: 570-124259-4
Project/Site: Boeing SSFL ISRA and BMP

Geotechnical

Analysis Batch: 301228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124259-1	LXBMP0010_20230114	Total/NA	Water	D4464	
570-124259-2	LXBMP0012_20230114	Total/NA	Water	D4464	
LCS 570-301228/22	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-301228/24	Lab Control Sample Dup	Total/NA	Water	D4464	
570-125591-A-1 DU	Duplicate	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124259-4
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: LXBMP0010_20230114
Lab Sample ID: 570-124259-1
Date Collected: 01/14/23 10:00
Matrix: Water
Date Received: 01/17/23 18:23

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: LXBMP0012_20230114
Lab Sample ID: 570-124259-2
Date Collected: 01/14/23 11:00
Matrix: Water
Date Received: 01/17/23 18:23

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-126258-6

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ03u0	11-19-2u
California	Los Angeles CoQnty Sanitation Districts	10108	07-u1-2u
California	SCAv MD LAP	17LA0818	11-u0-2u
California	State	u032	07-u1-2u
NeQada	State	CA00111	03-01-2u
Eregon	N4 LAP	6175	02-02-26
USDA	US Federal Programs	Puu0-22-00058	05-26-2u
Washington	State	C819-13	10-11-2u

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-4

Method	Method Description	Protocol	Laboratory
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4

Protocol References:

ASTM = ASTM International

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124259-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124259-1	LXBMP0010_20230114	Water	01/14/23 10:00	01/17/23 18:23
570-124259-2	LXBMP0012_20230114	Water	01/14/23 11:00	01/17/23 18:23

124259

Chain of Custody Record for Chain of Custody Record

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins

Eurofins Calscience, Inc.

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

estAmerica ervices under thi CoC sha be performed in accordance with he T&Cs ithin Blanket Servi ce Agreement# 20 9-22 TestAmerica b, and between Haley & Aldrich c, its sub sidiaries and affiliates and TestAmerica Laboratories nc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Method 200.8 Cd, Cu, Pb (Total Recoverable)	Method 200.8 Cd, Cu, Pb (Total Dissolved)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)
								1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1 250mL Glass (double bagged)	2-1L Amber	1 1L Poly	1 1L Poly
A1BMP0002			G	WM	8	Y	N	X	X	X	X	X	X	X
A1BMP0003			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0009			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0010			G	WM	8	Y	N	X	X	X	X	X	X	X
B1BMP0011			G	WM	8	Y	N	X	X	X	X	X	X	X
LBMP0002			G	WM	8	Y	Y	X	X	X	X	X	X	X
LBMP0004			G	WM	8	Y	N	X	X	X	X	X	X	X
LBMP0005			G	WM	8	Y	N	X	X	X	X	X	X	X
LBMP0008			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0002			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0003			G	WM	8	Y	N	X	X	X	X	X	X	X
LPBMP0004			G	WM	8	Y	Y	X	X	X	X	X	X	X
LXBMP0010_20230114	01/14/23	1000	G	WM	8	Y	N	X	X	X	X	X	X	X
LXBMP0012_20230114	01/14/23	1100	G	WM	8	Y	N	X	X	X	X	X	X	X
ILQW0007			G	WM	6	Y	N	X	X	X	X	X		
EPNDSW04			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP01			G	WM	8	Y	N	X	X	X	X	X	X	X
DUP02			G	WM	8	Y	N	X	X	X	X	X	X	X
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								4	1	2	1	1	1	1

570-124259 Chain of Custody

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C). Obs'd. ____ Corr'd: ____ Therm ID No. ____

Relinquished by	Company: 01/14/23 JHA	Date/Time: 17/1853/1245	Received by: EC	Date/Time: 1/17/23 1245
Relinquished by	Company: EC	Date/Time: 1/17/23 1823	Received by:	Date/Time: 1/17/23 18 23
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time.

2.3/2.3 1.7/1.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/7/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124259-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0010_20230114 (570-124259-1)	1/14/23	10 00 Pacific		Water			X	X	2	
LXBMP0012_20230114 (570-124259-2)	1/14/23	11 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/18/23 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124259-4

Login Number: 124259
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/7/2023 4:29:54 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124260-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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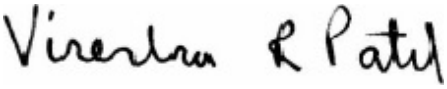

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Authorized for release by
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired
EY	Result exceeds normal dynamic range; reported as a min. est.

Metals

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124260-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124260-1

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.3º C and 2.4º C.

Receipt Exceptions

The following sample was received outside of holding time for NO3,NO2 & Cr VI: LXBMP0011_20230114 (570-124260-1).

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

The clients office was contacted with the above sample receipt anomalies. The laboratory was provided written direction on how to proceed, please refer to the COC section of the report for further details.

GC/MS VOA
Method 624.1: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: LXBMP0011_20230114 (570-124260-1). Elevated reporting limits (RLs) are provided.

Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-296662. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following sample was received and analyzed outside of holding time: LXBMP0011_20230114 (570-124260-1).

Method 218.6: The following samples were received,filtered and analyzed outside of holding time: LXBMP0011_20230114 (570-124260-1) and (570-124252-D-1-A).

Method 300.0: The following sample was received outside of holding time: LXBMP0011_20230114 (570-124260-1).

Method 314.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-297043 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Perchlorate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-296798 and analytical batch 570-297048 contained Lead above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: LXBMP0011_20230114 (570-124260-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Job ID: 570-124260-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: LXBMP0011_20230114 (570-124260-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Client Sample ID: LXBMP0011_20230114 — Lab Sample ID: 570-124260-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.11		0.10	0.046	mg/L	1		300.0	Total/NA
Nitrate as N	0.74	BU BV	0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	3.6		1.0	0.24	mg/L	1		300.0	Total/NA
Boron	46	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	46	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	1.3		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	22		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	3.8		2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	3.0		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	2700		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	56		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	3.6		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	3.8		1.0	0.12	ug/L	1		200.8	Total Recoverable
Selenium	0.58	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Zinc	13	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Aluminum	1900		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	0.58	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	6.1	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.39	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	0.85	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	71	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	1.5	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.3	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Aluminum	120	BU	15	8.6	ug/L	1		200.8	Dissolved
Total Suspended Solids	65		2.5	2.1	mg/L	1		SM 2540D	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 570-124260-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		2.0	0.82	ug/L			01/18/23 13:32	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*60 - 140*		*01/18/23 13:32*	*2*
4-Bromofluorobenzene (Surr)	*94*		*60 - 140*		*01/18/23 13:32*	*2*
Dibromofluoromethane	*95*		*60 - 140*		*01/18/23 13:32*	*2*
Toluene-d8 (Surr)	*101*		*60 - 140*		*01/18/23 13:32*	*2*

Client Sample ID: Trip Blank
Date Collected: 01/17/23 00:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/18/23 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*60 - 140*		*01/18/23 13:22*	*1*
4-Bromofluorobenzene (Surr)	*84*		*60 - 140*		*01/18/23 13:22*	*1*
Dibromofluoromethane	*110*		*60 - 140*		*01/18/23 13:22*	*1*
Toluene-d8 (Surr)	*94*		*60 - 140*		*01/18/23 13:22*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.7	4.1	ug/L		01/19/23 05:37	01/30/23 16:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*88*		*28 - 127*	*01/19/23 05:37*	*01/30/23 16:47*	*1*
2-Fluorobiphenyl (Surr)	*65*		*31 - 120*	*01/19/23 05:37*	*01/30/23 16:47*	*1*
2-Fluorophenol (Surr)	*50*		*17 - 120*	*01/19/23 05:37*	*01/30/23 16:47*	*1*
Nitrobenzene-d5 (Surr)	*72*		*27 - 120*	*01/19/23 05:37*	*01/30/23 16:47*	*1*
Phenol-d6 (Surr)	*40*		*10 - 120*	*01/19/23 05:37*	*01/30/23 16:47*	*1*
p-Terphenyl-d14 (Surr)	*79*		*45 - 120*	*01/19/23 05:37*	*01/30/23 16:47*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			01/18/23 04:04	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			01/18/23 08:04	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.11**		0.10	0.046	mg/L			01/18/23 07:54	1
Nitrite as N	ND	BU BV	0.10	0.043	mg/L			01/18/23 07:54	1
Nitrate as N	**0.74**	**BU BV**	0.10	0.020	mg/L			01/18/23 07:54	1
Sulfate	**3.6**		1.0	0.24	mg/L			01/18/23 07:54	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/20/23 10:22	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	46	J,DX	500	3.5	ug/L		01/24/23 13:00	01/24/23 18:29	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	46	J,DX BU	500	3.5	ug/L			01/20/23 02:44	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		02/07/23 06:36	02/07/23 11:03	1
Arsenic	**1.3**		1.0	0.16	ug/L		02/07/23 06:36	02/07/23 11:03	1
Barium	**22**		1.0	0.17	ug/L		02/07/23 06:36	02/07/23 11:03	1
Beryllium	ND		0.50	0.26	ug/L		02/07/23 06:36	02/07/23 11:03	1
Cadmium	ND		1.0	0.13	ug/L		02/07/23 06:36	02/07/23 11:03	1
Chromium	**3.8**		2.0	0.14	ug/L		02/07/23 06:36	02/07/23 11:03	1
Copper	**3.0**		2.0	0.32	ug/L		02/07/23 06:36	02/07/23 11:03	1
Iron	**2700**		20	3.7	ug/L		02/07/23 06:36	02/07/23 11:03	1
Manganese	**56**		1.0	0.41	ug/L		02/07/23 06:36	02/07/23 11:03	1
Nickel	**3.6**		2.0	0.17	ug/L		02/07/23 06:36	02/07/23 11:03	1
Lead	**3.8**		1.0	0.12	ug/L		02/07/23 06:36	02/07/23 11:03	1
Antimony	ND		2.0	0.36	ug/L		02/07/23 06:36	02/07/23 11:03	1
Selenium	**0.58**	**J,DX**	2.0	0.52	ug/L		02/07/23 06:36	02/07/23 11:03	1
Thallium	ND		1.0	0.11	ug/L		02/07/23 06:36	02/07/23 11:03	1
Zinc	**13**	**J,DX**	20	2.8	ug/L		02/07/23 06:36	02/07/23 11:03	1
Aluminum	**1900**		15	8.6	ug/L		02/07/23 06:36	02/07/23 11:03	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/19/23 10:51	1
Arsenic	**0.58**	**J,DX BU**	1.0	0.16	ug/L			01/19/23 10:51	1
Barium	**6.1**	**BU**	1.0	0.17	ug/L			01/19/23 10:51	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/19/23 10:51	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/19/23 10:51	1
Chromium	**0.39**	**J,DX BU**	2.0	0.14	ug/L			01/19/23 10:51	1
Copper	**0.85**	**J,DX BU**	2.0	0.32	ug/L			01/19/23 10:51	1
Iron	**71**	**BU**	20	3.7	ug/L			01/19/23 10:51	1
Manganese	**1.5**	**BU**	1.0	0.41	ug/L			01/19/23 10:51	1
Nickel	**1.3**	**J,DX BU**	2.0	0.17	ug/L			01/19/23 10:51	1
Lead	ND	BU	1.0	0.12	ug/L			01/19/23 10:51	1
Antimony	ND	BU	2.0	0.36	ug/L			01/19/23 10:51	1
Selenium	ND	BU	2.0	0.52	ug/L			01/19/23 10:51	1
Thallium	ND	BU	1.0	0.11	ug/L			01/19/23 10:51	1
Zinc	ND	BU	20	2.8	ug/L			01/19/23 10:51	1
Aluminum	**120**	**BU**	15	8.6	ug/L			01/19/23 10:51	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

General Chemistry

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			01/24/23 15:25	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/23/23 14:04	1
Total Suspended Solids (SM 2540D)	**65**		2.5	2.1	mg/L			01/18/23 12:03	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-124260-1	LXBMP0011_20230114	91	94	95	101
570-124260-2	Trip Blank	100	84	110	94
LCS 570-296662/4	Lab Control Sample	87	97	92	98
LCS 570-296683/5	Lab Control Sample	96	100	99	97
LCSD 570-296662/5	Lab Control Sample Dup	86	97	92	100
LCSD 570-296683/6	Lab Control Sample Dup	96	99	100	96
MB 570-296662/10	Method Blank	84	93	92	101
MB 570-296683/10	Method Blank	100	82	109	94

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-124260-1	LXBMP0011_20230114	88	65	50	72	40	79
LCS 570-296958/2-A	Lab Control Sample	115	91	65	87	46	104
LCSD 570-296958/3-A	Lab Control Sample Dup	114	81	61	81	42	103
MB 570-296958/1-A	Method Blank	82	58	42	62	31	77

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-296662/10
Matrix: Water
Analysis Batch: 296662

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/18/23 11:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*60 - 140*		*01/18/23 11:24*	*1*
4-Bromofluorobenzene (Surr)	*93*		*60 - 140*		*01/18/23 11:24*	*1*
Dibromofluoromethane	*92*		*60 - 140*		*01/18/23 11:24*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*01/18/23 11:24*	*1*

Lab Sample ID: LCS 570-296662/4
Matrix: Water
Analysis Batch: 296662

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	19.0		ug/L		95	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*60 - 140*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*
Dibromofluoromethane	*92*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*

Lab Sample ID: LCSD 570-296662/5
Matrix: Water
Analysis Batch: 296662

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene			20.0	19.6		ug/L		98	65 - 135	3	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*60 - 140*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*
Dibromofluoromethane	*92*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: MB 570-296683/10
Matrix: Water
Analysis Batch: 296683

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/18/23 12:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*60 - 140*		*01/18/23 12:59*	*1*
4-Bromofluorobenzene (Surr)	*82*		*60 - 140*		*01/18/23 12:59*	*1*
Dibromofluoromethane	*109*		*60 - 140*		*01/18/23 12:59*	*1*
Toluene-d8 (Surr)	*94*		*60 - 140*		*01/18/23 12:59*	*1*

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-296683/5
Matrix: Water
Analysis Batch: 296683

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	20.3		ug/L		102	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*60 - 140*
4-Bromofluorobenzene (Surr)	*100*		*60 - 140*
Dibromofluoromethane	*99*		*60 - 140*
Toluene-d8 (Surr)	*97*		*60 - 140*

Lab Sample ID: LCSD 570-296683/6
Matrix: Water
Analysis Batch: 296683

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene			20.0	20.4		ug/L		102	65 - 135	0	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*60 - 140*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*
Dibromofluoromethane	*100*		*60 - 140*
Toluene-d8 (Surr)	*96*		*60 - 140*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-296958/1-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296958

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/19/23 05:37	01/30/23 15:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*82*		*28 - 127*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
2-Fluorobiphenyl (Surr)	*58*		*31 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
2-Fluorophenol (Surr)	*42*		*17 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
Nitrobenzene-d5 (Surr)	*62*		*27 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
Phenol-d6 (Surr)	*31*		*10 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
p-Terphenyl-d14 (Surr)	*77*		*45 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*

Lab Sample ID: LCS 570-296958/2-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296958

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bis(2-ethylhexyl) phthalate			20.0	24.1		ug/L		120	29 - 137		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*115*		*28 - 127*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-296958/2-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296958

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl (Surr)	*91*		*31 - 120*
2-Fluorophenol (Surr)	*65*		*17 - 120*
Nitrobenzene-d5 (Surr)	*87*		*27 - 120*
Phenol-d6 (Surr)	*46*		*10 - 120*
p-Terphenyl-d14 (Surr)	*104*		*45 - 120*

Lab Sample ID: LCSD 570-296958/3-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296958

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate			20.0	25.8		ug/L		129	29 - 137	7	50

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol (Surr)	*114*		*28 - 127*
2-Fluorobiphenyl (Surr)	*81*		*31 - 120*
2-Fluorophenol (Surr)	*61*		*17 - 120*
Nitrobenzene-d5 (Surr)	*81*		*27 - 120*
Phenol-d6 (Surr)	*42*		*10 - 120*
p-Terphenyl-d14 (Surr)	*103*		*45 - 120*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-296556/31
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/18/23 02:05	1

Lab Sample ID: LCS 570-296556/32
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	49.9		ug/L		100	95 - 107		

Lab Sample ID: LCSD 570-296556/33
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.1		ug/L		100	95 - 107	0	20

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: 570-124390-G-7 MS
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	0.055	J,DX	50.1	51.6		ug/L		103	85 - 121

Lab Sample ID: 570-124390-G-7 MSD
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.055	J,DX	50.1	51.2		ug/L		102	85 - 121	1	25

Lab Sample ID: MB 570-296615/1-A
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/18/23 06:52	1

Lab Sample ID: LCS 570-296615/2-A
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	50.6		ug/L		101	95 - 107

Lab Sample ID: LCSD 570-296615/3-A
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	50.7		ug/L		101	95 - 107	0	20

Lab Sample ID: 570-124252-D-1-B MS
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	0.036	J,DX	50.1	51.4		ug/L		103	85 - 121

Lab Sample ID: 570-124252-D-1-C MSD
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.036	J,DX	50.1	51.4		ug/L		103	85 - 121	0	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-296623/5
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/18/23 05:14	1
Nitrate as N	ND		0.10	0.020	mg/L			01/18/23 05:14	1

Lab Sample ID: LCS 570-296623/6
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.69		mg/L		107	90 - 110
Nitrate as N	5.00	5.12		mg/L		102	90 - 110

Lab Sample ID: LCSD 570-296623/7
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.69		mg/L		108	90 - 110	0	15
Nitrate as N	5.00	5.10		mg/L		102	90 - 110	0	15

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	ND		2.50	2.72		mg/L		109	80 - 120

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	ND		2.50	2.70		mg/L		108	80 - 120	0	20

Lab Sample ID: MB 570-296624/5
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			01/18/23 05:14	1
Sulfate	ND		1.0	0.24	mg/L			01/18/23 05:14	1

Lab Sample ID: LCS 570-296624/6
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.50	2.74		mg/L		110	90 - 110
Sulfate	50.0	50.7		mg/L		101	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 570-296624/7
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride			2.50	2.76		mg/L		110	90 - 110	1	15
Sulfate			50.0	50.6		mg/L		101	90 - 110	0	15

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	0.55		2.50	3.09		mg/L		101	80 - 120		

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.55		2.50	3.33		mg/L		111	80 - 120	8	20

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N - DL	6.5		5.00	11.3		mg/L		96	80 - 120		

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N - DL	6.5		5.00	11.3		mg/L		95	80 - 120	1	20

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate - DL	43		50.0	89.5		mg/L		94	80 - 120		

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate - DL	43		50.0	90.0		mg/L		95	80 - 120	1	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-297043/7
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/20/23 02:12	1

Lab Sample ID: LCS 570-297043/8
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	23.0		ug/L		92	85 - 115		

Lab Sample ID: LCSD 570-297043/9
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	23.5		ug/L		94	85 - 115	2	15

Lab Sample ID: 570-124466-C-9 MS
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	100	EY	50.0	153	EY	ug/L		101	80 - 120		

Lab Sample ID: 570-124466-C-9 MSD
Matrix: Water
Analysis Batch: 297043

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	100	EY	50.0	144	EY	ug/L		84	80 - 120	6	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-298173/1-A
Matrix: Water
Analysis Batch: 298346

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 298173

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		01/24/23 13:00	01/24/23 17:55	1

Lab Sample ID: LCS 570-298173/2-A
Matrix: Water
Analysis Batch: 298346

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 298173

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	498	J,DX	ug/L		100	85 - 115		

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 570-298173/3-A
Matrix: Water
Analysis Batch: 298346

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 298173

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	496	J,DX	ug/L		99	85 - 115	0	20

Lab Sample ID: 570-124230-A-1-E MS
Matrix: Water
Analysis Batch: 298346

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 298173

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	60	J,DX	500	556		ug/L		99	80 - 120		

Lab Sample ID: 570-124230-A-1-F MSD
Matrix: Water
Analysis Batch: 298346

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 298173

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	60	J,DX	500	563		ug/L		101	80 - 120	1	20

Lab Sample ID: MB 570-296797/1-A
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			01/20/23 02:22	1

Lab Sample ID: LCS 570-296797/2-A
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	501		ug/L		100	85 - 115		

Lab Sample ID: LCSD 570-296797/3-A
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	502		ug/L		100	85 - 115	0	20

Lab Sample ID: 570-124392-C-3-B MS
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	76	J,DX	500	577		ug/L		100	80 - 120		

Lab Sample ID: 570-124392-C-3-C MSD
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	76	J,DX	500	580		ug/L		101	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-301651/1-A
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		02/07/23 06:36	02/07/23 10:36	1
Arsenic	ND		1.0	0.16	ug/L		02/07/23 06:36	02/07/23 10:36	1
Barium	ND		1.0	0.17	ug/L		02/07/23 06:36	02/07/23 10:36	1
Beryllium	ND		0.50	0.26	ug/L		02/07/23 06:36	02/07/23 10:36	1
Cadmium	ND		1.0	0.13	ug/L		02/07/23 06:36	02/07/23 10:36	1
Chromium	ND		2.0	0.14	ug/L		02/07/23 06:36	02/07/23 10:36	1
Copper	ND		2.0	0.32	ug/L		02/07/23 06:36	02/07/23 10:36	1
Iron	ND		20	3.7	ug/L		02/07/23 06:36	02/07/23 10:36	1
Manganese	ND		1.0	0.41	ug/L		02/07/23 06:36	02/07/23 10:36	1
Nickel	ND		2.0	0.17	ug/L		02/07/23 06:36	02/07/23 10:36	1
Lead	ND		1.0	0.12	ug/L		02/07/23 06:36	02/07/23 10:36	1
Antimony	ND		2.0	0.36	ug/L		02/07/23 06:36	02/07/23 10:36	1
Selenium	ND		2.0	0.52	ug/L		02/07/23 06:36	02/07/23 10:36	1
Thallium	ND		1.0	0.11	ug/L		02/07/23 06:36	02/07/23 10:36	1
Zinc	ND		20	2.8	ug/L		02/07/23 06:36	02/07/23 10:36	1
Aluminum	ND		15	8.6	ug/L		02/07/23 06:36	02/07/23 10:36	1

Lab Sample ID: LCS 570-301651/2-A
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Silver			80.0	81.7		ug/L		102	85 - 115		
Arsenic			80.0	81.7		ug/L		102	85 - 115		
Barium			80.0	81.5		ug/L		102	85 - 115		
Beryllium			80.0	83.6		ug/L		105	85 - 115		
Cadmium			80.0	81.0		ug/L		101	85 - 115		
Chromium			80.0	82.2		ug/L		103	85 - 115		
Copper			80.0	80.7		ug/L		101	85 - 115		
Iron			800	828		ug/L		103	85 - 115		
Manganese			80.0	82.0		ug/L		103	85 - 115		
Nickel			80.0	81.4		ug/L		102	85 - 115		
Lead			80.0	81.4		ug/L		102	85 - 115		
Antimony			80.0	74.0		ug/L		93	85 - 115		
Selenium			80.0	80.0		ug/L		100	85 - 115		
Thallium			80.0	80.4		ug/L		101	85 - 115		
Zinc			80.0	80.3		ug/L		100	85 - 115		
Aluminum			80.0	82.4		ug/L		103	85 - 115		

Lab Sample ID: LCSD 570-301651/3-A
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver			80.0	81.0		ug/L		101	85 - 115	1	20
Arsenic			80.0	80.4		ug/L		101	85 - 115	2	20
Barium			80.0	81.0		ug/L		101	85 - 115	1	20
Beryllium			80.0	81.5		ug/L		102	85 - 115	3	20
Cadmium			80.0	80.6		ug/L		101	85 - 115	0	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-301651/3-A
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium			80.0	80.2		ug/L		100	85 - 115	2	20
Copper			80.0	79.8		ug/L		100	85 - 115	1	20
Iron			800	810		ug/L		101	85 - 115	2	20
Manganese			80.0	81.0		ug/L		101	85 - 115	1	20
Nickel			80.0	79.6		ug/L		99	85 - 115	2	20
Lead			80.0	80.9		ug/L		101	85 - 115	1	20
Antimony			80.0	75.1		ug/L		94	85 - 115	1	20
Selenium			80.0	78.8		ug/L		99	85 - 115	2	20
Thallium			80.0	80.2		ug/L		100	85 - 115	0	20
Zinc			80.0	78.0		ug/L		98	85 - 115	3	20
Aluminum			80.0	80.4		ug/L		100	85 - 115	2	20

Lab Sample ID: 570-126592-A-1-B MS
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	ND		80.0	75.5		ug/L		94	80 - 120
Arsenic	7.1		80.0	88.4		ug/L		102	80 - 120
Barium	360		80.0	439	BB	ug/L		98	80 - 120
Beryllium	ND		80.0	75.8		ug/L		95	80 - 120
Cadmium	ND		80.0	75.7		ug/L		95	80 - 120
Chromium	0.82	J,DX	80.0	78.6		ug/L		97	80 - 120
Copper	0.90	J,DX	80.0	74.1		ug/L		92	80 - 120
Iron	250		800	1010		ug/L		95	80 - 120
Manganese	100		80.0	182		ug/L		99	80 - 120
Nickel	6.5		80.0	80.1		ug/L		92	80 - 120
Lead	0.42	J,DX	80.0	75.7		ug/L		94	80 - 120
Antimony	1.7	J,DX	80.0	91.6		ug/L		112	80 - 120
Selenium	6.8		80.0	81.2		ug/L		93	80 - 120
Thallium	ND		80.0	72.5		ug/L		91	80 - 120
Zinc	25		80.0	96.2		ug/L		89	80 - 120
Aluminum	260		80.0	337		ug/L		95	80 - 120

Lab Sample ID: 570-126592-A-1-C MSD
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	ND		80.0	78.2		ug/L		98	80 - 120	3	20
Arsenic	7.1		80.0	87.7		ug/L		101	80 - 120	1	20
Barium	360		80.0	442	BB	ug/L		103	80 - 120	1	20
Beryllium	ND		80.0	78.0		ug/L		98	80 - 120	3	20
Cadmium	ND		80.0	77.9		ug/L		97	80 - 120	3	20
Chromium	0.82	J,DX	80.0	79.6		ug/L		98	80 - 120	1	20
Copper	0.90	J,DX	80.0	75.4		ug/L		93	80 - 120	2	20
Iron	250		800	1020		ug/L		97	80 - 120	1	20
Manganese	100		80.0	184		ug/L		101	80 - 120	1	20
Nickel	6.5		80.0	80.5		ug/L		92	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-126592-A-1-C MSD
Matrix: Water
Analysis Batch: 301811

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 301651

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Lead	0.42	J,DX	80.0	76.5		ug/L		95	80 - 120	1	20
Antimony	1.7	J,DX	80.0	93.3		ug/L		115	80 - 120	2	20
Selenium	6.8		80.0	80.4		ug/L		92	80 - 120	1	20
Thallium	ND		80.0	73.2		ug/L		92	80 - 120	1	20
Zinc	25		80.0	96.1		ug/L		89	80 - 120	0	20
Aluminum	260		80.0	342		ug/L		101	80 - 120	1	20

Lab Sample ID: MB 570-296798/1-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L			01/19/23 10:31	1
Arsenic	ND		1.0	0.16	ug/L			01/19/23 10:31	1
Barium	ND		1.0	0.17	ug/L			01/19/23 10:31	1
Beryllium	ND		0.50	0.26	ug/L			01/19/23 10:31	1
Cadmium	ND		1.0	0.13	ug/L			01/19/23 10:31	1
Chromium	ND		2.0	0.14	ug/L			01/19/23 10:31	1
Copper	ND		2.0	0.32	ug/L			01/19/23 10:31	1
Iron	ND		20	3.7	ug/L			01/19/23 10:31	1
Manganese	ND		1.0	0.41	ug/L			01/19/23 10:31	1
Nickel	ND		2.0	0.17	ug/L			01/19/23 10:31	1
Lead	0.167	J,DX	1.0	0.12	ug/L			01/19/23 10:31	1
Antimony	ND		2.0	0.36	ug/L			01/19/23 10:31	1
Selenium	ND		2.0	0.52	ug/L			01/19/23 10:31	1
Thallium	ND		1.0	0.11	ug/L			01/19/23 10:31	1
Zinc	ND		20	2.8	ug/L			01/19/23 10:31	1
Aluminum	ND		15	8.6	ug/L			01/19/23 10:31	1

Lab Sample ID: LCS 570-296798/2-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	80.0	75.2		ug/L		94	85 - 115
Arsenic	80.0	74.4		ug/L		93	85 - 115
Barium	80.0	73.6		ug/L		92	85 - 115
Beryllium	80.0	71.9		ug/L		90	85 - 115
Cadmium	80.0	74.3		ug/L		93	85 - 115
Chromium	80.0	74.1		ug/L		93	85 - 115
Copper	80.0	74.4		ug/L		93	85 - 115
Iron	800	767		ug/L		96	85 - 115
Manganese	80.0	75.0		ug/L		94	85 - 115
Nickel	80.0	74.4		ug/L		93	85 - 115
Lead	80.0	74.0		ug/L		93	85 - 115
Antimony	80.0	75.2		ug/L		94	85 - 115
Selenium	80.0	72.8		ug/L		91	85 - 115
Thallium	80.0	74.0		ug/L		92	85 - 115
Zinc	80.0	74.2		ug/L		93	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-296798/2-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum			80.0	76.6		ug/L		96	85 - 115		

Lab Sample ID: LCSD 570-296798/3-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver			80.0	74.3		ug/L		93	85 - 115	1	20
Arsenic			80.0	74.3		ug/L		93	85 - 115	0	20
Barium			80.0	74.8		ug/L		93	85 - 115	2	20
Beryllium			80.0	74.9		ug/L		94	85 - 115	4	20
Cadmium			80.0	74.2		ug/L		93	85 - 115	0	20
Chromium			80.0	74.1		ug/L		93	85 - 115	0	20
Copper			80.0	74.8		ug/L		93	85 - 115	0	20
Iron			800	772		ug/L		97	85 - 115	1	20
Manganese			80.0	75.5		ug/L		94	85 - 115	1	20
Nickel			80.0	75.0		ug/L		94	85 - 115	1	20
Lead			80.0	76.2		ug/L		95	85 - 115	3	20
Antimony			80.0	75.8		ug/L		95	85 - 115	1	20
Selenium			80.0	73.5		ug/L		92	85 - 115	1	20
Thallium			80.0	75.5		ug/L		94	85 - 115	2	20
Zinc			80.0	74.3		ug/L		93	85 - 115	0	20
Aluminum			80.0	74.4		ug/L		93	85 - 115	3	20

Lab Sample ID: 570-124392-C-3-E MS
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Silver	ND		80.0	75.6		ug/L		94	80 - 120		
Arsenic	1.3		80.0	77.1		ug/L		95	80 - 120		
Barium	9.1		80.0	84.9		ug/L		95	80 - 120		
Beryllium	ND		80.0	75.7		ug/L		95	80 - 120		
Cadmium	ND		80.0	74.9		ug/L		94	80 - 120		
Chromium	0.41	J,DX	80.0	75.7		ug/L		94	80 - 120		
Copper	4.8		80.0	79.6		ug/L		93	80 - 120		
Iron	110		800	851		ug/L		93	80 - 120		
Manganese	5.1		80.0	81.8		ug/L		96	80 - 120		
Nickel	1.5	J,DX	80.0	76.8		ug/L		94	80 - 120		
Lead	0.22	J,DX MB	80.0	74.4		ug/L		93	80 - 120		
Antimony	0.55	J,DX	80.0	77.7		ug/L		96	80 - 120		
Selenium	ND		80.0	75.3		ug/L		94	80 - 120		
Thallium	ND		80.0	73.4		ug/L		92	80 - 120		
Zinc	3.9	J,DX	80.0	76.7		ug/L		91	80 - 120		
Aluminum	140		80.0	217		ug/L		97	80 - 120		

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124392-C-3-F MSD
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	ND		80.0	74.6		ug/L		93	80 - 120	1	20
Arsenic	1.3		80.0	76.6		ug/L		94	80 - 120	1	20
Barium	9.1		80.0	84.1		ug/L		94	80 - 120	1	20
Beryllium	ND		80.0	73.1		ug/L		91	80 - 120	3	20
Cadmium	ND		80.0	74.0		ug/L		92	80 - 120	1	20
Chromium	0.41	J,DX	80.0	74.4		ug/L		93	80 - 120	2	20
Copper	4.8		80.0	78.9		ug/L		93	80 - 120	1	20
Iron	110		800	848		ug/L		93	80 - 120	0	20
Manganese	5.1		80.0	79.4		ug/L		93	80 - 120	3	20
Nickel	1.5	J,DX	80.0	76.3		ug/L		94	80 - 120	1	20
Lead	0.22	J,DX MB	80.0	74.4		ug/L		93	80 - 120	0	20
Antimony	0.55	J,DX	80.0	76.8		ug/L		95	80 - 120	1	20
Selenium	ND		80.0	76.4		ug/L		95	80 - 120	1	20
Thallium	ND		80.0	74.3		ug/L		93	80 - 120	1	20
Zinc	3.9	J,DX	80.0	77.1		ug/L		91	80 - 120	1	20
Aluminum	140		80.0	212		ug/L		91	80 - 120	2	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-297946/11
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/23/23 13:11	1

Lab Sample ID: LCS 570-297946/14
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	267		ug/L		107	90 - 110

Lab Sample ID: LCSD 570-297946/13
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	248		ug/L		99	90 - 110	7	20

Lab Sample ID: MRL 570-297946/10
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.66	J,DX	ug/L		93	50 - 150

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: 570-124243-S-1 MS
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	ND		250	216		ug/L		86	70 - 130

Lab Sample ID: 570-124243-S-1 MSD
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	227		ug/L		91	70 - 130	5	30

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-296761/1
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/18/23 12:02	1

Lab Sample ID: LCS 570-296761/2
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	101		mg/L		101	77 - 116

Lab Sample ID: LCSD 570-296761/3
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	99.0		mg/L		99	77 - 116	2	10

Lab Sample ID: 570-124511-F-1 DU
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	120		110		mg/L		9	10

GC/MS VOA

Analysis Batch: 296662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	624.1	
MB 570-296662/10	Method Blank	Total/NA	Water	624.1	
LCS 570-296662/4	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-296662/5	Lab Control Sample Dup	Total/NA	Water	624.1	

Analysis Batch: 296683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-2	Trip Blank	Total/NA	Water	624.1	
MB 570-296683/10	Method Blank	Total/NA	Water	624.1	
LCS 570-296683/5	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-296683/6	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 296958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	625	
MB 570-296958/1-A	Method Blank	Total/NA	Water	625	
LCS 570-296958/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-296958/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 299507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	625.1 SIM	296958
MB 570-296958/1-A	Method Blank	Total/NA	Water	625.1 SIM	296958
LCS 570-296958/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	296958
LCSD 570-296958/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	296958

HPLC/IC

Analysis Batch: 296556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	218.6	296615
570-124260-1	LXBMP0011_20230114	Total/NA	Water	218.6	
MB 570-296556/31	Method Blank	Total/NA	Water	218.6	
MB 570-296615/1-A	Method Blank	Dissolved	Water	218.6	296615
LCS 570-296556/32	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-296615/2-A	Lab Control Sample	Dissolved	Water	218.6	296615
LCSD 570-296556/33	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-296615/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	296615
570-124252-D-1-B MS	Matrix Spike	Dissolved	Water	218.6	296615
570-124252-D-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	218.6	296615
570-124390-G-7 MS	Matrix Spike	Total/NA	Water	218.6	
570-124390-G-7 MSD	Matrix Spike Duplicate	Total/NA	Water	218.6	

Filtration Batch: 296615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	Filtration	
MB 570-296615/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296615/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296615/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124252-D-1-B MS	Matrix Spike	Dissolved	Water	Filtration	

HPLC/IC (Continued)

Filtration Batch: 296615 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124252-D-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 296623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	300.0	
MB 570-296623/5	Method Blank	Total/NA	Water	300.0	
LCS 570-296623/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-296623/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124482-J-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MS - DL	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
570-124482-J-1 MSD - DL	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 296624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	300.0	
MB 570-296624/5	Method Blank	Total/NA	Water	300.0	
LCS 570-296624/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-296624/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124482-J-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MS - DL	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
570-124482-J-1 MSD - DL	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 297043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	314.0	
MB 570-297043/7	Method Blank	Total/NA	Water	314.0	
LCS 570-297043/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-297043/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-124466-C-9 MS	Matrix Spike	Total/NA	Water	314.0	
570-124466-C-9 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Metals

Filtration Batch: 296797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	Filtration	
MB 570-296797/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296797/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296797/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124392-C-3-B MS	Matrix Spike	Dissolved	Water	Filtration	
570-124392-C-3-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 296798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	Filtration	
MB 570-296798/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124392-C-3-E MS	Matrix Spike	Dissolved	Water	Filtration	

Metals (Continued)

Filtration Batch: 296798 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124392-C-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 297048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	200.8	296798
MB 570-296798/1-A	Method Blank	Dissolved	Water	200.8	296798
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	200.8	296798
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	296798
570-124392-C-3-E MS	Matrix Spike	Dissolved	Water	200.8	296798
570-124392-C-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	296798

Analysis Batch: 297291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	200.7 Rev 4.4	296797
MB 570-296797/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	296797
LCS 570-296797/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	296797
LCSD 570-296797/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	296797
570-124392-C-3-B MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	296797
570-124392-C-3-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	296797

Prep Batch: 298173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total Recoverable	Water	200.7	
MB 570-298173/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-298173/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-298173/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-124230-A-1-E MS	Matrix Spike	Total Recoverable	Water	200.7	
570-124230-A-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Analysis Batch: 298346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total Recoverable	Water	200.7 Rev 4.4	298173
MB 570-298173/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	298173
LCS 570-298173/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	298173
LCSD 570-298173/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	298173
570-124230-A-1-E MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	298173
570-124230-A-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	298173

Prep Batch: 301651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total Recoverable	Water	200.8	
MB 570-301651/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-301651/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-301651/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-126592-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	
570-126592-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 301811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total Recoverable	Water	200.8	301651
MB 570-301651/1-A	Method Blank	Total Recoverable	Water	200.8	301651

Metals (Continued)

Analysis Batch: 301811 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-301651/2-A	Lab Control Sample	Total Recoverable	Water	200.8	301651
LCSD 570-301651/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	301651
570-126592-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.8	301651
570-126592-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	301651

General Chemistry

Analysis Batch: 296761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	SM 2540D	
MB 570-296761/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-296761/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-296761/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-124511-F-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 297946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	Kelada 01	
MB 570-297946/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-297946/14	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-297946/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-297946/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-124243-S-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-124243-S-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 298235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	218.6 CR3	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Client Sample ID: LXBMP0011_20230114

Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		2	5 mL	5 mL	296662	01/18/23 13:32	OH1	EET CAL 4
	Instrument ID: GCMSW									
Total/NA	Prep	625			883.4 mL	2 mL	296958	01/19/23 05:37	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	299507	01/30/23 16:47	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Dissolved	Filtration	Filtration			100 mL	100 mL	296615	01/18/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	296556	01/18/23 08:04	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	296556	01/18/23 04:04	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296623	01/18/23 07:54	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296624	01/18/23 07:54	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	297043	01/20/23 10:22	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	296797	01/18/23 13:25	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			297291	01/20/23 02:44	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	298173	01/24/23 13:00	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			298346	01/24/23 18:29	P1R	EET CAL 4
	Instrument ID: ICP10									
Dissolved	Filtration	Filtration			50 mL	50 mL	296798	01/18/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			297048	01/19/23 10:51	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	301651	02/07/23 06:36	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			301811	02/07/23 11:03	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			298235	01/24/23 15:25	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	297946	01/23/23 14:04	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	400 mL	1000 mL	296761	01/18/23 12:03	BDH9	EET CAL 4
	Instrument ID: BAL62									

Client Sample ID: Trip Blank

Date Collected: 01/17/23 00:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	5 mL	5 mL	296683	01/18/23 13:22	P3GT	EET CAL 4
	Instrument ID: GCMSPP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124260-1	LXBMP0011_20230114	Water	01/14/23 10:30	01/17/23 18:25
570-124260-2	Trip Blank	Water	01/17/23 00:00	01/17/23 18:25

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, January 18, 2023 10:34 AM
To: Virendra Patel; Rapp, Kerry; Dallalah, Michelle
Subject: RE: Eurofins Calscience sample confirmation files from 570-124260-1 Boeing SSFL ISRA and BMP

EXTERNAL EMAIL*

Please analyze the nitrate and the trip blank for 624.1. thanks

Katherine Miller
HALEY & ALDRICH
Tel: 520.289.8606

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, January 18, 2023 11:08 AM
To: Miller, Katherine <KMiller@haleyaldrich.com>; Rapp, Kerry <KRapp@haleyaldrich.com>; Dallalah, Michelle <MDallalah@haleyaldrich.com>
Subject: FW: Eurofins Calscience sample confirmation files from 570-124260-1 Boeing SSFL ISRA and BMP
Importance: High

CAUTION: External Email

Please note the following receipt anomalies:

The following sample was received outside of holding time for NO3,NO2 & Cr VI: LXBMP0011_20230114 (570-124260-1).

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

Please confirm the trip blank needs to be analyzed or not for EPA 624.1. Thank you!

Best Regards,

Virendra Patel
Project Manager

Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

Follow Us! Facebook | LinkedIn

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, January 18, 2023 10:06 AM
To: Ms. Katherine Miller <kmiller@haleyaldrich.com>; Kerry Rapp <krapp@haleyaldrich.com>; Michelle Dallalah <mdallalah@haleyaldrich.com>
Subject: Eurofins Calscience sample confirmation files from 570-124260-1 Boeing SSFL ISRA and BMP

Hello,

Attached please find the sample confirmation files for job 570-124260-1; Boeing SSFL ISRA and BMP

Please feel free to contact me if you have any questions.

Thank you.

Virendra Patel
Project Manager

Eurofins Calscience
Phone: 714-895-5494
Mobile: 714-887-9901

E-mail: Virendra.Patel@et.eurofinsus.com
www.eurofinsus.com/env



Reference: [570-414477]
Attachments: 3

> > Bank information has changed, please refer to remittance information on invoice. < <

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

124260

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under this agreement shall be performed in accordance with the Chain of Custody in Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories, Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1.17.2023	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 896-6494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0) K-40 CS-137 (E901.0 or E901.1) Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904, E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Trifium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As, Ba Be Cd, Cr Cu, Fe Mn, Ni Pb Se Sb Tl; Method 200.7 B Zn (Total Dissolved)	Method 200.8 Ag Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni, Pb Se Sb Tl; Method 200.7 B Zn (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fi TSS to the top For metals, Lab may substitute 250mL Poly for 500mL -- only need to fil half of 500mL. Bottles that are sized up based on inventory availability only need to be partially fi led to meet the volume requirement as stated here
~~BGBMP0003_~~			~~G~~	~~WM~~	~~21~~	~~Y~~	~~N~~	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
LXBMP0011_20230114	01/14/23	1030	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 6=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6	

570-124260 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ___6___ Months

Special Instructions/QC Requirements & Comments. ECI #44009816
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No | Cooler Temp. (°C): Obs'd._____ Corr'd:_____ Therm ID No._____

	Company	Date/Time	Received by	Date/Time
Relinquished by:	JHA	01/17/23 1245	EC	1/17/23 1245
Relinquished by:	EC	1/17/23 1825		1/17/23 1825
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.4/2.4 13/1.7 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No.: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124260-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0011_20230114 (570-124260-1)	1/14/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/7/2023

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals BMP Performance

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the BMP Performance program starting from data collected October 1st, 2022.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124260-1

Login Number: 124260
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/13/2023 3:33:11 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124260-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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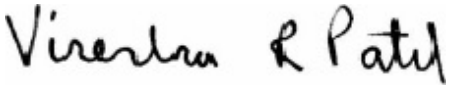
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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2/13/2023 3:33:11 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124260-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124260-2

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.3º C and 2.4º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: LXBMP0011_20230114 (570-124260-1), (CCV 320-651969/2) and (MB 320-651189/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
Method 1613B: Elevated reporting limits are provided for the following samples due to insufficient sample provided for preparation: LXBMP0011_20230114 (570-124260-1).

Nominal volume required by method is 1L.
preparation batch 320-651189

Method: 1613B_Sox_Sep_P
Matrix: Water

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-2

Client Sample ID: LXBMP0011_20230114

Lab Sample ID: 570-124260-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000062	J,DX	0.000058	0.00000030	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.00000034	J,DX q MB	0.000058	0.00000015	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000029	J,DX q	0.000058	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000029	J,DX MB	0.000058	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000065	J,DX	0.000058	0.00000023	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000084	J,DX MB	0.000058	0.00000020	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000055	J,DX MB	0.000058	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000033	J,DX q MB	0.000058	0.00000013	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000087	J,DX MB	0.000058	0.00000014	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000043	J,DX MB	0.000058	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000045	J,DX MB	0.000058	0.00000035	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000014	J,DX q MB	0.000058	0.00000022	ug/L	1		1613B	Total/NA
OCDD	0.000037	J,DX MB	0.00012	0.00000044	ug/L	1		1613B	Total/NA
OCDF	0.0000052	J,DX MB	0.00012	0.00000029	ug/L	1		1613B	Total/NA
Total TCDD	0.0000014	J,DX MB	0.000012	0.00000039	ug/L	1		1613B	Total/NA
Total TCDF	0.0000011	J,DX q MB	0.000012	0.00000014	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000010	J,DX q MB	0.000058	0.00000030	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000030	J,DX q MB	0.000058	0.00000015	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000061	J,DX q MB	0.000058	0.00000020	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000023	J,DX q MB	0.000058	0.00000012	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000094	J,DX q MB	0.000058	0.00000035	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000034	J,DX q MB	0.000058	0.00000022	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000012	0.00000039	ug/L		02/02/23 06:24	02/05/23 20:59	1
1,2,3,7,8-PeCDD	**0.00000062**	**J,DX**	0.000058	0.00000030	ug/L		02/02/23 06:24	02/05/23 20:59	1
1,2,3,7,8-PeCDF	**0.00000034**	**J,DX q MB**	0.000058	0.00000015	ug/L		02/02/23 06:24	02/05/23 20:59	1
2,3,4,7,8-PeCDF	**0.00000029**	**J,DX q**	0.000058	0.00000018	ug/L		02/02/23 06:24	02/05/23 20:59	1
1,2,3,4,7,8-HxCDD	**0.0000029**	**J,DX MB**	0.000058	0.00000023	ug/L		02/02/23 06:24	02/05/23 20:59	1
1,2,3,6,7,8-HxCDD	**0.00000065**	**J,DX**	0.000058	0.00000023	ug/L		02/02/23 06:24	02/05/23 20:59	1
1,2,3,7,8,9-HxCDD	**0.00000084**	**J,DX MB**	0.000058	0.00000020	ug/L		02/02/23 06:24	02/05/23 20:59	1
1,2,3,4,7,8-HxCDF	**0.00000055**	**J,DX MB**	0.000058	0.00000015	ug/L		02/02/23 06:24	02/05/23 20:59	1
1,2,3,6,7,8-HxCDF	**0.00000033**	**J,DX q MB**	0.000058	0.00000013	ug/L		02/02/23 06:24	02/05/23 20:59	1
1,2,3,7,8,9-HxCDF	**0.00000087**	**J,DX MB**	0.000058	0.00000014	ug/L		02/02/23 06:24	02/05/23 20:59	1
2,3,4,6,7,8-HxCDF	**0.00000043**	**J,DX MB**	0.000058	0.00000012	ug/L		02/02/23 06:24	02/05/23 20:59	1
1,2,3,4,6,7,8-HpCDD	**0.0000045**	**J,DX MB**	0.000058	0.00000035	ug/L		02/02/23 06:24	02/05/23 20:59	1
1,2,3,4,6,7,8-HpCDF	**0.0000014**	**J,DX q MB**	0.000058	0.00000022	ug/L		02/02/23 06:24	02/05/23 20:59	1
1,2,3,4,7,8,9-HpCDF	ND		0.000058	0.00000024	ug/L		02/02/23 06:24	02/05/23 20:59	1
OCDD	**0.000037**	**J,DX MB**	0.00012	0.00000044	ug/L		02/02/23 06:24	02/05/23 20:59	1
OCDF	**0.0000052**	**J,DX MB**	0.00012	0.00000029	ug/L		02/02/23 06:24	02/05/23 20:59	1
Total TCDD	**0.0000014**	**J,DX MB**	0.000012	0.00000039	ug/L		02/02/23 06:24	02/05/23 20:59	1
Total TCDF	**0.0000011**	**J,DX q MB**	0.000012	0.00000014	ug/L		02/02/23 06:24	02/05/23 20:59	1
Total PeCDD	**0.0000010**	**J,DX q MB**	0.000058	0.00000030	ug/L		02/02/23 06:24	02/05/23 20:59	1
Total PeCDF	**0.0000030**	**J,DX q MB**	0.000058	0.00000015	ug/L		02/02/23 06:24	02/05/23 20:59	1
Total HxCDD	**0.0000061**	**J,DX q MB**	0.000058	0.00000020	ug/L		02/02/23 06:24	02/05/23 20:59	1
Total HxCDF	**0.0000023**	**J,DX q MB**	0.000058	0.00000012	ug/L		02/02/23 06:24	02/05/23 20:59	1
Total HpCDD	**0.0000094**	**J,DX q MB**	0.000058	0.00000035	ug/L		02/02/23 06:24	02/05/23 20:59	1
Total HpCDF	**0.0000034**	**J,DX q MB**	0.000058	0.00000022	ug/L		02/02/23 06:24	02/05/23 20:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*25 - 164*	*02/02/23 06:24*	*02/05/23 20:59*	*1*
13C-2,3,7,8-TCDF	*68*		*24 - 169*	*02/02/23 06:24*	*02/05/23 20:59*	*1*
13C-1,2,3,7,8-PeCDD	*71*		*25 - 181*	*02/02/23 06:24*	*02/05/23 20:59*	*1*
13C-1,2,3,7,8-PeCDF	*71*		*24 - 185*	*02/02/23 06:24*	*02/05/23 20:59*	*1*
13C-2,3,4,7,8-PeCDF	*68*		*21 - 178*	*02/02/23 06:24*	*02/05/23 20:59*	*1*
13C-1,2,3,4,7,8-HxCDD	*65*		*32 - 141*	*02/02/23 06:24*	*02/05/23 20:59*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	71		28 - 130	02/02/23 06:24	02/05/23 20:59	1
13C-1,2,3,4,7,8-HxCDF	62		26 - 152	02/02/23 06:24	02/05/23 20:59	1
13C-1,2,3,6,7,8-HxCDF	71		26 - 123	02/02/23 06:24	02/05/23 20:59	1
13C-1,2,3,7,8,9-HxCDF	74		29 - 147	02/02/23 06:24	02/05/23 20:59	1
13C-2,3,4,6,7,8-HxCDF	75		28 - 136	02/02/23 06:24	02/05/23 20:59	1
13C-1,2,3,4,6,7,8-HpCDD	71		23 - 140	02/02/23 06:24	02/05/23 20:59	1
13C-1,2,3,4,6,7,8-HpCDF	65		28 - 143	02/02/23 06:24	02/05/23 20:59	1
13C-1,2,3,4,7,8,9-HpCDF	71		26 - 138	02/02/23 06:24	02/05/23 20:59	1
13C-OCDD	70		17 - 157	02/02/23 06:24	02/05/23 20:59	1
13C-OCDF	70		17 - 157	02/02/23 06:24	02/05/23 20:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	90		35 - 197	02/02/23 06:24	02/05/23 20:59	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-2

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000012	0.00000043	ug/L		02/02/23 06:24	02/06/23 16:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*70*		*24 - 169*	*02/02/23 06:24*	*02/06/23 16:02*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*108*		*35 - 197*	*02/02/23 06:24*	*02/06/23 16:02*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-124260-1	LXBMP0011_20230114	90
570-124260-1 - RA	LXBMP0011_20230114	108
MB 320-651189/1-A	Method Blank	93
MB 320-651189/1-A - RA	Method Blank	107

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-651189/2-A	Lab Control Sample	90
LCSD 320-651189/3-A	Lab Control Sample Dup	92

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-124260-1	LXBMP0011_20230114	69	68	71	71	68	65	71	62
570-124260-1 - RA	LXBMP0011_20230114		70						
MB 320-651189/1-A	Method Blank	60	61	58	57	56	46	55	45
MB 320-651189/1-A - RA	Method Blank		60						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-124260-1	LXBMP0011_20230114	71	74	75	71	65	71	70	70
570-124260-1 - RA	LXBMP0011_20230114								
MB 320-651189/1-A	Method Blank	54	53	55	50	47	50	48	47
MB 320-651189/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-651189/2-A	Lab Control Sample	73	71	78	76	76	75	80	69
LCSD 320-651189/3-A	Lab Control Sample Dup	77	76	78	79	72	68	75	63

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-651189/2-A	Lab Control Sample	81	78	81	77	73	77	78	78
LCSD 320-651189/3-A	Lab Control Sample Dup	75	82	82	79	69	79	80	79

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124260-2
Project/Site: Boeing SSFL ISRA and BMP

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000054	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8-PeCDF	0.000000691	J,DX	0.000050	0.00000018	ug/L		02/02/23 06:24	02/05/23 15:34	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8-HxCDD	0.00000202	J,DX q	0.000050	0.00000023	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000022	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8,9-HxCDD	0.000000925	J,DX	0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8-HxCDF	0.000000701	J,DX	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,6,7,8-HxCDF	0.000000358	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8,9-HxCDF	0.000000644	J,DX q	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 15:34	1
2,3,4,6,7,8-HxCDF	0.000000431	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,6,7,8-HpCDD	0.00000195	J,DX q	0.000050	0.00000028	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,6,7,8-HpCDF	0.00000178	J,DX q	0.000050	0.00000024	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8,9-HpCDF	0.000000759	J,DX q	0.000050	0.00000026	ug/L		02/02/23 06:24	02/05/23 15:34	1
OCDD	0.0000108	J,DX	0.00010	0.00000046	ug/L		02/02/23 06:24	02/05/23 15:34	1
OCDF	0.00000206	J,DX	0.00010	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total TCDD	0.00000231	J,DX	0.000010	0.00000054	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total TCDF	0.00000107	J,DX	0.000010	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total PeCDD	0.000000379	J,DX q	0.000050	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total PeCDF	0.000000691	J,DX	0.000050	0.00000018	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HxCDD	0.00000295	J,DX q	0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HxCDF	0.00000253	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HpCDD	0.00000444	J,DX q	0.000050	0.00000028	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HpCDF	0.00000254	J,DX q	0.000050	0.00000024	ug/L		02/02/23 06:24	02/05/23 15:34	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,7,8-PeCDD	*58*		*25 - 181*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,7,8-PeCDF	*57*		*24 - 185*	*02/02/23 06:24*	*02/05/23 15:34*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	56		21 - 178	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8-HxCDD	46		32 - 141	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,6,7,8-HxCDD	55		28 - 130	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8-HxCDF	45		26 - 152	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,6,7,8-HxCDF	54		26 - 123	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,7,8,9-HxCDF	53		29 - 147	02/02/23 06:24	02/05/23 15:34	1
13C-2,3,4,6,7,8-HxCDF	55		28 - 136	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,6,7,8-HpCDD	50		23 - 140	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,6,7,8-HpCDF	47		28 - 143	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8,9-HpCDF	50		26 - 138	02/02/23 06:24	02/05/23 15:34	1
13C-OCDD	48		17 - 157	02/02/23 06:24	02/05/23 15:34	1
13C-OCDF	47		17 - 157	02/02/23 06:24	02/05/23 15:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	93		35 - 197	02/02/23 06:24	02/05/23 15:34	1

Lab Sample ID: LCS 320-651189/2-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651189

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000208		ug/L		104	67 - 158		
2,3,7,8-TCDF			0.000200	0.000215		ug/L		107	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.00101		ug/L		101	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.00100		ug/L		100	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.00102		ug/L		102	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000971		ug/L		97	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00103		ug/L		103	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000993		ug/L		99	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.00101		ug/L		101	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000997		ug/L		100	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000982		ug/L		98	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00101		ug/L		101	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.00100		ug/L		100	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00102		ug/L		102	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000993		ug/L		99	78 - 138		
OCDD			0.00200	0.00200		ug/L		100	78 - 144		
OCDF			0.00200	0.00207		ug/L		103	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	73		20 - 175
13C-2,3,7,8-TCDF	71		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	76		21 - 192
13C-2,3,4,7,8-PeCDF	76		13 - 328
13C-1,2,3,4,7,8-HxCDD	75		21 - 193
13C-1,2,3,6,7,8-HxCDD	80		25 - 163
13C-1,2,3,4,7,8-HxCDF	69		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-651189/2-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	81		21 - 159
13C-1,2,3,7,8,9-HxCDF	78		17 - 205
13C-2,3,4,6,7,8-HxCDF	81		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	77		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	73		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	77		20 - 186
13C-OCDD	78		13 - 199
13C-OCDF	78		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	90		31 - 191

Lab Sample ID: LCSD 320-651189/3-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651189

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000216		ug/L		108	67 - 158	3	50
2,3,7,8-TCDF			0.000200	0.000221		ug/L		110	75 - 158	3	50
1,2,3,7,8-PeCDD			0.00100	0.00105		ug/L		105	70 - 142	4	50
1,2,3,7,8-PeCDF			0.00100	0.00104		ug/L		104	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.00106		ug/L		106	68 - 160	4	50
1,2,3,4,7,8-HxCDD			0.00100	0.00102		ug/L		102	70 - 164	5	50
1,2,3,6,7,8-HxCDD			0.00100	0.00107		ug/L		107	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.00114		ug/L		114	64 - 162	14	50
1,2,3,4,7,8-HxCDF			0.00100	0.00106		ug/L		106	72 - 134	5	50
1,2,3,6,7,8-HxCDF			0.00100	0.00103		ug/L		103	84 - 130	3	50
1,2,3,7,8,9-HxCDF			0.00100	0.00103		ug/L		103	78 - 130	4	50
2,3,4,6,7,8-HxCDF			0.00100	0.00104		ug/L		104	70 - 156	3	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00104		ug/L		104	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00106		ug/L		106	82 - 122	4	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00104		ug/L		104	78 - 138	4	50
OCDD			0.00200	0.00207		ug/L		104	78 - 144	4	50
OCDF			0.00200	0.00216		ug/L		108	63 - 170	4	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 175
13C-2,3,7,8-TCDF	76		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	79		21 - 192
13C-2,3,4,7,8-PeCDF	72		13 - 328
13C-1,2,3,4,7,8-HxCDD	68		21 - 193
13C-1,2,3,6,7,8-HxCDD	75		25 - 163
13C-1,2,3,4,7,8-HxCDF	63		19 - 202
13C-1,2,3,6,7,8-HxCDF	75		21 - 159
13C-1,2,3,7,8,9-HxCDF	82		17 - 205
13C-2,3,4,6,7,8-HxCDF	82		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	79		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-651189/3-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	69		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	80		13 - 199
13C-OCDF	79		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651969

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000042	ug/L		02/02/23 06:24	02/06/23 12:44	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	60		24 - 169	02/02/23 06:24	02/06/23 12:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	107		35 - 197	02/02/23 06:24	02/06/23 12:44	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-2

Specialty Organics

Prep Batch: 651189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1 - RA	LXBMP0011_20230114	Total/NA	Water	1613B	
570-124260-1	LXBMP0011_20230114	Total/NA	Water	1613B	
MB 320-651189/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-651189/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-651189/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-651189/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 651907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	1613B	651189
MB 320-651189/1-A	Method Blank	Total/NA	Water	1613B	651189
LCS 320-651189/2-A	Lab Control Sample	Total/NA	Water	1613B	651189
LCSD 320-651189/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	651189

Analysis Batch: 651969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1 - RA	LXBMP0011_20230114	Total/NA	Water	1613B	651189
MB 320-651189/1-A - RA	Method Blank	Total/NA	Water	1613B	651189

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-2

Client Sample ID: LXBMP0011_20230114

Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		863.7 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651969	02/06/23 16:02	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			863.7 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	651907	02/05/23 20:59	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-2

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124260-1	LXBMP0011_20230114	Water	01/14/23 10:30	01/17/23 18:25

124260

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under our laboratory performed in accordance with QAPP in Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1.17.2023	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 896-6494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0) K-40 CS-137 (E901.0 or E901.1) Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904, E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Trifium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As, Ba Be Cd, Cr Cu, Fe Mn, Ni Pb Se Sb Tl; Method 200.7 B Zn (Total Dissolved)	Method 200.8 Ag Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni, Pb Se Sb Tl; Method 200.7 B Zn (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fi TSS to the top For metals, Lab may substitute 250mL Poly for 500mL -- only need to fil half of 500mL. Bottles that are sized up based on inventory availability only need to be partially fi led to meet the volume requirement as stated here
~~BGBMP0003_~~			~~G~~	~~WM~~	~~21~~	~~Y~~	~~N~~	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
LXBMP0011_20230114	01/14/23	1030	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 6=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6	

570-124260 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009816
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No | Cooler Temp. (°C): Obs'd._____ Corr'd:_____ Therm ID No._____

Relinquished by	Company	Date/Time	Received by	Date/Time
[signature]	JHA	01/17/23 1245	[signature] EC	1/17/23 1245
[signature]	EC	1/17/23 1825	Received by	1/17/23 1825
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.4/2.4 13/1.7 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Page 22 of 26

2/13/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No.: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124260-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0011_20230114 (570-124260-1)	1/14/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204509.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124260-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/6/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
LXBMP0011_20230114 (570-124260-1)	1/14/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/18/23 1325			1/19/23 910	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 1.8C

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124260-2

Login Number: 124260
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124260-2

Login Number: 124260
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/19/23 11:49 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8c 1.7c 2.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/24/2023 12:51:14 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124260-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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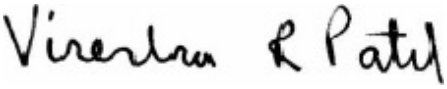
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124260-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124260-3

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.3º C and 2.4º C.

Metals
Method 1631E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following sample associated with analytical batch 580-416060 were outside control limits: (580-122334-A-10 MS) and (580-122334-A-10 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-3

Client Sample ID: LXBMP0011_20230114

Lab Sample ID: 570-124260-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.019		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.012		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-3

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.019		0.00050	0.000079	ug/L			01/20/23 16:55	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-3

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.012		0.00050	0.000079	ug/L			01/20/23 18:06	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-416060/19
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:46	1

Lab Sample ID: MB 580-416060/20
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:50	1

Lab Sample ID: MB 580-416060/23
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 13:03	1

Lab Sample ID: LCS 580-416060/29
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00449		ug/L		90	77 - 123		

Lab Sample ID: LCSD 580-416060/32
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00438		ug/L		88	77 - 123	2	24

Lab Sample ID: 570-124252-K-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.011		0.0150	0.0255		ug/L		99	71 - 125		

Lab Sample ID: 570-124252-K-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.011		0.0150	0.0259		ug/L		102	71 - 125	2	24

Lab Sample ID: 570-124263-D-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.14		0.200	0.360		ug/L		109	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 570-124263-D-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.14		0.200	0.358		ug/L		108	71 - 125	1	24

Lab Sample ID: MB 580-415853/1-A
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 14:46	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-3

Metals

Filtration Batch: 415853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	Filtration	
MB 580-415853/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 416060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	1631E	415853
570-124260-1	LXBMP0011_20230114	Total/NA	Water	1631E	
MB 580-415853/1-A	Method Blank	Dissolved	Water	1631E	415853
MB 580-416060/19	Method Blank	Total/NA	Water	1631E	
MB 580-416060/20	Method Blank	Total/NA	Water	1631E	
MB 580-416060/23	Method Blank	Total/NA	Water	1631E	
LCS 580-416060/29	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-416060/32	Lab Control Sample Dup	Total/NA	Water	1631E	
570-124252-K-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-124252-K-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
570-124263-D-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-124263-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124260-3
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: LXBMP0011_20230114
Lab Sample ID: 570-124260-1
Date Collected: 01/14/23 10:30
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415853	01/19/23 13:15	AJD	EET SEA
Dissolved	Analysis	1631E		1			416060	01/20/23 18:06	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			416060	01/20/23 16:55	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124260-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-3

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124260-1	LXBMP0011_20230114	Water	01/14/23 10:30	01/17/23 18:25

124260

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under our laboratory permit will be performed in accordance with the QAPP in Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories, Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1.17.2023	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 896-6494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0) K-40 CS-137 (E901.0 or E901.1) Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904, E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Trifium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As, Ba Be Cd, Cr Cu, Fe Mn, Ni Pb Se Sb Tl; Method 200.7 B Zn (Total Dissolved)	Method 200.8 Ag Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni, Pb Se Sb Tl; Method 200.7, B Zn (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fi TSS to the top For metals, Lab may substitute 250mL Poly for 500mL -- only need to fil half of 500mL. Bottles that are sized up based on inventory availability only need to be partially fi led to meet the volume requirement as stated here
~~BGBMP0003_~~			~~G~~	~~WM~~	~~21~~	~~Y~~	~~N~~	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
LXBMP0011_20230114	01/14/23	1030	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 6=NaOH; 6= Other

								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6

570-124260 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009816
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No		Cooler Temp. (°C): Obs'd._____ Corr'd:_____ Therm ID No._____	
Relinquished by:	Company: JHA	Date/Time: 01/17/23 1245	Received by: EC	Date/Time: 1/17/23 1245
Relinquished by:	Company: EC	Date/Time: 1/17/23/1825	Received by:	Date/Time: 1/17/23 1825
Relinquished by	Company	Date/Time	Received in Laboratory by:	Date/Time

2.4/2.4 13/1.7 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

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1/24/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No.: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124260-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0011_20230114 (570-124260-1)	1/14/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/24/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204480.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124260-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0011_20230114 (570-124260-1)	1/14/23	10:30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 1/18/23 1230	Company	Received by: [signature]	Date/Time: 1/19/23 9:45	Company: EFCS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: NP	Cooler Temperature(s) °C and Other Remarks:			

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124260-3

Login Number: 124260
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124260-3

Login Number: 124260
List Number: 4
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/19/23 12:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124260-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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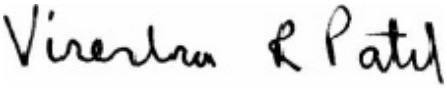
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124260-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124260-4

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.3º C and 2.4º C.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-4

Client Sample ID: LXBMP0011_20230114

Lab Sample ID: 570-124260-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Clay (less than 0.00391 mm)	2.85		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	38.09		0.01	0.01	%	1		D4464	Total/NA
Medium Sand (0.25 to 0.5 mm)	0.38		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	30.58		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	33.43		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	28.10		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-4

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**2.85**		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	**38.09**		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	**0.38**		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	**30.58**		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	**33.43**		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	**28.10**		0.01	0.01	%			02/04/23 13:34	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

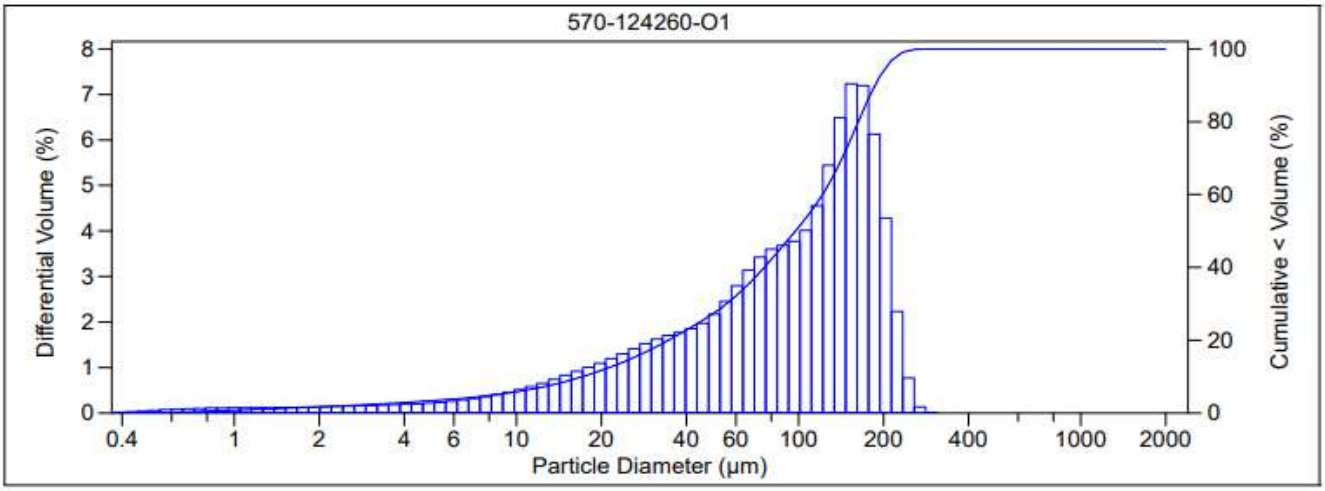
Haley & Aldrich, Inc.

Date Sampled:	01/14/23
Date Received:	01/17/23
Work Order No:	570-124260
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
LXBMP0011_20230114		VF clay+colloids	0.101

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.38	38.09	28.10	30.58	2.85	33.43



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

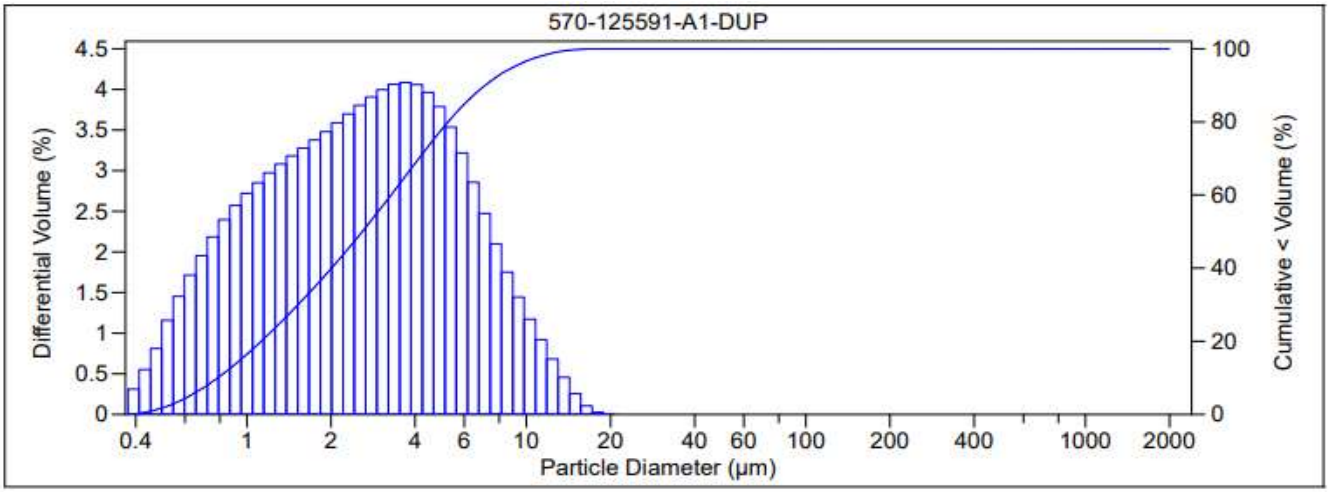
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125590
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13130

Sample ID	Depth ft	Description	Mean Grain Size mm
130-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	32.31	67.69	100.00



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

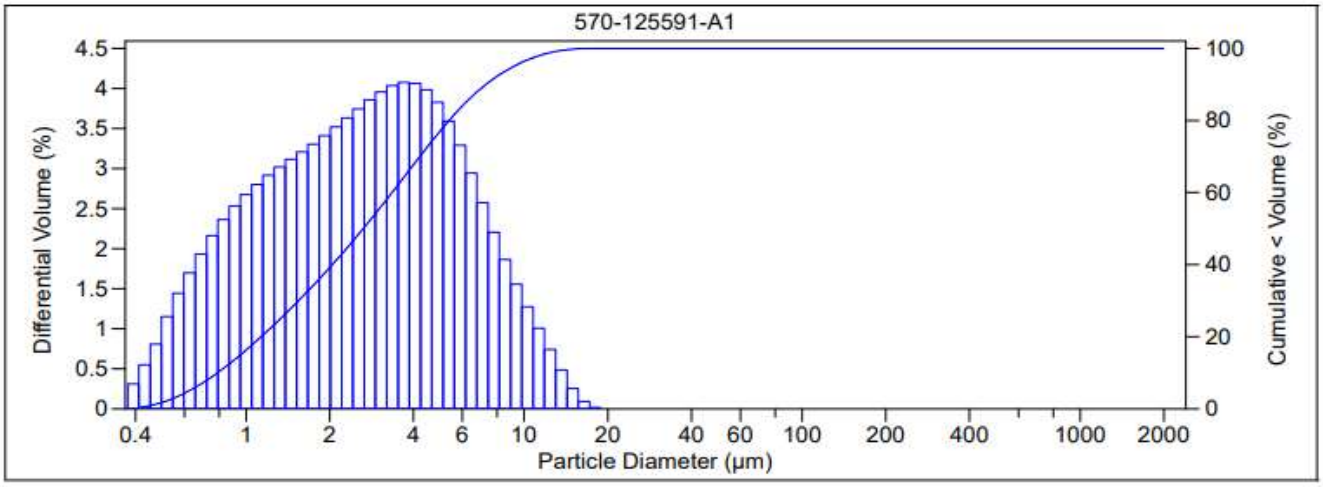
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125591
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13131

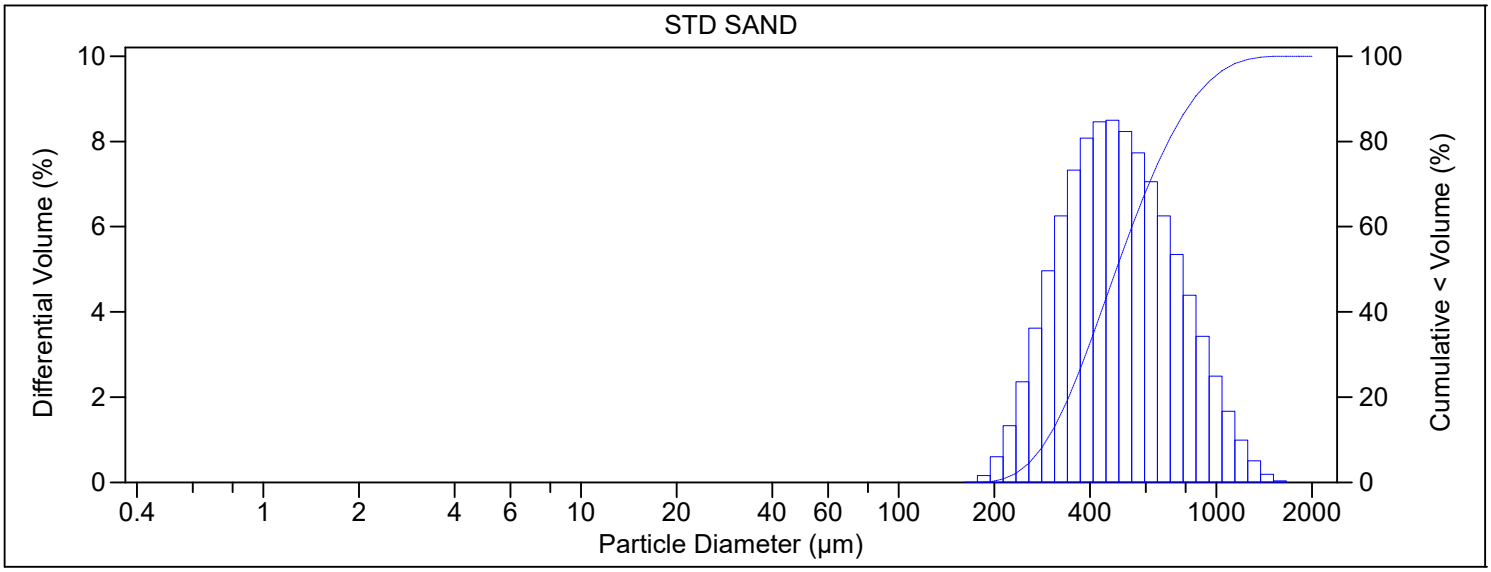
Sample ID	Depth ft	Description	Mean Grain Size mm
131-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	33.28	66.72	100.00



V 3.0

File name:	C:\LS13320\STD SAND_ 3 Feb 2023_19.52.20.$ls STD SAND_ 3 Feb 2023_19.52.20.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	22 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	19:51 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 3 Feb 2023_19.52.20.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	534.6 µm	S.D.:	224.4 µm
Median:	485.0 µm	Variance:	50358 µm^2
Mean/Median ratio:	1.102	Skewness:	1.068 Right skewed
Mode:	471.1 µm	Kurtosis:	1.067 Leptokurtic

d_{10}: 292.7 µm d_{50}: 485.0 µm d_{90}: 851.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.02	Median:	1.04	Deviation:	0.60
Skewness:	-0.06	Kurtosis:	0.93		

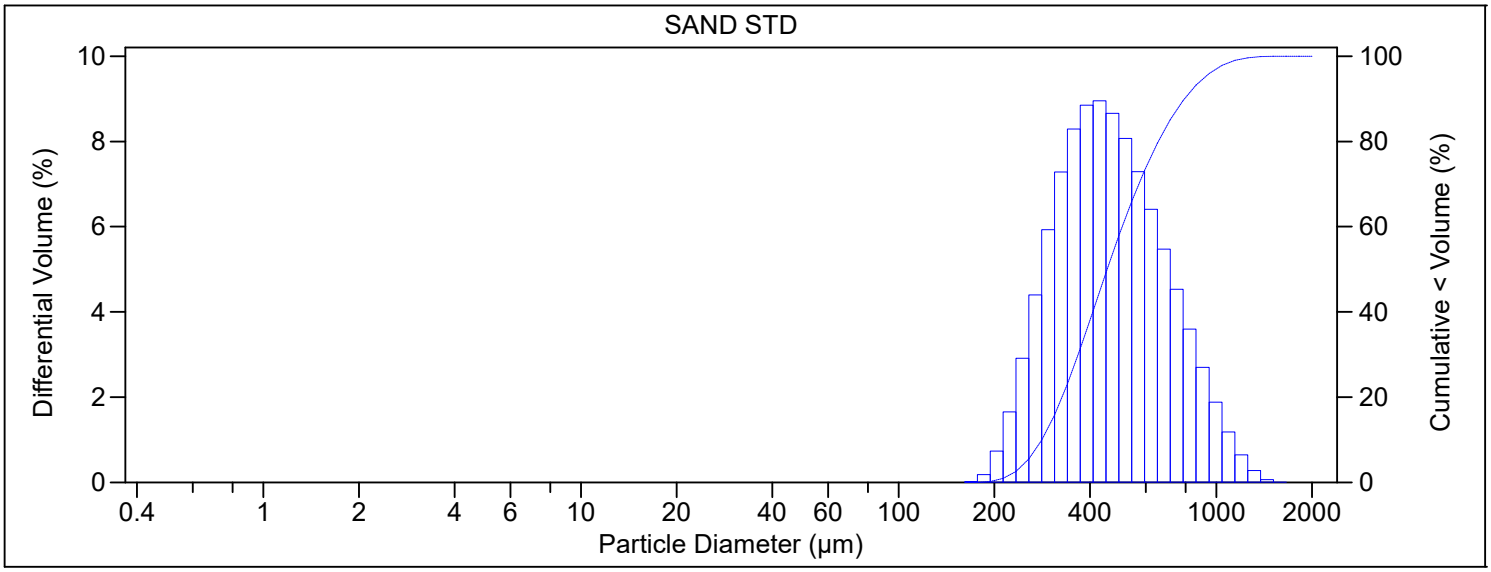
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
260.7 µm	323.9 µm	365.7 µm	434.7 µm	485.0 µm	656.2 µm	756.9 µm	981.3 µm

Particle Diameter µm	STD SAND_ 3 Feb 2023 _19.52.20 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	3.75
250	49.0
500	42.8
1000	4.50
2000	

STD SAND_ 3 Feb 2023_19.52.20.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.99
0.412	0	22.73	0	1255	0.51
0.452	0	24.95	0	1377	0.19
0.496	0	27.39	0	1512	0.034
0.545	0	30.07	0	1660	0.0013
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.011		
3.206	0	176.9	0.16		
3.519	0	194.2	0.60		
3.863	0	213.2	1.33		
4.241	0	234.1	2.36		
4.656	0	256.9	3.62		
5.111	0	282.1	4.97		
5.611	0	309.6	6.26		
6.159	0	339.9	7.33		
6.761	0	373.1	8.07		
7.422	0	409.6	8.46		
8.148	0	449.7	8.50		
8.944	0	493.6	8.23		
9.819	0	541.9	7.73		
10.78	0	594.9	7.06		
11.83	0	653.0	6.25		
12.99	0	716.9	5.35		
14.26	0	786.9	4.39		
15.65	0	863.9	3.43		
17.18	0	948.3	2.50		
18.86	0	1041	1.67		

File name:	C:\LS13320\SAND STD_ 3 Feb 2023_20.33.47.$ls		
	SAND STD_ 3 Feb 2023_20.33.47.$ls		
File ID:	SAND STD		
Sample ID:	SAND STD		
Operator:	C6FB		
Run number:	24		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:32 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) SAND STD_ 3 Feb 2023_20.33.47.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	501.8 µm	S.D.:	207.4 µm
Median:	453.7 µm	Variance:	42999 µm^2
Mean/Median ratio:	1.106	Skewness:	1.134 Right skewed
Mode:	429.2 µm	Kurtosis:	1.262 Leptokurtic

d_{10}: 282.5 µm d_{50}: 453.7 µm d_{90}: 794.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.11	Median:	1.14	Deviation:	0.58
Skewness:	-0.08	Kurtosis:	0.94		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
253.0 µm	310.4 µm	347.5 µm	408.6 µm	453.7 µm	611.0 µm	703.9 µm	919.1 µm

Particle Diameter µm	SAND STD_ 3 Feb 2023 _20.33.47 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	4.62
250	54.3
500	38.1
1000	3.02
2000	

SAND STD_ 3 Feb 2023_20.33.47.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.65
0.412	0	22.73	0	1255	0.28
0.452	0	24.95	0	1377	0.068
0.496	0	27.39	0	1512	0.0041
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.012		
3.206	0	176.9	0.19		
3.519	0	194.2	0.74		
3.863	0	213.2	1.65		
4.241	0	234.1	2.91		
4.656	0	256.9	4.40		
5.111	0	282.1	5.93		
5.611	0	309.6	7.28		
6.159	0	339.9	8.29		
6.761	0	373.1	8.85		
7.422	0	409.6	8.95		
8.148	0	449.7	8.66		
8.944	0	493.6	8.07		
9.819	0	541.9	7.29		
10.78	0	594.9	6.41		
11.83	0	653.0	5.48		
12.99	0	716.9	4.53		
14.26	0	786.9	3.59		
15.65	0	863.9	2.70		
17.18	0	948.3	1.88		
18.86	0	1041	1.18		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-4

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-125591-A-1 DU
Matrix: Water
Analysis Batch: 301228

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay (less than 0.00391 mm)	66.72			67.69		%				1	20
Coarse Sand (0.5mm to 1mm)	ND			ND		%				NC	20
Fine Sand (0.125 to 0.25mm)	ND			ND		%				NC	20
Gravel (greater than 2 mm)	ND			ND		%				NC	20
Medium Sand (0.25 to 0.5 mm)	ND			ND		%				NC	20
Silt (0.00391 to 0.0625mm)	33.28			32.31		%				3	20
Total Silt and Clay (0 to 0.0626mm)	100.00			100.00		%				0	20
Very Coarse Sand (1 to 2mm)	ND			ND		%				NC	20
Very Fine Sand (0.0625 to 0.125 mm)	ND			ND		%				NC	20

Geotechnical

Analysis Batch: 301228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	D4464	
LCS 570-301228/22	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-301228/24	Lab Control Sample Dup	Total/NA	Water	D4464	
570-125591-A-1 DU	Duplicate	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124260-4
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: LXBMP0011_20230114
Lab Sample ID: 570-124260-1
Date Collected: 01/14/23 10:30
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-4

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-4

Method	Method Description	Protocol	Laboratory
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4

Protocol References:

ASTM = ASTM International

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124260-1	LXBMP0011_20230114	Water	01/14/23 10:30	01/17/23 18:25

124260

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under our laboratory performed in accordance with QAPP in Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1.17.2023	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 896-6494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0) K-40 CS-137 (E901.0 or E901.1) Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904, E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Trifium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As, Ba Be Cd, Cr Cu, Fe Mn, Ni Pb Se Sb Tl; Method 200.7 B Zn (Total Dissolved)	Method 200.8 Ag Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni, Pb Se Sb Tl; Method 200.7 B Zn (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fi TSS to the top For metals, Lab may substitute 250mL Poly for 500mL -- only need to fil half of 500mL. Bottles that are sized up based on inventory availability only need to be partially fi led to meet the volume requirement as stated here
~~BGBMP0003_~~			~~G~~	~~WM~~	~~21~~	~~Y~~	~~N~~	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
LXBMP0011_20230114	01/14/23	1030	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 6=NaOH; 6= Other

								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6

570-124260 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments. ECI #44009816
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No | Cooler Temp. (°C): Obs'd._____ Corr'd:_____ Therm ID No._____

	Company	Date/Time	Received by	Date/Time
Relinquished by	JHA	01/17/23 1245	EC	1/17/23 1245
Relinquished by	EC	1/17/23 1825	Received by	1/17/23 1825
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.4/2.4 13/1.7 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Page 21 of 23

2/7/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No.: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124260-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0011_20230114 (570-124260-1)	1/14/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124260-4

Login Number: 124260
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/23/2023 1:04:04 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124260-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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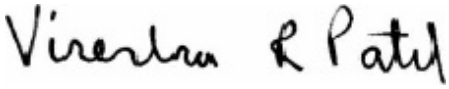

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Authorized for release by
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(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.
X	Carrier is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124260-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124260-5

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.3º C and 2.4º C.

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6. The samples were adjusted to the appropriate pH in the laboratory.

Job#: 570-124260 -1
Job#: 570-124252 -1.2.3
Job#: 570-124263 -1,2
Job#: 570-124262 -1

The following sample was received outside of holding time for NO3,NO2 & Cr VI: LXBMP0011_20230114 (570-124260-1).

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

The clients office was contacted with the above sample receipt anomalies. The laboratory was provided written direction on how to proceed, please refer to the COC section of the report for further details.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 598534
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

LXBMP0011_20230114 (570-124260-1), (LCS 160-598534/2-A), (LCSB 160-598534/3-A), (MB 160-598534/1-A), (570-124230-R-1-G), (570-124230-R-1-J DU), (570-124230-R-1-H MS) and (570-124230-R-1-I MSBT)

Method 901.1: Gamma Prep Batch 160-597949
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228

Job ID: 570-124260-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

LXBMP0011_20230114 (570-124260-1), (570-123901-U-2-E) and (570-123901-U-2-F DU)

Method 901.1: Gamma Prep Batch 160-597709
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

LXBMP0011_20230114 (570-124260-1), (570-124252-U-1-D) and (570-124252-U-1-F DU)

Method 903.0: Radium-226 batch 597616
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time

Job ID: 570-124260-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

applied as the Activity Reference Date.
LXBMP0011_20230114 (570-124260-1), (LCS 160-597616/2-A), (MB 160-597616/1-A), (160-48612-B-1-A) and (160-48612-D-1-A DU)

Methods 903.0, 9315: Radium-226 batch 598000
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
LXBMP0011_20230114 (570-124260-1), (LCS 160-598000/2-A), (LCSD 160-598000/3-A) and (MB 160-598000/1-A)

Method 904.0: Radium 228 batch 597622
The LCS recovered at (126%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-597622/2-A)

Method 904.0: Radium 228 batch 597622
The detection goal was not met for the following sample(s). Samples are prepped at a reduced volume due to the presence of matrix interferences: LXBMP0011_20230114 (570-124260-1), (160-48612-B-1-B) and (160-48612-D-1-B DU). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium 228 batch 597622
The lower control limit (40%) for the following sample: LXBMP0011_20230114 (570-124260-1). There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method 904.0: Radium 228 batch 597622
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
LXBMP0011_20230114 (570-124260-1), (LCS 160-597622/2-A), (MB 160-597622/1-A), (160-48612-B-1-B) and (160-48612-D-1-B DU)

Methods 904.0, 9320: Radium-228 batch 598012
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
LXBMP0011_20230114 (570-124260-1), (LCS 160-598012/2-A), (LCSD 160-598012/3-A) and (MB 160-598012/1-A)

Method 905: Strontium prep batch 160-597624:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. LXBMP0011_20230114 (570-124260-1), (LCS 160-597624/2-A), (LCSD 160-597624/3-A) and (MB 160-597624/1-A)

Method 905: Strontium-90 prep batch 160-598546:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. LXBMP0011_20230114 (570-124260-1)

Methods 900.0, 905: Gross Alpha Beta prep batch 160-598892:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time

Job ID: 570-124260-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

applied as the Activity Reference Date. (LCS 160-598546/2-A), (LCSD 160-598546/3-A) and (MB 160-598546/1-A)

Method 906.0: Tritium 598717
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. LXBMP0011_20230114 (570-124260-1), (LCS 160-598717/2-A), (MB 160-598717/1-A), (570-124392-Q-1-A), (570-124392-Q-1-B DU), (570-124868-Q-1-A) and (570-124868-Q-1-B MS)

Method A-01-R: Isotopic Uranium batch 598078
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
LXBMP0011_20230114 (570-124260-1), (LCS 160-598078/2-A), (MB 160-598078/1-A), (570-124263-K-2-C) and (570-124263-K-2-D DU)

Method ExtChrom: Uranium Prep Batch 160-597078:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: LXBMP0011_20230114 (570-124260-1).

Method PrecSep_0:

Method PrecSep_0: Radium-228 Prep Batch 160-598012

The following sample was prepared at a reduced aliquot due to Matrix: LXBMP0011_20230114 (570-124260-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0: Radium 228 prep batch 160-597622

The yttrium recovery is outside the lower control limit (40%) for the following sample: LXBMP0011_20230114 (570-124260-1). There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method PrecSep-21:

Method PrecSep-21: Radium-226 Prep Batch 160-598000

The following sample was prepared at a reduced aliquot due to Matrix: LXBMP0011_20230114 (570-124260-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-597624

The following sample was prepared at a reduced aliquot due to Matrix: LXBMP0011_20230114 (570-124260-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-598546

Insufficient sample volume was available to perform a sample duplicate for the following samples: LXBMP0011_20230114 (570-124260-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Job ID: 570-124260-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method PrecSep-7: Strontium-90 Prep Batch 160-598546

The following sample was prepared at a reduced aliquot due to Matrix: LXBMP0011_20230114 (570-124260-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Client Sample ID: LXBMP0011_20230114 **Lab Sample ID: 570-124260-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	2.76		1.06	1.10	3.00	1.22	pCi/L	01/27/23 10:37	02/13/23 16:14	1
Gross Beta	1.35		0.610	0.625	4.00	0.809	pCi/L	01/27/23 10:37	02/13/23 16:14	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.55		0.890	0.907	3.00	1.22	pCi/L	01/27/23 10:37	02/13/23 18:37	1
Gross Beta	1.83		0.678	0.702	4.00	0.890	pCi/L	01/27/23 10:37	02/13/23 18:37	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-5.31	U	9.32	9.34	20.0	11.0	pCi/L	01/20/23 14:22	02/21/23 03:08	1
Potassium-40	-67.2	U	83.3	83.6		124	pCi/L	01/20/23 14:22	02/21/23 03:08	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.207	U	7.01	7.01	20.0	8.82	pCi/L	01/23/23 15:17	02/08/23 12:01	1
Potassium-40	-48.2	U	73.6	73.9		116	pCi/L	01/23/23 15:17	02/08/23 12:01	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.190	U	0.158	0.159	1.00	0.236	pCi/L	01/20/23 12:30	02/13/23 15:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.0*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:30*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0248	U	0.0517	0.0518	1.00	0.0963	pCi/L	01/24/23 10:22	02/15/23 10:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.1*		*40 - 110*	*01/24/23 10:22*	*02/15/23 10:13*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.115	U G	1.31	1.31	1.00	2.37	pCi/L	01/20/23 12:59	01/26/23 12:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.0*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:22*	*1*
Y Carrier	*38.5*	*X*	*40 - 110*	*01/20/23 12:59*	*01/26/23 12:22*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.151	U	0.406	0.406	1.00	0.792	pCi/L	01/24/23 10:38	01/31/23 12:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.1*		*40 - 110*	*01/24/23 10:38*	*01/31/23 12:26*	*1*
Y Carrier	*84.9*		*40 - 110*	*01/24/23 10:38*	*01/31/23 12:26*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.213	U	0.670	0.671	3.00	1.17	pCi/L	01/20/23 13:08	01/30/23 17:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*85.6*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:22*	*1*
Y Carrier	*89.7*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:22*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.227	U	0.357	0.357	3.00	0.602	pCi/L	01/27/23 12:54	02/08/23 16:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*91.8*		*40 - 110*	*01/27/23 12:54*	*02/08/23 16:06*	*1*
Y Carrier	*83.4*		*40 - 110*	*01/27/23 12:54*	*02/08/23 16:06*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-92.8	U	139	140	500	270	pCi/L	01/31/23 12:11	02/01/23 23:24	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.408		0.329	0.329	1.00	0.349	pCi/L	01/24/23 12:57	02/13/23 13:51	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: LXBMP0011_20230114
Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.0259	U	0.202	0.202	1.00	0.397	pCi/L	01/24/23 12:57	02/13/23 13:51	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
160-48612-D-1-A DU	Duplicate	79.4
570-124260-1	LXBMP0011_20230114	74.0
LCS 160-597616/2-A	Lab Control Sample	96.3
LCS 160-598000/2-A	Lab Control Sample	94.3
LCSD 160-598000/3-A	Lab Control Sample Dup	96.3
MB 160-597616/1-A	Method Blank	85.4
MB 160-598000/1-A	Method Blank	90.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
570-124260-1	LXBMP0011_20230114	91.1

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
160-48612-D-1-B DU	Duplicate	79.4	50.1
570-124260-1	LXBMP0011_20230114	74.0	38.5 X
LCS 160-597622/2-A	Lab Control Sample	96.3	49.3
LCS 160-598012/2-A	Lab Control Sample	94.3	85.2
LCSD 160-598012/3-A	Lab Control Sample Dup	96.3	85.6
MB 160-597622/1-A	Method Blank	85.4	59.4
MB 160-598012/1-A	Method Blank	90.6	82.6

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124260-1	LXBMP0011_20230114	91.1	84.9

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124260-5
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124260-1	LXBMP0011_20230114	85.6	89.7
LCS 160-597624/2-A	Lab Control Sample	90.8	84.1
LCS 160-598546/2-A	Lab Control Sample	85.4	87.5
LCSD 160-597624/3-A	Lab Control Sample Dup	87.3	88.2
LCSD 160-598546/3-A	Lab Control Sample Dup	88.3	86.4
MB 160-597624/1-A	Method Blank	89.1	85.6
MB 160-598546/1-A	Method Blank	87.1	87.1

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124260-1	LXBMP0011_20230114	91.8	83.4

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-598078/2-A	Lab Control Sample	85.2
MB 160-598078/1-A	Method Blank	82.1

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-124263-K-2-D DU	Duplicate	73.4

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-598534/1-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598534

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.2749	U	0.539	0.540	3.00	1.11	pCi/L	01/27/23 10:37	02/13/23 16:16	1
Gross Beta	0.3954	U	0.533	0.534	4.00	0.888	pCi/L	01/27/23 10:37	02/13/23 16:16	1

Lab Sample ID: LCS 160-598534/2-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	47.97		7.10	3.00	2.38	pCi/L	95	75 - 125

Lab Sample ID: LCSB 160-598534/3-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	67.26		7.25	4.00	0.956	pCi/L	91	75 - 125

Lab Sample ID: 570-124230-R-1-H MS
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	2.61		50.5	33.45		5.21	3.00	1.74	pCi/L	61	60 - 140

Lab Sample ID: 570-124230-R-1-I MSBT
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	3.65		73.7	75.89		8.13	4.00	0.892	pCi/L	98	60 - 140

Lab Sample ID: 570-124230-R-1-J DU
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	2.61		1.519	U	1.20	3.00	1.80	pCi/L	0.37	1
Gross Beta	3.65		2.505		0.804	4.00	0.976	pCi/L	0.66	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597709/1-A
Matrix: Water
Analysis Batch: 600999

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597709

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.201	U	9.37	9.37	20.0	11.7	pCi/L	01/20/23 14:22	02/20/23 18:19	1
Potassium-40	-11.33	U	161	161		182	pCi/L	01/20/23 14:22	02/20/23 18:19	1

Lab Sample ID: LCS 160-597709/2-A
Matrix: Water
Analysis Batch: 601005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597709

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	137900		16400		298	pCi/L	102	75 - 125
Cesium-137	40900	42040		5010	20.0	72.3	pCi/L	103	75 - 125
Cobalt-60	18000	18800		2240		42.9	pCi/L	104	75 - 125

Lab Sample ID: 570-124252-U-1-F DU
Matrix: Water
Analysis Batch: 600999

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597709

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	0.848	U	-2.934	U	8.67	20.0	10.7	pCi/L	0.26	1
Potassium-40	59.2	U	133.7		94.8		91.6	pCi/L	0.49	1

Lab Sample ID: MB 160-597949/1-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597949

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.297	U	6.65	6.65	20.0	8.59	pCi/L	01/23/23 15:17	02/08/23 14:01	1
Potassium-40	43.04	U	107	107		122	pCi/L	01/23/23 15:17	02/08/23 14:01	1

Lab Sample ID: LCS 160-597949/2-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597949

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	147900		17600		344	pCi/L	109	75 - 125
Cesium-137	41000	39930		4760	20.0	101	pCi/L	97	75 - 125
Cobalt-60	18100	17850		2130		66.0	pCi/L	99	75 - 125

Lab Sample ID: 570-123901-U-2-F DU
Matrix: Water
Analysis Batch: 599622

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 597949

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	1.70	U	3.380	U	6.27	20.0	7.58	pCi/L	0.14	1
Potassium-40	82.3		-45.72	U	90.3		128	pCi/L	0.80	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-597616/1-A
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597616

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02734	U	0.0585	0.0585	1.00	0.106	pCi/L	01/20/23 12:30	02/13/23 15:23	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.4*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:23*	*1*

Lab Sample ID: LCS 160-597616/2-A
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597616

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.92		1.11	1.00	0.0938	pCi/L	96	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.3*		*40 - 110*

Lab Sample ID: 160-48612-D-1-A DU
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597616

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.0133	U		0.07048	U	0.0846	1.00	0.138	pCi/L			0.33	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*79.4*		*40 - 110*

Lab Sample ID: MB 160-598000/1-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598000

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02089	U	0.0448	0.0448	1.00	0.0825	pCi/L	01/24/23 10:22	02/15/23 10:07	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*01/24/23 10:22*	*02/15/23 10:07*	*1*

Lab Sample ID: LCS 160-598000/2-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598000

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.66		1.09	1.00	0.0723	pCi/L	94	75 - 125		

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-598000/2-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598000

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	94.3		40 - 110

Lab Sample ID: LCSD 160-598000/3-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598000

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.99		1.12	1.00	0.116	pCi/L	97	75 - 125	0.15	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	96.3		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-597622/1-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597622

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1588	U	0.399	0.399	1.00	0.686	pCi/L	01/20/23 12:59	01/26/23 12:13	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.4		40 - 110	01/20/23 12:59	01/26/23 12:13	1
Y Carrier	59.4		40 - 110	01/20/23 12:59	01/26/23 12:13	1

Lab Sample ID: LCS 160-597622/2-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597622

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.24	10.41		1.36	1.00	0.674	pCi/L	126	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	96.3		40 - 110
Y Carrier	49.3		40 - 110

Lab Sample ID: 160-48612-D-1-B DU
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597622

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.549	U G		0.3935	U	0.527	1.00	0.877	pCi/L			0.13	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: 160-48612-D-1-B DU
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597622

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	79.4		40 - 110
Y Carrier	50.1		40 - 110

Lab Sample ID: MB 160-598012/1-A
Matrix: Water
Analysis Batch: 598848

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598012

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2147	U	0.309	0.310	1.00	0.521	pCi/L	01/24/23 10:38	01/31/23 11:46	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110	01/24/23 10:38	01/31/23 11:46	1
Y Carrier	82.6		40 - 110	01/24/23 10:38	01/31/23 11:46	1

Lab Sample ID: LCS 160-598012/2-A
Matrix: Water
Analysis Batch: 598848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598012

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.23	8.192		1.13	1.00	0.455	pCi/L	100	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	94.3		40 - 110
Y Carrier	85.2		40 - 110

Lab Sample ID: LCSD 160-598012/3-A
Matrix: Water
Analysis Batch: 598848

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598012

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.23	7.773		1.08	1.00	0.444	pCi/L	94	75 - 125	0.19	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	96.3		40 - 110
Y Carrier	85.6		40 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-597624/1-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597624

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1919	U	0.177	0.177	3.00	0.284	pCi/L	01/20/23 13:08	01/30/23 17:13	1

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	89.1		40 - 110	01/20/23 13:08	01/30/23 17:13	1
Y Carrier	85.6		40 - 110	01/20/23 13:08	01/30/23 17:13	1

Lab Sample ID: LCS 160-597624/2-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597624

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	7.782		0.841	3.00	0.259	pCi/L	106	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	90.8		40 - 110
Y Carrier	84.1		40 - 110

Lab Sample ID: LCSD 160-597624/3-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597624

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	7.236		0.795	3.00	0.281	pCi/L	98	75 - 125	0.33	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	87.3		40 - 110
Y Carrier	88.2		40 - 110

Lab Sample ID: MB 160-598546/1-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598546

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1970	U	0.181	0.182	3.00	0.291	pCi/L	01/27/23 12:54	02/08/23 15:57	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	87.1		40 - 110	01/27/23 12:54	02/08/23 15:57	1
Y Carrier	87.1		40 - 110	01/27/23 12:54	02/08/23 15:57	1

Lab Sample ID: LCS 160-598546/2-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598546

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	7.382		0.816	3.00	0.271	pCi/L	100	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	85.4		40 - 110
Y Carrier	87.5		40 - 110

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCSD 160-598546/3-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598546

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	7.433		0.819	3.00	0.316	pCi/L	101	75 - 125	0.03	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*88.3*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-598717/1-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598717

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-27.93	U	147	147	500	270	pCi/L	01/31/23 12:11	02/01/23 21:31	1

Lab Sample ID: LCS 160-598717/2-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598717

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2110	1839		333	500	270	pCi/L	87	75 - 125		

Lab Sample ID: 570-124868-Q-1-B MS
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	123	U	2160	2177		373	500	286	pCi/L	95	60 - 140		

Lab Sample ID: 570-124392-Q-1-B DU
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	0.901	U		2.703	U	159	500	289	pCi/L			0.01	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-598078/1-A
Matrix: Water
Analysis Batch: 600266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598078

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1667		0.1389	0.1391	1.00	0.146	pCi/L	01/24/23 12:57	02/13/23 13:42	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: MB 160-598078/1-A
Matrix: Water
Analysis Batch: 600266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598078

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.1667		0.1389	0.1391	1.00	0.146	pCi/L	01/24/23 12:57	02/13/23 13:42	1

Lab Sample ID: LCS 160-598078/2-A
Matrix: Water
Analysis Batch: 600267

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598078

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.05		1.53	1.00	0.100	pCi/L	102	75 - 125		
Uranium-238			13.0	13.26		1.55	1.00	0.114	pCi/L	102	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*85.2*		*30 - 110*

Lab Sample ID: 570-124263-K-2-D DU
Matrix: Water
Analysis Batch: 600236

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 598078

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.0601	U		0.2092	U	0.206	1.00	0.250	pCi/L			0.35	1
Total Uranium	0.0601	U		0.2092	U	0.206	1.00	0.250	pCi/L			0.35	1

Rad

Filtration Batch: 597489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-U-2-F DU	Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 597606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	Filtration	
570-124263-K-2-D DU	Duplicate	Dissolved	Water	Filtration	

Prep Batch: 597616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	PrecSep-21	
MB 160-597616/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597616/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-48612-D-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 597622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	PrecSep_0	
MB 160-597622/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597622/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-48612-D-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 597624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	PrecSep-7	
MB 160-597624/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-597624/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597624/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	Fill_Geo-0	
MB 160-597709/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597709/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-124252-U-1-F DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	Fill_Geo-0	597606
MB 160-597949/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597949/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123901-U-2-F DU	Duplicate	Dissolved	Water	Fill_Geo-0	597489

Prep Batch: 598000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	PrecSep-21	597606
MB 160-598000/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-598000/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-598000/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Rad

Prep Batch: 598012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	PrecSep_0	597606
MB 160-598012/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-598012/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-598012/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 598078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	ExtChrom	597606
570-124260-1	LXBMP0011_20230114	Total/NA	Water	ExtChrom	
MB 160-598078/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-598078/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-124263-K-2-D DU	Duplicate	Dissolved	Water	ExtChrom	597606

Prep Batch: 598534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	Evaporation	597606
570-124260-1	LXBMP0011_20230114	Total/NA	Water	Evaporation	
MB 160-598534/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598534/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598534/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-124230-R-1-H MS	Matrix Spike	Total/NA	Water	Evaporation	
570-124230-R-1-I MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-124230-R-1-J DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 598546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Dissolved	Water	PrecSep-7	597606
MB 160-598546/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-598546/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-598546/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 598717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124260-1	LXBMP0011_20230114	Total/NA	Water	LSC_Dist_Susp	
MB 160-598717/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-598717/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-124868-Q-1-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-124392-Q-1-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Client Sample ID: LXBMP0011_20230114

Date Collected: 01/14/23 10:30
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124260-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Evaporation			200.00 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Dissolved	Analysis	900.0		1	1.0 mL	1.0 mL	600138	02/13/23 18:37	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Total/NA	Analysis	900.0		1			600161	02/13/23 16:14	FLC	EET SL
	Instrument ID: GFPCORANGE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597949	01/23/23 15:17	JML	EET SL
Dissolved	Analysis	901.1		1			599622	02/08/23 12:01	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597709	01/20/23 14:22	JML	EET SL
Total/NA	Analysis	901.1		1			601098	02/21/23 03:08	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep-21			753.60 mL	1.0 g	598000	01/24/23 10:22	DJP	EET SL
Dissolved	Analysis	903.0		1			600464	02/15/23 10:13	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			498.90 mL	1.0 g	597616	01/20/23 12:30	DJP	EET SL
Total/NA	Analysis	903.0		1			600139	02/13/23 15:30	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep_0			753.60 mL	1.0 g	598012	01/24/23 10:38	DJP	EET SL
Dissolved	Analysis	904.0		1			598849	01/31/23 12:26	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			498.90 mL	1.0 g	597622	01/20/23 12:59	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	598283	01/26/23 12:22	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep-7			507.34 mL	1.0 g	598546	01/27/23 12:54	DJP	EET SL
Dissolved	Analysis	905		1			599762	02/08/23 16:06	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep-7			245.92 mL	1.0 g	597624	01/20/23 13:08	DJP	EET SL
Total/NA	Analysis	905		1			598613	01/30/23 17:22	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			102.44 mL	1.0 g	598717	01/31/23 12:11	SEH	EET SL
Total/NA	Analysis	906.0		1			599486	02/01/23 23:24	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	ExtChrom			304.72 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Dissolved	Analysis	A-01-R		1			600226	02/13/23 13:51	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			251.93 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Total/NA	Analysis	A-01-R		1			600225	02/13/23 13:51	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124260-5
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124260-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124260-1	LXBMP0011_20230114	Water	01/14/23 10:30	01/17/23 18:25

124260

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica services under our laboratory performed in accordance with QAPP in Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1.17.2023	COC No
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 896-6494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0) K-40 CS-137 (E901.0 or E901.1) Total Combined Radium 226 & 228, Sr-90 (E903.0/E903 E904, E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Trifium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag Al, As, Ba Be Cd, Cr Cu, Fe Mn, Ni Pb Se Sb Tl; Method 200.7 B Zn (Total Dissolved)	Method 200.8 Ag Al, As, Ba, Be Cd, Cr Cu, Fe Mn, Ni, Pb Se Sb Tl; Method 200.7 B Zn (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Amber	1-250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fi TSS to the top For metals, Lab may substitute 250mL Poly for 500mL -- only need to fil half of 500mL. Bottles that are sized up based on inventory availability only need to be partially fi led to meet the volume requirement as stated here
~~BGBMP0003_~~			~~G~~	~~WM~~	~~21~~	~~Y~~	~~N~~	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
LXBMP0011_20230114	01/14/23	1030	G	WM	21	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 6=NaOH; 6= Other								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6	

570-124260 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ___6___ Months

Special Instructions/QC Requirements & Comments. ECI #44009816
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No | Cooler Temp. (°C): Obs'd._____ Corr'd:_____ Therm ID No._____

Relinquished by	Company	Date/Time	Received by	Date/Time
	JHA	01/17/23 1245	EC	1/17/23 1245
	EC	1/17/23 1825		1/17/23 1825
Relinquished by	Company	Date/Time	Received in Laboratory by	Date/Time

2.4/2.4 13/1.7 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

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2/23/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s)	COC No.: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124260-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days)			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
LXBMP0011_20230114 (570-124260-1)	1/14/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/23/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204494.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-124260-5
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/21/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
LXBMP0011_20230114 (570-124260-1)	1/14/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	01/18/23 12:48	EC	FEDEX		
Relinquished by: FEDEX	Date/Time:	Company	Received by: Briana Sharkey-Gonzalez	Date/Time: 1/19/23 9:00	Company ETAS TL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124260-5

Login Number: 124260
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124260-5

Login Number: 124260
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/19/23 11:16 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124262-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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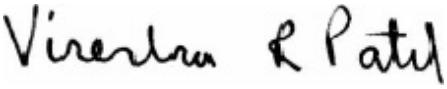
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired

Metals

Qualifier	Qualifier Description
BB	Sample > 4X spike concentration
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124262-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124262-1

Comments
No additional comments.

Receipt
The sample was received on 1/17/2023 6:25 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9º C.

Receipt Exceptions

The following sample was received outside of holding time for NO3,NO2 & Cr VI: BGBMP00003_20230114 (570-124262-1).

GC/MS VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following sample was received and analyzed outside of holding time: BGBMP00003_20230114 (570-124262-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Client Sample ID: BGBMP0003_20230114

Lab Sample ID: 570-124262-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.40	BU BV	0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	2.4		1.0	0.24	mg/L	1		300.0	Total/NA
Boron	47	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	47	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.48	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	16		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	0.50	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	2.0		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	110	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	3.3		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	2.1		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	0.23	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Aluminum	90		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	0.39	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	14	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.35	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	1.7	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	57	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	1.3	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.7	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Aluminum	62	BU	15	8.6	ug/L	1		200.8	Dissolved
Total Suspended Solids	2.2		1.0	0.83	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		2.0	0.82	ug/L			01/18/23 13:53	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*60 - 140*		*01/18/23 13:53*	*2*
4-Bromofluorobenzene (Surr)	*93*		*60 - 140*		*01/18/23 13:53*	*2*
Dibromofluoromethane	*93*		*60 - 140*		*01/18/23 13:53*	*2*
Toluene-d8 (Surr)	*101*		*60 - 140*		*01/18/23 13:53*	*2*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.1	3.7	ug/L		01/19/23 05:37	01/30/23 17:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*88*		*28 - 127*	*01/19/23 05:37*	*01/30/23 17:08*	*1*
2-Fluorobiphenyl (Surr)	*67*		*31 - 120*	*01/19/23 05:37*	*01/30/23 17:08*	*1*
2-Fluorophenol (Surr)	*54*		*17 - 120*	*01/19/23 05:37*	*01/30/23 17:08*	*1*
Nitrobenzene-d5 (Surr)	*78*		*27 - 120*	*01/19/23 05:37*	*01/30/23 17:08*	*1*
Phenol-d6 (Surr)	*40*		*10 - 120*	*01/19/23 05:37*	*01/30/23 17:08*	*1*
p-Terphenyl-d14 (Surr)	*81*		*45 - 120*	*01/19/23 05:37*	*01/30/23 17:08*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			01/18/23 04:16	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			01/18/23 08:16	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			01/18/23 08:11	1
Nitrite as N	ND	BU BV	0.10	0.043	mg/L			01/18/23 08:11	1
Nitrate as N	**0.40**	**BU BV**	0.10	0.020	mg/L			01/18/23 08:11	1
Sulfate	**2.4**		1.0	0.24	mg/L			01/18/23 08:11	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/21/23 11:30	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	47	J,DX	500	3.5	ug/L		01/20/23 06:08	01/20/23 16:28	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	47	J,DX BU	500	3.5	ug/L			01/20/23 02:41	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/20/23 06:26	01/20/23 10:16	1
Arsenic	**0.48**	**J,DX**	1.0	0.16	ug/L		01/20/23 06:26	01/20/23 10:16	1
Barium	**16**		1.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:16	1
Beryllium	ND		0.50	0.26	ug/L		01/20/23 06:26	01/20/23 10:16	1
Cadmium	ND		1.0	0.13	ug/L		01/20/23 06:26	01/20/23 10:16	1
Chromium	**0.50**	**J,DX**	2.0	0.14	ug/L		01/20/23 06:26	01/20/23 10:16	1
Copper	**2.0**		2.0	0.32	ug/L		01/20/23 06:26	01/20/23 10:16	1
Iron	**110**	**MB**	20	3.7	ug/L		01/20/23 06:26	01/20/23 10:16	1
Manganese	**3.3**		1.0	0.41	ug/L		01/20/23 06:26	01/20/23 10:16	1
Nickel	**2.1**		2.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:16	1
Lead	**0.23**	**J,DX**	1.0	0.12	ug/L		01/20/23 06:26	01/20/23 10:16	1
Antimony	ND		2.0	0.36	ug/L		01/20/23 06:26	01/20/23 10:16	1
Selenium	ND		2.0	0.52	ug/L		01/20/23 06:26	01/20/23 10:16	1
Thallium	ND		1.0	0.11	ug/L		01/20/23 06:26	01/20/23 10:16	1
Zinc	ND		20	2.8	ug/L		01/20/23 06:26	01/20/23 10:16	1
Aluminum	**90**		15	8.6	ug/L		01/20/23 06:26	01/20/23 10:16	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			01/19/23 10:48	1
Arsenic	**0.39**	**J,DX BU**	1.0	0.16	ug/L			01/19/23 10:48	1
Barium	**14**	**BU**	1.0	0.17	ug/L			01/19/23 10:48	1
Beryllium	ND	BU	0.50	0.26	ug/L			01/19/23 10:48	1
Cadmium	ND	BU	1.0	0.13	ug/L			01/19/23 10:48	1
Chromium	**0.35**	**J,DX BU**	2.0	0.14	ug/L			01/19/23 10:48	1
Copper	**1.7**	**J,DX BU**	2.0	0.32	ug/L			01/19/23 10:48	1
Iron	**57**	**BU**	20	3.7	ug/L			01/19/23 10:48	1
Manganese	**1.3**	**BU**	1.0	0.41	ug/L			01/19/23 10:48	1
Nickel	**1.7**	**J,DX BU**	2.0	0.17	ug/L			01/19/23 10:48	1
Lead	ND	BU	1.0	0.12	ug/L			01/19/23 10:48	1
Antimony	ND	BU	2.0	0.36	ug/L			01/19/23 10:48	1
Selenium	ND	BU	2.0	0.52	ug/L			01/19/23 10:48	1
Thallium	ND	BU	1.0	0.11	ug/L			01/19/23 10:48	1
Zinc	ND	BU	20	2.8	ug/L			01/19/23 10:48	1
Aluminum	**62**	**BU**	15	8.6	ug/L			01/19/23 10:48	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

General Chemistry

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			01/24/23 15:25	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			01/23/23 14:11	1
Total Suspended Solids (SM 2540D)	**2.2**		1.0	0.83	mg/L			01/19/23 14:49	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-124262-1	BGBMP0003_20230114	86	93	93	101
LCS 570-296662/4	Lab Control Sample	87	97	92	98
LCSD 570-296662/5	Lab Control Sample Dup	86	97	92	100
MB 570-296662/10	Method Blank	84	93	92	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-124262-1	BGBMP0003_20230114	88	67	54	78	40	81
LCS 570-296958/2-A	Lab Control Sample	115	91	65	87	46	104
LCSD 570-296958/3-A	Lab Control Sample Dup	114	81	61	81	42	103
MB 570-296958/1-A	Method Blank	82	58	42	62	31	77

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-296662/10
Matrix: Water
Analysis Batch: 296662

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			01/18/23 11:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*60 - 140*		*01/18/23 11:24*	*1*
4-Bromofluorobenzene (Surr)	*93*		*60 - 140*		*01/18/23 11:24*	*1*
Dibromofluoromethane	*92*		*60 - 140*		*01/18/23 11:24*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*01/18/23 11:24*	*1*

Lab Sample ID: LCS 570-296662/4
Matrix: Water
Analysis Batch: 296662

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	19.0		ug/L		95	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*60 - 140*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*
Dibromofluoromethane	*92*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*

Lab Sample ID: LCSD 570-296662/5
Matrix: Water
Analysis Batch: 296662

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene			20.0	19.6		ug/L		98	65 - 135	3	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*60 - 140*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*
Dibromofluoromethane	*92*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-296958/1-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296958

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		01/19/23 05:37	01/30/23 15:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*82*		*28 - 127*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
2-Fluorobiphenyl (Surr)	*58*		*31 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*
2-Fluorophenol (Surr)	*42*		*17 - 120*	*01/19/23 05:37*	*01/30/23 15:24*	*1*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-296958/1-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 296958

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	62		27 - 120	01/19/23 05:37	01/30/23 15:24	1
Phenol-d6 (Surr)	31		10 - 120	01/19/23 05:37	01/30/23 15:24	1
p-Terphenyl-d14 (Surr)	77		45 - 120	01/19/23 05:37	01/30/23 15:24	1

Lab Sample ID: LCS 570-296958/2-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 296958

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bis(2-ethylhexyl) phthalate			20.0	24.1		ug/L		120	29 - 137		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	115		28 - 127
2-Fluorobiphenyl (Surr)	91		31 - 120
2-Fluorophenol (Surr)	65		17 - 120
Nitrobenzene-d5 (Surr)	87		27 - 120
Phenol-d6 (Surr)	46		10 - 120
p-Terphenyl-d14 (Surr)	104		45 - 120

Lab Sample ID: LCSD 570-296958/3-A
Matrix: Water
Analysis Batch: 299507

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 296958

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate			20.0	25.8		ug/L		129	29 - 137	7	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	114		28 - 127
2-Fluorobiphenyl (Surr)	81		31 - 120
2-Fluorophenol (Surr)	61		17 - 120
Nitrobenzene-d5 (Surr)	81		27 - 120
Phenol-d6 (Surr)	42		10 - 120
p-Terphenyl-d14 (Surr)	103		45 - 120

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-296556/31
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/18/23 02:05	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: LCS 570-296556/32
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	49.9		ug/L		100	95 - 107		

Lab Sample ID: LCSD 570-296556/33
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.1		ug/L		100	95 - 107	0	20

Lab Sample ID: 570-124390-G-7 MS
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	0.055	J,DX	50.1	51.6		ug/L		103	85 - 121		

Lab Sample ID: 570-124390-G-7 MSD
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.055	J,DX	50.1	51.2		ug/L		102	85 - 121	1	25

Lab Sample ID: MB 570-296615/1-A
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/18/23 06:52	1

Lab Sample ID: LCS 570-296615/2-A
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.6		ug/L		101	95 - 107		

Lab Sample ID: LCSD 570-296615/3-A
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.7		ug/L		101	95 - 107	0	20

Lab Sample ID: 570-124252-D-1-B MS
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	0.036	J,DX	50.1	51.4		ug/L		103	85 - 121		

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: 570-124252-D-1-C MSD
Matrix: Water
Analysis Batch: 296556

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.036	J,DX	50.1	51.4		ug/L		103	85 - 121	0	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-296623/5
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/18/23 05:14	1
Nitrate as N	ND		0.10	0.020	mg/L			01/18/23 05:14	1

Lab Sample ID: LCS 570-296623/6
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.69		mg/L		107	90 - 110
Nitrate as N	5.00	5.12		mg/L		102	90 - 110

Lab Sample ID: LCSD 570-296623/7
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.69		mg/L		108	90 - 110	0	15
Nitrate as N	5.00	5.10		mg/L		102	90 - 110	0	15

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	ND		2.50	2.72		mg/L		109	80 - 120

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	ND		2.50	2.70		mg/L		108	80 - 120	0	20

Lab Sample ID: MB 570-296624/5
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			01/18/23 05:14	1
Sulfate	ND		1.0	0.24	mg/L			01/18/23 05:14	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 570-296624/6
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride			2.50	2.74		mg/L		110	90 - 110		
Sulfate			50.0	50.7		mg/L		101	90 - 110		

Lab Sample ID: LCSD 570-296624/7
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride			2.50	2.76		mg/L		110	90 - 110	1	15
Sulfate			50.0	50.6		mg/L		101	90 - 110	0	15

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Fluoride	0.55		2.50	3.09		mg/L		101	80 - 120		

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.55		2.50	3.33		mg/L		111	80 - 120	8	20

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N - DL	6.5		5.00	11.3		mg/L		96	80 - 120		

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296623

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N - DL	6.5		5.00	11.3		mg/L		95	80 - 120	1	20

Lab Sample ID: 570-124482-J-1 MS
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate - DL	43		50.0	89.5		mg/L		94	80 - 120		

Method: 300.0 - Anions, Ion Chromatography - DL (Continued)

Lab Sample ID: 570-124482-J-1 MSD
Matrix: Water
Analysis Batch: 296624

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate - DL	43		50.0	90.0		mg/L		95	80 - 120	1	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-297492/7
Matrix: Water
Analysis Batch: 297492

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			01/21/23 10:27	1

Lab Sample ID: LCS 570-297492/8
Matrix: Water
Analysis Batch: 297492

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	23.5		ug/L		94	85 - 115

Lab Sample ID: LCSD 570-297492/9
Matrix: Water
Analysis Batch: 297492

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	22.0		ug/L		88	85 - 115	6	15

Lab Sample ID: 570-124262-1 MS
Matrix: Water
Analysis Batch: 297492

Client Sample ID: BGBMP0003_20230114
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	ND		50.0	52.0		ug/L		104	80 - 120

Lab Sample ID: 570-124262-1 MSD
Matrix: Water
Analysis Batch: 297492

Client Sample ID: BGBMP0003_20230114
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	ND		50.0	52.5		ug/L		105	80 - 120	1	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-297274/1-A
Matrix: Water
Analysis Batch: 297463

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 297274

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		01/20/23 06:08	01/20/23 12:50	1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 570-297274/2-A
Matrix: Water
Analysis Batch: 297463

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 297274

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	539		ug/L		108	85 - 115		

Lab Sample ID: LCSD 570-297274/3-A
Matrix: Water
Analysis Batch: 297463

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 297274

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	534		ug/L		107	85 - 115	1	20

Lab Sample ID: 570-124392-F-1-E MS
Matrix: Water
Analysis Batch: 297463

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 297274

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	81	J,DX	500	604		ug/L		105	80 - 120		

Lab Sample ID: 570-124392-F-1-F MSD
Matrix: Water
Analysis Batch: 297463

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 297274

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	81	J,DX	500	607		ug/L		105	80 - 120	1	20

Lab Sample ID: MB 570-296797/1-A
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			01/20/23 02:22	1

Lab Sample ID: LCS 570-296797/2-A
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	501		ug/L		100	85 - 115		

Lab Sample ID: LCSD 570-296797/3-A
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	502		ug/L		100	85 - 115	0	20

Lab Sample ID: 570-124392-C-3-B MS
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	76	J,DX	500	577		ug/L		100	80 - 120		

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: 570-124392-C-3-C MSD
Matrix: Water
Analysis Batch: 297291

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	76	J,DX	500	580		ug/L		101	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-297278/1-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/20/23 06:26	01/20/23 10:03	1
Arsenic	ND		1.0	0.16	ug/L		01/20/23 06:26	01/20/23 10:03	1
Barium	ND		1.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:03	1
Beryllium	ND		0.50	0.26	ug/L		01/20/23 06:26	01/20/23 10:03	1
Cadmium	ND		1.0	0.13	ug/L		01/20/23 06:26	01/20/23 10:03	1
Chromium	ND		2.0	0.14	ug/L		01/20/23 06:26	01/20/23 10:03	1
Copper	ND		2.0	0.32	ug/L		01/20/23 06:26	01/20/23 10:03	1
Iron	6.36	J,DX	20	3.7	ug/L		01/20/23 06:26	01/20/23 10:03	1
Manganese	ND		1.0	0.41	ug/L		01/20/23 06:26	01/20/23 10:03	1
Nickel	ND		2.0	0.17	ug/L		01/20/23 06:26	01/20/23 10:03	1
Lead	ND		1.0	0.12	ug/L		01/20/23 06:26	01/20/23 10:03	1
Antimony	ND		2.0	0.36	ug/L		01/20/23 06:26	01/20/23 10:03	1
Selenium	ND		2.0	0.52	ug/L		01/20/23 06:26	01/20/23 10:03	1
Thallium	ND		1.0	0.11	ug/L		01/20/23 06:26	01/20/23 10:03	1
Zinc	ND		20	2.8	ug/L		01/20/23 06:26	01/20/23 10:03	1
Aluminum	ND		15	8.6	ug/L		01/20/23 06:26	01/20/23 10:03	1

Lab Sample ID: LCS 570-297278/2-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	80.0	81.7		ug/L		102	85 - 115
Arsenic	80.0	81.9		ug/L		102	85 - 115
Barium	80.0	81.9		ug/L		102	85 - 115
Beryllium	80.0	82.8		ug/L		104	85 - 115
Cadmium	80.0	81.5		ug/L		102	85 - 115
Chromium	80.0	83.4		ug/L		104	85 - 115
Copper	80.0	84.2		ug/L		105	85 - 115
Iron	800	839		ug/L		105	85 - 115
Manganese	80.0	83.5		ug/L		104	85 - 115
Nickel	80.0	83.4		ug/L		104	85 - 115
Lead	80.0	80.5		ug/L		101	85 - 115
Antimony	80.0	85.7		ug/L		107	85 - 115
Selenium	80.0	82.1		ug/L		103	85 - 115
Thallium	80.0	80.3		ug/L		100	85 - 115
Zinc	80.0	82.3		ug/L		103	85 - 115
Aluminum	80.0	86.8		ug/L		108	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-297278/3-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver			80.0	81.0		ug/L		101	85 - 115	1	20
Arsenic			80.0	81.3		ug/L		102	85 - 115	1	20
Barium			80.0	80.4		ug/L		101	85 - 115	2	20
Beryllium			80.0	83.2		ug/L		104	85 - 115	0	20
Cadmium			80.0	81.5		ug/L		102	85 - 115	0	20
Chromium			80.0	82.2		ug/L		103	85 - 115	1	20
Copper			80.0	82.6		ug/L		103	85 - 115	2	20
Iron			800	826		ug/L		103	85 - 115	2	20
Manganese			80.0	82.4		ug/L		103	85 - 115	1	20
Nickel			80.0	82.9		ug/L		104	85 - 115	1	20
Lead			80.0	81.5		ug/L		102	85 - 115	1	20
Antimony			80.0	84.1		ug/L		105	85 - 115	2	20
Selenium			80.0	81.9		ug/L		102	85 - 115	0	20
Thallium			80.0	81.6		ug/L		102	85 - 115	2	20
Zinc			80.0	82.9		ug/L		104	85 - 115	1	20
Aluminum			80.0	86.0		ug/L		108	85 - 115	1	20

Lab Sample ID: 570-124392-F-1-H MS
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	ND		80.0	82.8		ug/L		103	80 - 120
Arsenic	1.8		80.0	82.5		ug/L		101	80 - 120
Barium	13		80.0	97.1		ug/L		105	80 - 120
Beryllium	ND		80.0	84.7		ug/L		106	80 - 120
Cadmium	ND		80.0	82.4		ug/L		103	80 - 120
Chromium	1.3	J,DX	80.0	85.3		ug/L		105	80 - 120
Copper	4.9		80.0	89.7		ug/L		106	80 - 120
Iron	780	MB	800	1650		ug/L		108	80 - 120
Manganese	19		80.0	103		ug/L		106	80 - 120
Nickel	2.2		80.0	86.0		ug/L		105	80 - 120
Lead	0.85	J,DX	80.0	81.9		ug/L		101	80 - 120
Antimony	0.52	J,DX	80.0	85.2		ug/L		106	80 - 120
Selenium	ND		80.0	79.3		ug/L		99	80 - 120
Thallium	ND		80.0	81.9		ug/L		102	80 - 120
Zinc	7.1	J,DX	80.0	90.3		ug/L		104	80 - 120
Aluminum	670		80.0	996	BB	ug/L		406	80 - 120

Lab Sample ID: 570-124392-F-1-I MSD
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	ND		80.0	81.8		ug/L		102	80 - 120	1	20
Arsenic	1.8		80.0	83.4		ug/L		102	80 - 120	1	20
Barium	13		80.0	94.7		ug/L		102	80 - 120	3	20
Beryllium	ND		80.0	80.1		ug/L		100	80 - 120	6	20
Cadmium	ND		80.0	81.5		ug/L		102	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124392-F-1-I MSD
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium	1.3	J,DX	80.0	83.4		ug/L		103	80 - 120	2	20
Copper	4.9		80.0	88.8		ug/L		105	80 - 120	1	20
Iron	780	MB	800	1710		ug/L		116	80 - 120	3	20
Manganese	19		80.0	102		ug/L		104	80 - 120	1	20
Nickel	2.2		80.0	84.7		ug/L		103	80 - 120	2	20
Lead	0.85	J,DX	80.0	81.4		ug/L		101	80 - 120	1	20
Antimony	0.52	J,DX	80.0	85.2		ug/L		106	80 - 120	0	20
Selenium	ND		80.0	79.9		ug/L		100	80 - 120	1	20
Thallium	ND		80.0	80.7		ug/L		101	80 - 120	2	20
Zinc	7.1	J,DX	80.0	89.6		ug/L		103	80 - 120	1	20
Aluminum	670		80.0	1050	BB	ug/L		475	80 - 120	5	20

Lab Sample ID: MB 570-296798/1-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L			01/19/23 10:31	1
Arsenic	ND		1.0	0.16	ug/L			01/19/23 10:31	1
Barium	ND		1.0	0.17	ug/L			01/19/23 10:31	1
Beryllium	ND		0.50	0.26	ug/L			01/19/23 10:31	1
Cadmium	ND		1.0	0.13	ug/L			01/19/23 10:31	1
Chromium	ND		2.0	0.14	ug/L			01/19/23 10:31	1
Copper	ND		2.0	0.32	ug/L			01/19/23 10:31	1
Iron	ND		20	3.7	ug/L			01/19/23 10:31	1
Manganese	ND		1.0	0.41	ug/L			01/19/23 10:31	1
Nickel	ND		2.0	0.17	ug/L			01/19/23 10:31	1
Lead	0.167	J,DX	1.0	0.12	ug/L			01/19/23 10:31	1
Antimony	ND		2.0	0.36	ug/L			01/19/23 10:31	1
Selenium	ND		2.0	0.52	ug/L			01/19/23 10:31	1
Thallium	ND		1.0	0.11	ug/L			01/19/23 10:31	1
Zinc	ND		20	2.8	ug/L			01/19/23 10:31	1
Aluminum	ND		15	8.6	ug/L			01/19/23 10:31	1

Lab Sample ID: LCS 570-296798/2-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	80.0	75.2		ug/L		94	85 - 115
Arsenic	80.0	74.4		ug/L		93	85 - 115
Barium	80.0	73.6		ug/L		92	85 - 115
Beryllium	80.0	71.9		ug/L		90	85 - 115
Cadmium	80.0	74.3		ug/L		93	85 - 115
Chromium	80.0	74.1		ug/L		93	85 - 115
Copper	80.0	74.4		ug/L		93	85 - 115
Iron	800	767		ug/L		96	85 - 115
Manganese	80.0	75.0		ug/L		94	85 - 115
Nickel	80.0	74.4		ug/L		93	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-296798/2-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	80.0	74.0		ug/L		93	85 - 115
Antimony	80.0	75.2		ug/L		94	85 - 115
Selenium	80.0	72.8		ug/L		91	85 - 115
Thallium	80.0	74.0		ug/L		92	85 - 115
Zinc	80.0	74.2		ug/L		93	85 - 115
Aluminum	80.0	76.6		ug/L		96	85 - 115

Lab Sample ID: LCSD 570-296798/3-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	80.0	74.3		ug/L		93	85 - 115	1	20
Arsenic	80.0	74.3		ug/L		93	85 - 115	0	20
Barium	80.0	74.8		ug/L		93	85 - 115	2	20
Beryllium	80.0	74.9		ug/L		94	85 - 115	4	20
Cadmium	80.0	74.2		ug/L		93	85 - 115	0	20
Chromium	80.0	74.1		ug/L		93	85 - 115	0	20
Copper	80.0	74.8		ug/L		93	85 - 115	0	20
Iron	800	772		ug/L		97	85 - 115	1	20
Manganese	80.0	75.5		ug/L		94	85 - 115	1	20
Nickel	80.0	75.0		ug/L		94	85 - 115	1	20
Lead	80.0	76.2		ug/L		95	85 - 115	3	20
Antimony	80.0	75.8		ug/L		95	85 - 115	1	20
Selenium	80.0	73.5		ug/L		92	85 - 115	1	20
Thallium	80.0	75.5		ug/L		94	85 - 115	2	20
Zinc	80.0	74.3		ug/L		93	85 - 115	0	20
Aluminum	80.0	74.4		ug/L		93	85 - 115	3	20

Lab Sample ID: 570-124392-C-3-E MS
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	ND		80.0	75.6		ug/L		94	80 - 120
Arsenic	1.3		80.0	77.1		ug/L		95	80 - 120
Barium	9.1		80.0	84.9		ug/L		95	80 - 120
Beryllium	ND		80.0	75.7		ug/L		95	80 - 120
Cadmium	ND		80.0	74.9		ug/L		94	80 - 120
Chromium	0.41	J,DX	80.0	75.7		ug/L		94	80 - 120
Copper	4.8		80.0	79.6		ug/L		93	80 - 120
Iron	110		800	851		ug/L		93	80 - 120
Manganese	5.1		80.0	81.8		ug/L		96	80 - 120
Nickel	1.5	J,DX	80.0	76.8		ug/L		94	80 - 120
Lead	0.22	J,DX MB	80.0	74.4		ug/L		93	80 - 120
Antimony	0.55	J,DX	80.0	77.7		ug/L		96	80 - 120
Selenium	ND		80.0	75.3		ug/L		94	80 - 120
Thallium	ND		80.0	73.4		ug/L		92	80 - 120
Zinc	3.9	J,DX	80.0	76.7		ug/L		91	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124392-C-3-E MS
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	140		80.0	217		ug/L		97	80 - 120

Lab Sample ID: 570-124392-C-3-F MSD
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	ND		80.0	74.6		ug/L		93	80 - 120	1	20
Arsenic	1.3		80.0	76.6		ug/L		94	80 - 120	1	20
Barium	9.1		80.0	84.1		ug/L		94	80 - 120	1	20
Beryllium	ND		80.0	73.1		ug/L		91	80 - 120	3	20
Cadmium	ND		80.0	74.0		ug/L		92	80 - 120	1	20
Chromium	0.41	J,DX	80.0	74.4		ug/L		93	80 - 120	2	20
Copper	4.8		80.0	78.9		ug/L		93	80 - 120	1	20
Iron	110		800	848		ug/L		93	80 - 120	0	20
Manganese	5.1		80.0	79.4		ug/L		93	80 - 120	3	20
Nickel	1.5	J,DX	80.0	76.3		ug/L		94	80 - 120	1	20
Lead	0.22	J,DX MB	80.0	74.4		ug/L		93	80 - 120	0	20
Antimony	0.55	J,DX	80.0	76.8		ug/L		95	80 - 120	1	20
Selenium	ND		80.0	76.4		ug/L		95	80 - 120	1	20
Thallium	ND		80.0	74.3		ug/L		93	80 - 120	1	20
Zinc	3.9	J,DX	80.0	77.1		ug/L		91	80 - 120	1	20
Aluminum	140		80.0	212		ug/L		91	80 - 120	2	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-297946/11
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			01/23/23 13:11	1

Lab Sample ID: LCS 570-297946/14
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	267		ug/L		107	90 - 110

Lab Sample ID: LCSD 570-297946/13
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	248		ug/L		99	90 - 110	7	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: MRL 570-297946/10
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			5.00	4.66	J,DX	ug/L		93	50 - 150		

Lab Sample ID: 570-124243-S-1 MS
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total	ND		250	216		ug/L		86	70 - 130		

Lab Sample ID: 570-124243-S-1 MSD
Matrix: Water
Analysis Batch: 297946

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	ND		250	227		ug/L		91	70 - 130	5	30

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-297140/1
Matrix: Water
Analysis Batch: 297140

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/19/23 14:49	1

Lab Sample ID: LCS 570-297140/2
Matrix: Water
Analysis Batch: 297140

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	91.0		mg/L		91	77 - 116		

Lab Sample ID: LCSD 570-297140/3
Matrix: Water
Analysis Batch: 297140

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	88.0		mg/L		88	77 - 116	3	10

Lab Sample ID: 570-124511-F-2 DU
Matrix: Water
Analysis Batch: 297140

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	43			47.8		mg/L				10	10

GC/MS VOA

Analysis Batch: 296662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	624.1	
MB 570-296662/10	Method Blank	Total/NA	Water	624.1	
LCS 570-296662/4	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-296662/5	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 296958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	625	
MB 570-296958/1-A	Method Blank	Total/NA	Water	625	
LCS 570-296958/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-296958/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 299507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	625.1 SIM	296958
MB 570-296958/1-A	Method Blank	Total/NA	Water	625.1 SIM	296958
LCS 570-296958/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	296958
LCSD 570-296958/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	296958

HPLC/IC

Analysis Batch: 296556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	218.6	296615
570-124262-1	BGBMP0003_20230114	Total/NA	Water	218.6	
MB 570-296556/31	Method Blank	Total/NA	Water	218.6	
MB 570-296615/1-A	Method Blank	Dissolved	Water	218.6	296615
LCS 570-296556/32	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-296615/2-A	Lab Control Sample	Dissolved	Water	218.6	296615
LCSD 570-296556/33	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-296615/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	296615
570-124252-D-1-B MS	Matrix Spike	Dissolved	Water	218.6	296615
570-124252-D-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	218.6	296615
570-124390-G-7 MS	Matrix Spike	Total/NA	Water	218.6	
570-124390-G-7 MSD	Matrix Spike Duplicate	Total/NA	Water	218.6	

Filtration Batch: 296615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	Filtration	
MB 570-296615/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296615/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296615/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124252-D-1-B MS	Matrix Spike	Dissolved	Water	Filtration	
570-124252-D-1-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 296623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	300.0	
MB 570-296623/5	Method Blank	Total/NA	Water	300.0	
LCS 570-296623/6	Lab Control Sample	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 296623 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-296623/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124482-J-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MS - DL	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
570-124482-J-1 MSD - DL	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 296624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	300.0	
MB 570-296624/5	Method Blank	Total/NA	Water	300.0	
LCS 570-296624/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-296624/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124482-J-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MS - DL	Matrix Spike	Total/NA	Water	300.0	
570-124482-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
570-124482-J-1 MSD - DL	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 297492

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	314.0	
MB 570-297492/7	Method Blank	Total/NA	Water	314.0	
LCS 570-297492/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-297492/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-124262-1 MS	BGBMP0003_20230114	Total/NA	Water	314.0	
570-124262-1 MSD	BGBMP0003_20230114	Total/NA	Water	314.0	

Metals

Filtration Batch: 296797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	Filtration	
MB 570-296797/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296797/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296797/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124392-C-3-B MS	Matrix Spike	Dissolved	Water	Filtration	
570-124392-C-3-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 296798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	Filtration	
MB 570-296798/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124392-C-3-E MS	Matrix Spike	Dissolved	Water	Filtration	
570-124392-C-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 297048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	200.8	296798
MB 570-296798/1-A	Method Blank	Dissolved	Water	200.8	296798
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	200.8	296798

Metals (Continued)

Analysis Batch: 297048 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	296798
570-124392-C-3-E MS	Matrix Spike	Dissolved	Water	200.8	296798
570-124392-C-3-F MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	296798

Prep Batch: 297274

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total Recoverable	Water	200.7	
MB 570-297274/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-297274/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-297274/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-124392-F-1-E MS	Matrix Spike	Total Recoverable	Water	200.7	
570-124392-F-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Prep Batch: 297278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total Recoverable	Water	200.8	
MB 570-297278/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-297278/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-297278/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-124392-F-1-H MS	Matrix Spike	Total Recoverable	Water	200.8	
570-124392-F-1-I MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Analysis Batch: 297291

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	200.7 Rev 4.4	296797
MB 570-296797/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	296797
LCS 570-296797/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	296797
LCSD 570-296797/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	296797
570-124392-C-3-B MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	296797
570-124392-C-3-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	296797

Analysis Batch: 297371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total Recoverable	Water	200.8	297278
MB 570-297278/1-A	Method Blank	Total Recoverable	Water	200.8	297278
LCS 570-297278/2-A	Lab Control Sample	Total Recoverable	Water	200.8	297278
LCSD 570-297278/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	297278
570-124392-F-1-H MS	Matrix Spike	Total Recoverable	Water	200.8	297278
570-124392-F-1-I MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	297278

Analysis Batch: 297463

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total Recoverable	Water	200.7 Rev 4.4	297274
MB 570-297274/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	297274
LCS 570-297274/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	297274
LCSD 570-297274/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	297274
570-124392-F-1-E MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	297274
570-124392-F-1-F MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	297274

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

General Chemistry

Analysis Batch: 297140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	SM 2540D	
MB 570-297140/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-297140/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-297140/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-124511-F-2 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 297946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	Kelada 01	
MB 570-297946/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-297946/14	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-297946/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-297946/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-124243-S-1 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-124243-S-1 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 298235

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	218.6 CR3	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Client Sample ID: BGBMP0003_20230114

Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		2	5 mL	5 mL	296662	01/18/23 13:53	OH1	EET CAL 4
	Instrument ID: GCMSW									
Total/NA	Prep	625			982.8 mL	2 mL	296958	01/19/23 05:37	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	299507	01/30/23 17:08	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Dissolved	Filtration	Filtration			100 mL	100 mL	296615	01/18/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	296556	01/18/23 08:16	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	296556	01/18/23 04:16	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296623	01/18/23 08:11	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		1	4 mL	4 mL	296624	01/18/23 08:11	UIP1	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	297492	01/21/23 11:30	YO8L	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	296797	01/18/23 13:25	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			297291	01/20/23 02:41	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	297274	01/20/23 06:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			297463	01/20/23 16:28	VZ0K	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	296798	01/18/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			297048	01/19/23 10:48	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	297278	01/20/23 06:26	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297371	01/20/23 10:16	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	218.6 CR3		1			298235	01/24/23 15:25	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	297946	01/23/23 14:11	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	297140	01/19/23 14:49	BDH9	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124262-1	BGBMP0003_20230114	Water	01/15/23 08:00	01/17/23 18:25

124262

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program | | DW | | NPDES | | RCRA ☐ Other

TestAmerica service unit COC to be performed in accordance with the MSA Exhibit B Blanket Service Agreement 2019-TestAmerica by and between Haley & Aldrich and its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-17-23	COC No:
Haley & Aldrich Inc.	Tel/Fax: (620) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1), Total Combined Radium 226 & 228 Sr-90 (E903.0/E903, E904, E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0) K-40 CS-137 (E901.0 or E901.1)' Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314 0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr Cu, Fe Mn, Ni, Pb Se Sb Tl; Method 200.7, B Zn (Total Dissolved)	Method 200.8 Ag, Al, As, Ba Be, Cd, Cr Cu Fe Mn, Ni, Pb Se Sb, Tl; Method 200.7, B, Zn (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury, dissolved (E1631)	Trichloroethene (E624 1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1 250mL Poly	1 250mL Amber	1-250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here
BGBMP0003_20230114	01/15/23	0800	G	WM	2	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6		

570-124262 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
| | Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: SHA	Date/Time: 01/17/23/1245	Received by: EC	Date/Time: 1/17/23 1245
Relinquished by:	Company: EC	Date/Time: 1/17/23/1825	Received by:	Date/Time: 1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.9|1.9 sc11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2/6/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124262-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N None
O AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP00003_20230114 (570-124262-1)	1/15/23	08 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/18/23 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/6/2023

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals BMP Performance

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the BMP Performance program starting from data collected October 1st, 2022.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124262-1

Login Number: 124262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/13/2023 3:34:08 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124262-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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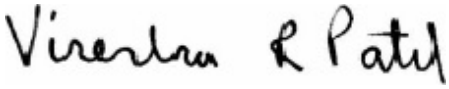
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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2/13/2023 3:34:08 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124262-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124262-2

Receipt
The sample was received on 1/17/2023 6:25 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.9°C

Receipt Exceptions
The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6. The samples were adjusted to the appropriate pH in the laboratory.

Job#: 570-124260 -1
Job#: 570-124252 -1.2.3
Job#: 570-124263 -1,2
Job#: 570-124262 -1

The following sample was received outside of holding time for NO3,NO2 & Cr VI: BGBMP0003_20230114 (570-124262-1).

Dioxin
Method 1613B: Elevated reporting limits are provided for the following samples due to insufficient sample provided for preparation: BGBMP0003_20230114 (570-124262-1).Nominal volume required by method is 1L.preparation batch 320-651189 Method: 1613B_Sox_Sep_PMatrix: Water

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: BGBMP0003_20230114 (570-124262-1), (CCV 320-651969/2) and (MB 320-651189/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-2

Client Sample ID: BGBMP0003_20230114 — Lab Sample ID: 570-124262-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.00000027	J,DX MB	0.000053	0.00000011	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000021	J,DX MB	0.000053	0.00000017	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000028	J,DX	0.000053	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000037	J,DX MB	0.000053	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000042	J,DX MB	0.000053	0.0000000091	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000044	J,DX q MB	0.000053	0.0000000077	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000027	J,DX MB	0.000053	0.0000000070	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000017	J,DX MB	0.000053	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00000067	J,DX q MB	0.000053	0.00000018	ug/L	1		1613B	Total/NA
OCDD	0.0000083	J,DX MB	0.00011	0.00000027	ug/L	1		1613B	Total/NA
OCDF	0.0000017	J,DX MB	0.00011	0.00000021	ug/L	1		1613B	Total/NA
Total TCDD	0.00000079	J,DX q MB	0.000011	0.00000031	ug/L	1		1613B	Total/NA
Total TCDF	0.0000010	J,DX q MB	0.000011	0.00000010	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000044	J,DX q MB	0.000053	0.00000020	ug/L	1		1613B	Total/NA
Total PeCDF	0.00000051	J,DX q MB	0.000053	0.00000011	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000039	J,DX q MB	0.000053	0.00000015	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000011	J,DX q MB	0.000053	0.0000000070	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000032	J,DX MB	0.000053	0.00000014	ug/L	1		1613B	Total/NA
Total HpCDF	0.00000067	J,DX q MB	0.000053	0.00000018	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.00000031	ug/L		02/02/23 06:24	02/05/23 21:46	1
1,2,3,7,8-PeCDD	ND		0.000053	0.00000020	ug/L		02/02/23 06:24	02/05/23 21:46	1
1,2,3,7,8-PeCDF	**0.00000027**	**J,DX MB**	0.000053	0.00000011	ug/L		02/02/23 06:24	02/05/23 21:46	1
2,3,4,7,8-PeCDF	ND		0.000053	0.00000014	ug/L		02/02/23 06:24	02/05/23 21:46	1
1,2,3,4,7,8-HxCDD	**0.0000021**	**J,DX MB**	0.000053	0.00000017	ug/L		02/02/23 06:24	02/05/23 21:46	1
1,2,3,6,7,8-HxCDD	**0.00000028**	**J,DX**	0.000053	0.00000016	ug/L		02/02/23 06:24	02/05/23 21:46	1
1,2,3,7,8,9-HxCDD	**0.00000037**	**J,DX MB**	0.000053	0.00000015	ug/L		02/02/23 06:24	02/05/23 21:46	1
1,2,3,4,7,8-HxCDF	**0.00000042**	**J,DX MB**	0.000053	0.00000091	ug/L		02/02/23 06:24	02/05/23 21:46	1
1,2,3,6,7,8-HxCDF	ND		0.000053	0.00000082	ug/L		02/02/23 06:24	02/05/23 21:46	1
1,2,3,7,8,9-HxCDF	**0.00000044**	**J,DX q MB**	0.000053	0.00000077	ug/L		02/02/23 06:24	02/05/23 21:46	1
2,3,4,6,7,8-HxCDF	**0.00000027**	**J,DX MB**	0.000053	0.00000070	ug/L		02/02/23 06:24	02/05/23 21:46	1
1,2,3,4,6,7,8-HpCDD	**0.0000017**	**J,DX MB**	0.000053	0.00000014	ug/L		02/02/23 06:24	02/05/23 21:46	1
1,2,3,4,6,7,8-HpCDF	**0.00000067**	**J,DX q MB**	0.000053	0.00000018	ug/L		02/02/23 06:24	02/05/23 21:46	1
1,2,3,4,7,8,9-HpCDF	ND		0.000053	0.00000018	ug/L		02/02/23 06:24	02/05/23 21:46	1
OCDD	**0.0000083**	**J,DX MB**	0.00011	0.00000027	ug/L		02/02/23 06:24	02/05/23 21:46	1
OCDF	**0.0000017**	**J,DX MB**	0.00011	0.00000021	ug/L		02/02/23 06:24	02/05/23 21:46	1
Total TCDD	**0.00000079**	**J,DX q MB**	0.000011	0.00000031	ug/L		02/02/23 06:24	02/05/23 21:46	1
Total TCDF	**0.0000010**	**J,DX q MB**	0.000011	0.00000010	ug/L		02/02/23 06:24	02/05/23 21:46	1
Total PeCDD	**0.00000044**	**J,DX q MB**	0.000053	0.00000020	ug/L		02/02/23 06:24	02/05/23 21:46	1
Total PeCDF	**0.00000051**	**J,DX q MB**	0.000053	0.00000011	ug/L		02/02/23 06:24	02/05/23 21:46	1
Total HxCDD	**0.0000039**	**J,DX q MB**	0.000053	0.00000015	ug/L		02/02/23 06:24	02/05/23 21:46	1
Total HxCDF	**0.0000011**	**J,DX q MB**	0.000053	0.00000070	ug/L		02/02/23 06:24	02/05/23 21:46	1
Total HpCDD	**0.0000032**	**J,DX MB**	0.000053	0.00000014	ug/L		02/02/23 06:24	02/05/23 21:46	1
Total HpCDF	**0.00000067**	**J,DX q MB**	0.000053	0.00000018	ug/L		02/02/23 06:24	02/05/23 21:46	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*78*		*20 - 156*	*42/42/23 45:26*	*42/40/23 21:65*	*1*
13C-2,3,7,8-TCDF	*77*		*26 - 159*	*42/42/23 45:26*	*42/40/23 21:65*	*1*
13C-1,2,3,7,8-PeCDD	*79*		*20 - 181*	*42/42/23 45:26*	*42/40/23 21:65*	*1*
13C-1,2,3,7,8-PeCDF	*84*		*26 - 180*	*42/42/23 45:26*	*42/40/23 21:65*	*1*
13C-2,3,6,7,8-PeCDF	*72*		*21 - 178*	*42/42/23 45:26*	*42/40/23 21:65*	*1*
13C-1,2,3,6,7,8-HxCDD	*58*		*32 - 161*	*42/42/23 45:26*	*42/40/23 21:65*	*1*
13C-1,2,3,5,7,8-HxCDD	*73*		*28 - 134*	*42/42/23 45:26*	*42/40/23 21:65*	*1*
13C-1,2,3,6,7,8-HxCDF	*53*		*25 - 102*	*42/42/23 45:26*	*42/40/23 21:65*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,5,7,8-HxCDF	73		25 - 123	42/42/23 45:26	42/40/23 21:65	1
13C-1,2,3,7,8,9-HxCDF	83		29 - 167	42/42/23 45:26	42/40/23 21:65	1
13C-2,3,6,5,7,8-HxCDF	83		28 - 135	42/42/23 45:26	42/40/23 21:65	1
13C-1,2,3,6,5,7,8-HpCDD	78		23 - 164	42/42/23 45:26	42/40/23 21:65	1
13C-1,2,3,6,5,7,8-HpCDF	58		28 - 163	42/42/23 45:26	42/40/23 21:65	1
13C-1,2,3,6,7,8,9-HpCDF	79		25 - 138	42/42/23 45:26	42/40/23 21:65	1
13C-OCDD	75		17 - 107	42/42/23 45:26	42/40/23 21:65	1
13C-OCDF	75		17 - 107	42/42/23 45:26	42/40/23 21:65	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	92		30 - 197	42/42/23 45:26	42/40/23 21:65	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-2

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000011	0.00000033	ug/L		02/02/23 06:24	02/06/23 16:39	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*75*		*26 - 159*	*42/42/23 45:26*	*42/45/23 15:39*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*147*		*30 - 197*	*42/42/23 45:26*	*42/45/23 15:39*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-124262-1	BGBMP0003_20230114	92
570-124262-1 - RA	BGBMP0003_20230114	107
MB 320-651189/1-A	Method Blank	93
MB 320-651189/1-A - RA	Method Blank	107

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-651189/2-A	Lab Control Sample	90
LCSD 320-651189/3-A	Lab Control Sample Dup	92

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water | **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-124262-1	BGBMP0003_20230114	78	77	79	80	72	68	73	63
570-124262-1 - RA	BGBMP0003_20230114		76						
MB 320-651189/1-A	Method Blank	60	61	58	57	56	46	55	45
MB 320-651189/1-A - RA	Method Blank		60						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-124262-1	BGBMP0003_20230114	73	83	83	78	68	79	76	76
570-124262-1 - RA	BGBMP0003_20230114								
MB 320-651189/1-A	Method Blank	54	53	55	50	47	50	48	47
MB 320-651189/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water | **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-651189/2-A	Lab Control Sample	73	71	78	76	76	75	80	69
LCSD 320-651189/3-A	Lab Control Sample Dup	77	76	78	79	72	68	75	63

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-651189/2-A	Lab Control Sample	81	78	81	77	73	77	78	78
LCSD 320-651189/3-A	Lab Control Sample Dup	75	82	82	79	69	79	80	79

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124262-2
Project/Site: Boeing SSFL ISRA and BMP

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000054	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8-PeCDF	0.000000691	J,DX	0.000050	0.00000018	ug/L		02/02/23 06:24	02/05/23 15:34	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8-HxCDD	0.00000202	J,DX q	0.000050	0.00000023	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000022	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8,9-HxCDD	0.000000925	J,DX	0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8-HxCDF	0.000000701	J,DX	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,6,7,8-HxCDF	0.000000358	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,7,8,9-HxCDF	0.000000644	J,DX q	0.000050	0.00000015	ug/L		02/02/23 06:24	02/05/23 15:34	1
2,3,4,6,7,8-HxCDF	0.000000431	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,6,7,8-HpCDD	0.00000195	J,DX q	0.000050	0.00000028	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,6,7,8-HpCDF	0.00000178	J,DX q	0.000050	0.00000024	ug/L		02/02/23 06:24	02/05/23 15:34	1
1,2,3,4,7,8,9-HpCDF	0.000000759	J,DX q	0.000050	0.00000026	ug/L		02/02/23 06:24	02/05/23 15:34	1
OCDD	0.0000108	J,DX	0.00010	0.00000046	ug/L		02/02/23 06:24	02/05/23 15:34	1
OCDF	0.00000206	J,DX	0.00010	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total TCDD	0.00000231	J,DX	0.000010	0.00000054	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total TCDF	0.00000107	J,DX	0.000010	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total PeCDD	0.000000379	J,DX q	0.000050	0.00000029	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total PeCDF	0.000000691	J,DX	0.000050	0.00000018	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HxCDD	0.00000295	J,DX q	0.000050	0.00000020	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HxCDF	0.00000253	J,DX q	0.000050	0.00000013	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HpCDD	0.00000444	J,DX q	0.000050	0.00000028	ug/L		02/02/23 06:24	02/05/23 15:34	1
Total HpCDF	0.00000254	J,DX q	0.000050	0.00000024	ug/L		02/02/23 06:24	02/05/23 15:34	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,7,8-PeCDD	*58*		*25 - 181*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,7,8-PeCDF	*57*		*24 - 185*	*02/02/23 06:24*	*02/05/23 15:34*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	56		21 - 178	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8-HxCDD	46		32 - 141	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,6,7,8-HxCDD	55		28 - 130	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8-HxCDF	45		26 - 152	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,6,7,8-HxCDF	54		26 - 123	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,7,8,9-HxCDF	53		29 - 147	02/02/23 06:24	02/05/23 15:34	1
13C-2,3,4,6,7,8-HxCDF	55		28 - 136	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,6,7,8-HpCDD	50		23 - 140	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,6,7,8-HpCDF	47		28 - 143	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8,9-HpCDF	50		26 - 138	02/02/23 06:24	02/05/23 15:34	1
13C-OCDD	48		17 - 157	02/02/23 06:24	02/05/23 15:34	1
13C-OCDF	47		17 - 157	02/02/23 06:24	02/05/23 15:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	93		35 - 197	02/02/23 06:24	02/05/23 15:34	1

Lab Sample ID: LCS 320-651189/2-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651189

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000208		ug/L		104	67 - 158
2,3,7,8-TCDF	0.000200	0.000215		ug/L		107	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.00101		ug/L		101	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.00100		ug/L		100	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.00102		ug/L		102	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000971		ug/L		97	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00103		ug/L		103	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000993		ug/L		99	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.00101		ug/L		101	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000997		ug/L		100	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000982		ug/L		98	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.00101		ug/L		101	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.00100		ug/L		100	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.00102		ug/L		102	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000993		ug/L		99	78 - 138
OCDD	0.00200	0.00200		ug/L		100	78 - 144
OCDF	0.00200	0.00207		ug/L		103	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	73		20 - 175
13C-2,3,7,8-TCDF	71		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	76		21 - 192
13C-2,3,4,7,8-PeCDF	76		13 - 328
13C-1,2,3,4,7,8-HxCDD	75		21 - 193
13C-1,2,3,6,7,8-HxCDD	80		25 - 163
13C-1,2,3,4,7,8-HxCDF	69		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-651189/2-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	81		21 - 159
13C-1,2,3,7,8,9-HxCDF	78		17 - 205
13C-2,3,4,6,7,8-HxCDF	81		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	77		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	73		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	77		20 - 186
13C-OCDD	78		13 - 199
13C-OCDF	78		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	90		31 - 191

Lab Sample ID: LCSD 320-651189/3-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651189

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000216		ug/L		108	67 - 158	3	50
2,3,7,8-TCDF			0.000200	0.000221		ug/L		110	75 - 158	3	50
1,2,3,7,8-PeCDD			0.00100	0.00105		ug/L		105	70 - 142	4	50
1,2,3,7,8-PeCDF			0.00100	0.00104		ug/L		104	80 - 134	4	50
2,3,4,7,8-PeCDF			0.00100	0.00106		ug/L		106	68 - 160	4	50
1,2,3,4,7,8-HxCDD			0.00100	0.00102		ug/L		102	70 - 164	5	50
1,2,3,6,7,8-HxCDD			0.00100	0.00107		ug/L		107	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.00114		ug/L		114	64 - 162	14	50
1,2,3,4,7,8-HxCDF			0.00100	0.00106		ug/L		106	72 - 134	5	50
1,2,3,6,7,8-HxCDF			0.00100	0.00103		ug/L		103	84 - 130	3	50
1,2,3,7,8,9-HxCDF			0.00100	0.00103		ug/L		103	78 - 130	4	50
2,3,4,6,7,8-HxCDF			0.00100	0.00104		ug/L		104	70 - 156	3	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00104		ug/L		104	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00106		ug/L		106	82 - 122	4	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00104		ug/L		104	78 - 138	4	50
OCDD			0.00200	0.00207		ug/L		104	78 - 144	4	50
OCDF			0.00200	0.00216		ug/L		108	63 - 170	4	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 175
13C-2,3,7,8-TCDF	76		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	79		21 - 192
13C-2,3,4,7,8-PeCDF	72		13 - 328
13C-1,2,3,4,7,8-HxCDD	68		21 - 193
13C-1,2,3,6,7,8-HxCDD	75		25 - 163
13C-1,2,3,4,7,8-HxCDF	63		19 - 202
13C-1,2,3,6,7,8-HxCDF	75		21 - 159
13C-1,2,3,7,8,9-HxCDF	82		17 - 205
13C-2,3,4,6,7,8-HxCDF	82		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	79		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-651189/3-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	69		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	80		13 - 199
13C-OCDF	79		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651969

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000042	ug/L		02/02/23 06:24	02/06/23 12:44	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	60		24 - 169	02/02/23 06:24	02/06/23 12:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	107		35 - 197	02/02/23 06:24	02/06/23 12:44	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-2

Specialty Organics

Prep Batch: 651189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1 - RA	BGBMP0003_20230114	Total/NA	Water	1613B	
570-124262-1	BGBMP0003_20230114	Total/NA	Water	1613B	
MB 320-651189/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-651189/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-651189/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-651189/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 651907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	1613B	651189
MB 320-651189/1-A	Method Blank	Total/NA	Water	1613B	651189
LCS 320-651189/2-A	Lab Control Sample	Total/NA	Water	1613B	651189
LCSD 320-651189/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	651189

Analysis Batch: 651969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1 - RA	BGBMP0003_20230114	Total/NA	Water	1613B	651189
MB 320-651189/1-A - RA	Method Blank	Total/NA	Water	1613B	651189

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-2

Client Sample ID: BGBMP0003_20230114

Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		947.5 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651969	02/06/23 16:39	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			947.5 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	651907	02/05/23 21:46	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-2

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124262-1	BGBMP0003_20230114	Water	01/15/23 08:00	01/17/23 18:25

124262

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program | | DW | | NPDES | | RCRA ☐ Other

TestAmerica service unit COC to be performed in accordance with the attached Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich and its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-17-23	COC No:
Haley & Aldrich Inc.	Tel/Fax: (620) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1), Total Combined Radium 226 & 228 Sr-90 (E903.0/E903, E904, E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0) K-40 CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr Cu, Fe Mn, Ni, Pb Se Sb Tl; Method 200.7, B Zn (Total Dissolved)	Method 200.8 Ag, Al, As, Ba Be, Cd, Cr Cu Fe Mn, Ni, Pb Se Sb, Tl; Method 200.7, B, Zn (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury, dissolved (E1631)	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1 250mL Poly	1 250mL Amber	1-250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here
BGBMP0003_20230114	01/15/23	0800	G	WM	2	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6		

570-124262 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
| | Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: SHA	Date/Time: 01/17/23/1245	Received by: EC	Date/Time: 1/17/23 1245
Relinquished by:	Company: EC	Date/Time: 1/17/23/1825	Received by:	Date/Time: 1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.9|1.9 sc11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2/13/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124262-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N None
O AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP00003_20230114 (570-124262-1)	1/15/23	08 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/18/23 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204509.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124262-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/6/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitnc Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Scx_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGBMP00003_20230114 (570-124262-1)	1/15/23	08:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 1/18/23 1325	Company	Received by:	Date/Time: 1.19.23 910	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: Seal		Cooler Temperature(s) °C and Other Remarks: 1.8 v		

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124262-2

Login Number: 124262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124262-2

Login Number: 124262
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/19/23 11:49 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8c 1.7c 2.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/24/2023 12:52:20 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124262-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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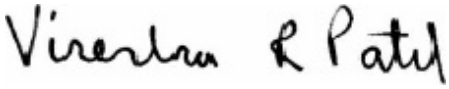
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124262-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124262-3

Comments
No additional comments.

Receipt
The sample was received on 1/17/2023 6:25 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9º C.

Metals
Method 1631E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following sample associated with analytical batch 580-416060 were outside control limits: (580-122334-A-10 MS) and (580-122334-A-10 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-3

Client Sample ID: BGBMP00003_20230114

Lab Sample ID: 570-124262-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.015		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.014		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-3

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: BGBMP00003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.015		0.00050	0.000079	ug/L			01/20/23 16:59	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-3

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: BGBMP00003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.014		0.00050	0.000079	ug/L			01/20/23 18:10	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-416060/19
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:46	1

Lab Sample ID: MB 580-416060/20
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:50	1

Lab Sample ID: MB 580-416060/23
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 13:03	1

Lab Sample ID: LCS 580-416060/29
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00449		ug/L		90	77 - 123		

Lab Sample ID: LCSD 580-416060/32
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00438		ug/L		88	77 - 123	2	24

Lab Sample ID: 570-124252-K-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.011		0.0150	0.0255		ug/L		99	71 - 125		

Lab Sample ID: 570-124252-K-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.011		0.0150	0.0259		ug/L		102	71 - 125	2	24

Lab Sample ID: 570-124263-D-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.14		0.200	0.360		ug/L		109	71 - 125		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-3

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 570-124263-D-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.14		0.200	0.358		ug/L		108	71 - 125	1	24

Lab Sample ID: MB 580-415853/1-A
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 14:46	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-3

Metals

Filtration Batch: 415853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP00003_20230114	Dissolved	Water	Filtration	
MB 580-415853/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 416060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP00003_20230114	Dissolved	Water	1631E	415853
570-124262-1	BGBMP00003_20230114	Total/NA	Water	1631E	
MB 580-415853/1-A	Method Blank	Dissolved	Water	1631E	415853
MB 580-416060/19	Method Blank	Total/NA	Water	1631E	
MB 580-416060/20	Method Blank	Total/NA	Water	1631E	
MB 580-416060/23	Method Blank	Total/NA	Water	1631E	
LCS 580-416060/29	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-416060/32	Lab Control Sample Dup	Total/NA	Water	1631E	
570-124252-K-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-124252-K-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
570-124263-D-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-124263-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-3

Client Sample ID: BGBMP00003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415853	01/19/23 13:15	AJD	EET SEA
Dissolved	Analysis	1631E		1			416060	01/20/23 18:10	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			416060	01/20/23 16:59	COW	EET SEA
	Instrument ID: 2600-4									

Laboratory References:
EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124262-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-3

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124262-1	BGBMP00003_20230114	Water	01/15/23 08:00	01/17/23 18:25

124262

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program | | DW | | NPDES | | RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-9-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (620) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1), Total Combined Radium 226 & 228 Sr-90 (E903.0/E903, E904, E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0) K-40 CS-137 (E901.0 or E901.1)' Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314 0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr Cu, Fe Mn, Ni, Pb Se Sb Tl; Method 200.7, B Zn (Total Dissolved)	Method 200.8 Ag, Al, As, Ba Be, Cd, Cr Cu Fe Mn, Ni, Pb Se Sb, Tl; Method 200.7, B, Zn (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury, dissolved (E1631)	Trichloroethene (E624 1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1 250mL Poly	1 250mL Amber	1-250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here
BGBMP0003_20230114	01/15/23	0800	G	WM	2	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6		

570-124262 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
| | Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: SHA	Date/Time: 01/17/23/1245	Received by: EC	Date/Time: 1/17/23 1245
Relinquished by:	Company: EC	Date/Time: 1/17/23/1825	Received by:	Date/Time: 1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.9|1.9 sc11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1/24/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124262-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N None
O AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP00003_20230114 (570-124262-1)	1/15/23	08 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/18/23 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204480.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124262-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP00003_20230114 (570-124262-1)	1/15/23	08:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 1/18/23 1230	Company	Received by: [signature]	Date/Time: 1/19/23 9:45	Company: EPGS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: NP	Cooler Temperature(s) °C and Other Remarks: 0.0 Dry 4 0.3			

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124262-3

Login Number: 124262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124262-3

Login Number: 124262
List Number: 4
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/19/23 12:58 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124262-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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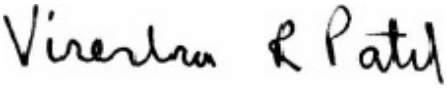
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-4

Job ID: 570-124262-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124262-4

Comments
No additional comments.

Receipt
The sample was received on 1/17/2023 6:25 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9º C.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-4

Client Sample ID: BGBMP0003_20230114 **Lab Sample ID: 570-124262-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-4

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/04/23 13:34	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	01/15/23
Date Received:	01/17/23
Work Order No:	570-124262
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
BGBMP0003_20230114		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

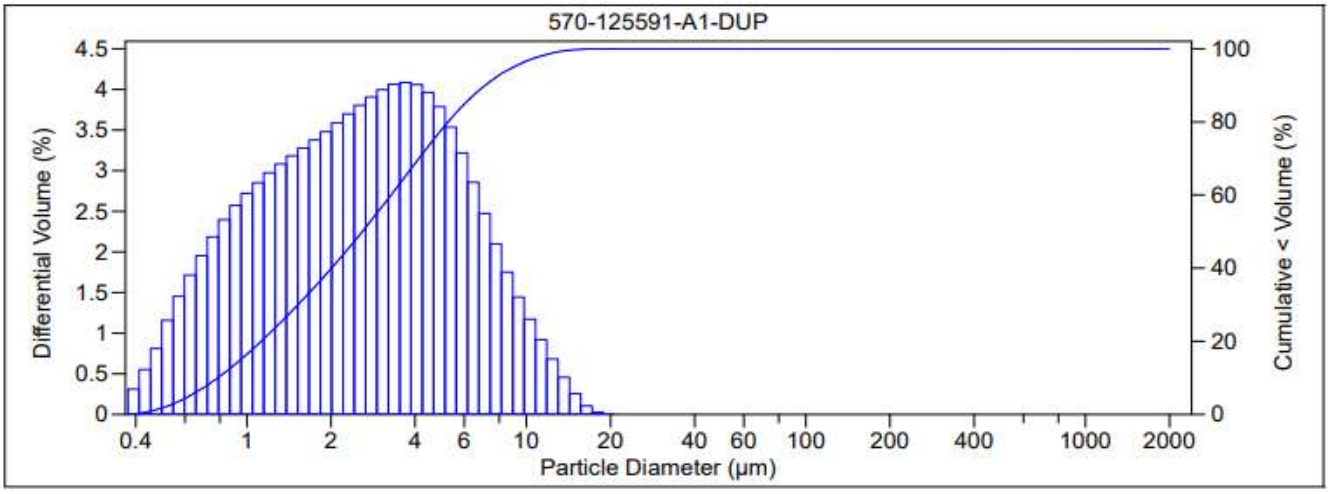
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125590
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13130

Sample ID	Depth ft	Description	Mean Grain Size mm
130-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	32.31	67.69	100.00



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

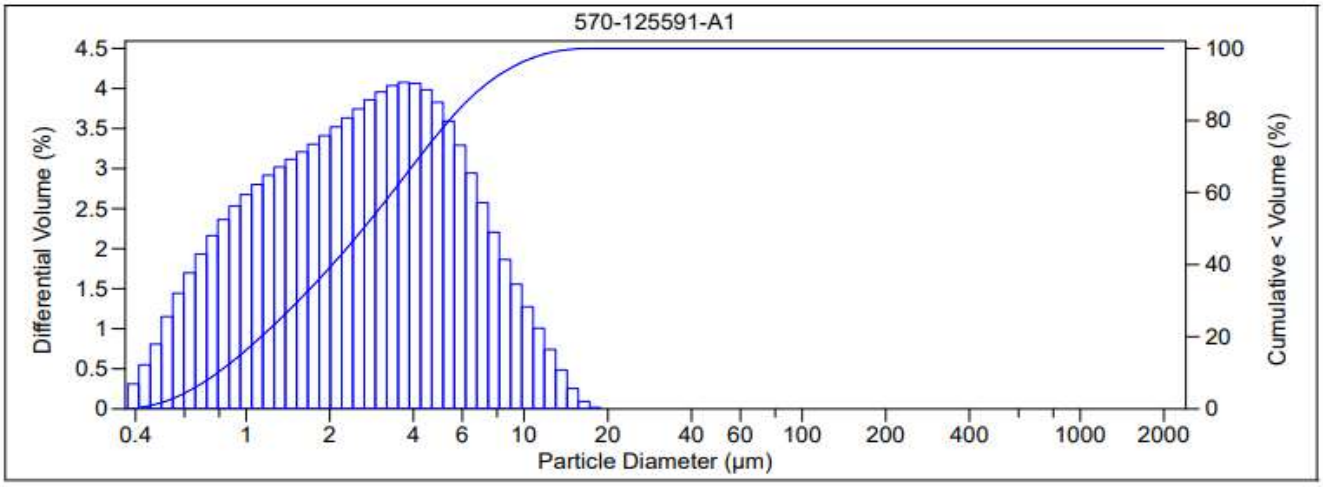
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125591
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13131

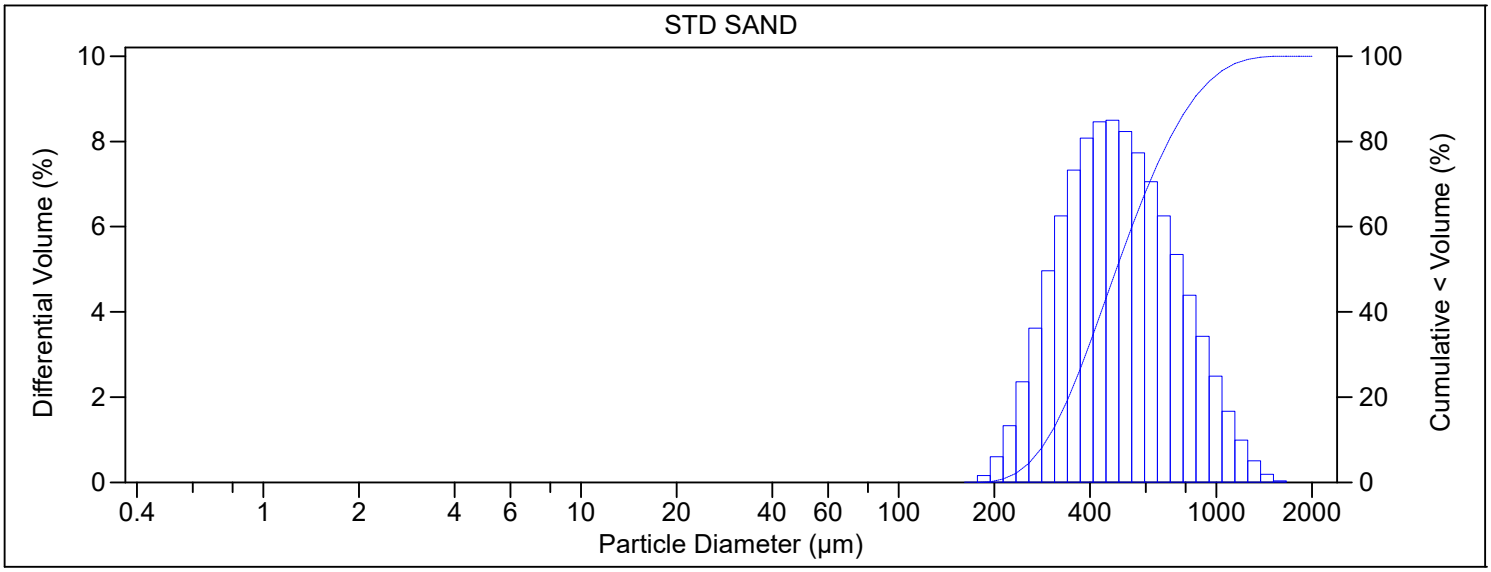
Sample ID	Depth ft	Description	Mean Grain Size mm
131-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	33.28	66.72	100.00



V 3.0

File name:	C:\LS13320\STD SAND_ 3 Feb 2023_19.52.20.$ls STD SAND_ 3 Feb 2023_19.52.20.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	22 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	19:51 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 3 Feb 2023_19.52.20.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	534.6 µm	S.D.:	224.4 µm
Median:	485.0 µm	Variance:	50358 µm^2
Mean/Median ratio:	1.102	Skewness:	1.068 Right skewed
Mode:	471.1 µm	Kurtosis:	1.067 Leptokurtic

d_{10}: 292.7 µm d_{50}: 485.0 µm d_{90}: 851.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.02	Median:	1.04	Deviation:	0.60
Skewness:	-0.06	Kurtosis:	0.93		

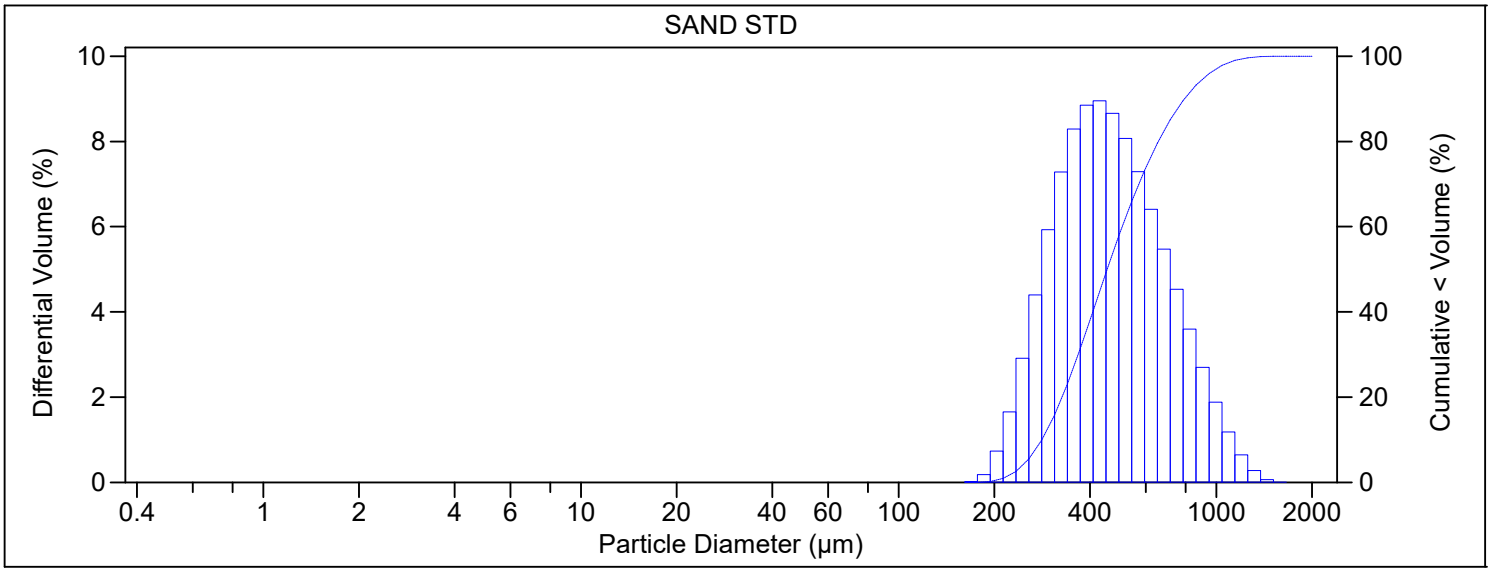
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
260.7 µm	323.9 µm	365.7 µm	434.7 µm	485.0 µm	656.2 µm	756.9 µm	981.3 µm

Particle Diameter µm	STD SAND_ 3 Feb 2023 _19.52.20 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	3.75
250	49.0
500	42.8
1000	4.50
2000	

STD SAND_ 3 Feb 2023_19.52.20.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.99
0.412	0	22.73	0	1255	0.51
0.452	0	24.95	0	1377	0.19
0.496	0	27.39	0	1512	0.034
0.545	0	30.07	0	1660	0.0013
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.011		
3.206	0	176.9	0.16		
3.519	0	194.2	0.60		
3.863	0	213.2	1.33		
4.241	0	234.1	2.36		
4.656	0	256.9	3.62		
5.111	0	282.1	4.97		
5.611	0	309.6	6.26		
6.159	0	339.9	7.33		
6.761	0	373.1	8.07		
7.422	0	409.6	8.46		
8.148	0	449.7	8.50		
8.944	0	493.6	8.23		
9.819	0	541.9	7.73		
10.78	0	594.9	7.06		
11.83	0	653.0	6.25		
12.99	0	716.9	5.35		
14.26	0	786.9	4.39		
15.65	0	863.9	3.43		
17.18	0	948.3	2.50		
18.86	0	1041	1.67		

File name:	C:\LS13320\SAND STD_ 3 Feb 2023_20.33.47.$ls		
	SAND STD_ 3 Feb 2023_20.33.47.$ls		
File ID:	SAND STD		
Sample ID:	SAND STD		
Operator:	C6FB		
Run number:	24		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:32 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) SAND STD_ 3 Feb 2023_20.33.47.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	501.8 µm	S.D.:	207.4 µm
Median:	453.7 µm	Variance:	42999 µm^2
Mean/Median ratio:	1.106	Skewness:	1.134 Right skewed
Mode:	429.2 µm	Kurtosis:	1.262 Leptokurtic

d_{10}: 282.5 µm d_{50}: 453.7 µm d_{90}: 794.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.11	Median:	1.14	Deviation:	0.58
Skewness:	-0.08	Kurtosis:	0.94		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
253.0 µm	310.4 µm	347.5 µm	408.6 µm	453.7 µm	611.0 µm	703.9 µm	919.1 µm

Particle Diameter µm	SAND STD_ 3 Feb 2023 _20.33.47 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	4.62
250	54.3
500	38.1
1000	3.02
2000	

SAND STD_ 3 Feb 2023_20.33.47.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.65
0.412	0	22.73	0	1255	0.28
0.452	0	24.95	0	1377	0.068
0.496	0	27.39	0	1512	0.0041
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.012		
3.206	0	176.9	0.19		
3.519	0	194.2	0.74		
3.863	0	213.2	1.65		
4.241	0	234.1	2.91		
4.656	0	256.9	4.40		
5.111	0	282.1	5.93		
5.611	0	309.6	7.28		
6.159	0	339.9	8.29		
6.761	0	373.1	8.85		
7.422	0	409.6	8.95		
8.148	0	449.7	8.66		
8.944	0	493.6	8.07		
9.819	0	541.9	7.29		
10.78	0	594.9	6.41		
11.83	0	653.0	5.48		
12.99	0	716.9	4.53		
14.26	0	786.9	3.59		
15.65	0	863.9	2.70		
17.18	0	948.3	1.88		
18.86	0	1041	1.18		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-4

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-125591-A-1 DU
Matrix: Water
Analysis Batch: 301228

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay (less than 0.00391 mm)	66.72			67.69		%				1	20
Coarse Sand (0.5mm to 1mm)	ND			ND		%				NC	20
Fine Sand (0.125 to 0.25mm)	ND			ND		%				NC	20
Gravel (greater than 2 mm)	ND			ND		%				NC	20
Medium Sand (0.25 to 0.5 mm)	ND			ND		%				NC	20
Silt (0.00391 to 0.0625mm)	33.28			32.31		%				3	20
Total Silt and Clay (0 to 0.0626mm)	100.00			100.00		%				0	20
Very Coarse Sand (1 to 2mm)	ND			ND		%				NC	20
Very Fine Sand (0.0625 to 0.125 mm)	ND			ND		%				NC	20

Geotechnical

Analysis Batch: 301228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	D4464	
LCS 570-301228/22	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-301228/24	Lab Control Sample Dup	Total/NA	Water	D4464	
570-125591-A-1 DU	Duplicate	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124262-4
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: BGBMP0003_20230114
Lab Sample ID: 570-124262-1
Date Collected: 01/15/23 08:00
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124262-4
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-4

Method	Method Description	Protocol	Laboratory
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4

Protocol References:

ASTM = ASTM International

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124262-1	BGBMP0003_20230114	Water	01/15/23 08:00	01/17/23 18:25

124262

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program | | DW | | NPDES | | RCRA ☐ Other

TestAmerica service unit COC to be performed in accordance with the attached Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich and its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-17-23	COC No:
Haley & Aldrich Inc.	Tel/Fax: (620) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1), Total Combined Radium 226 & 228 Sr-90 (E903.0/E903, E904, E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0) K-40 CS-137 (E901.0 or E901.1)' Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314 0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr Cu, Fe Mn, Ni, Pb Se Sb Tl; Method 200.7, B Zn (Total Dissolved)	Method 200.8 Ag, Al, As, Ba Be, Cd, Cr Cu Fe Mn, Ni, Pb Se Sb, Tl; Method 200.7, B, Zn (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury, dissolved (E1631)	Trichloroethene (E624 1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1 250mL Poly	1 250mL Amber	1-250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here
BGBMP0003_20230114	01/15/23	0800	G	WM	2	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6		

570-124262 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
| | Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: SHA	Date/Time: 01/17/23/1245	Received by: EC	Date/Time: 1/17/23 1245
Relinquished by:	Company: EC	Date/Time: 1/17/23/1825	Received by:	Date/Time: 1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.9|1.9 sc11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2/7/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124262-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N None
O AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP00003_20230114 (570-124262-1)	1/15/23	08 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/18/23 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124262-4

Login Number: 124262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/23/2023 1:08:35 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124262-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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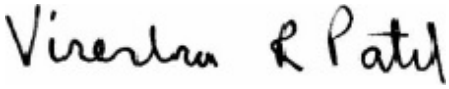

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124262-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124262-5

Comments
No additional comments.

Receipt
The sample was received on 1/17/2023 6:25 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9º C.

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6. The samples were adjusted to the appropriate pH in the laboratory.

Job#: 570-124260 -1
Job#: 570-124252 -1.2.3
Job#: 570-124263 -1,2
Job#: 570-124262 -1

The following sample was received outside of holding time for NO3,NO2 & Cr VI: BGBMP0003_20230114 (570-124262-1).

RAD
Method 900.0: Gross Alpha and Gross Beta batch 598534
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20230114 (570-124262-1), (LCS 160-598534/2-A), (LCSB 160-598534/3-A), (MB 160-598534/1-A), (570-124230-R-1-G), (570-124230-R-1-J DU), (570-124230-R-1-H MS) and (570-124230-R-1-I MSBT)

Method 901.1: Gamma Prep Batch 160-597949
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211

Job ID: 570-124262-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Bi-214 Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20230114 (570-124262-1), (570-123901-U-2-E) and (570-123901-U-2-F DU)

Method 901.1: Gamma Prep Batch 160-597709
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20230114 (570-124262-1), (570-124252-U-1-D) and (570-124252-U-1-F DU)

Method 903.0: Radium-226 batch 597616
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230114 (570-124262-1), (LCS 160-597616/2-A), (MB 160-597616/1-A), (160-48612-B-1-A) and (160-48612-D-1-A DU)

Methods 903.0, 9315: Radium-226 batch 598000
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230114 (570-124262-1), (LCS 160-598000/2-A), (LCSD 160-598000/3-A) and (MB 160-598000/1-A)

Job ID: 570-124262-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 904.0: Radium 228 batch 597622
The LCS recovered at (126%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-597622/2-A)

Method 904.0: Radium 228 batch 597622
The detection goal was not met for the following sample(s). Samples are prepped at a reduced volume due to the presence of matrix interferences: (160-48612-B-1-B) and (160-48612-D-1-B DU). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium 228 batch 597622
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230114 (570-124262-1), (LCS 160-597622/2-A), (MB 160-597622/1-A), (160-48612-B-1-B) and (160-48612-D-1-B DU)

Methods 904.0, 9320: Radium-228 batch 598012
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230114 (570-124262-1), (LCS 160-598012/2-A), (LCSD 160-598012/3-A) and (MB 160-598012/1-A)

Method 905: Strontium prep batch 160-597624:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230114 (570-124262-1), (LCS 160-597624/2-A), (LCSD 160-597624/3-A) and (MB 160-597624/1-A)

Method 905: Strontium-90 prep batch 160-598546:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230114 (570-124262-1)

Methods 900.0, 905: Gross Alpha Beta prep batch 160-598892:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. (LCS 160-598546/2-A), (LCSD 160-598546/3-A) and (MB 160-598546/1-A)

Method 906.0: Tritium 598717
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230114 (570-124262-1), (LCS 160-598717/2-A), (MB 160-598717/1-A), (570-124392-Q-1-A), (570-124392-Q-1-B DU), (570-124868-Q-1-A) and (570-124868-Q-1-B MS)

Method A-01-R: Isotopic Uranium batch 598078
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230114 (570-124262-1), (LCS 160-598078/2-A), (MB 160-598078/1-A), (570-124263-K-2-C) and (570-124263-K-2-D DU)

Job ID: 570-124262-5 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method ExtChrom: Uranium Prep Batch 160-597078:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: BGBMP0003_20230114 (570-124262-1).

Method PrecSep_0:

Method PrecSep_0: Radium-228 Prep Batch 160-598012

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230114 (570-124262-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21:

Method PrecSep-21: Radium-226 Prep Batch 160-598000

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230114 (570-124262-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-597624

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230114 (570-124262-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-598546

Insufficient sample volume was available to perform a sample duplicate for the following samples: BGBMP0003_20230114 (570-124262-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-598546

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230114 (570-124262-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Client Sample ID: BGBMP0003_20230114 **Lab Sample ID: 570-124262-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.05	U	0.905	0.913	3.00	1.41	pCi/L	01/27/23 10:37	02/13/23 18:37	1
Gross Beta	**1.66**		0.696	0.715	4.00	0.973	pCi/L	01/27/23 10:37	02/13/23 18:37	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.915	U	0.870	0.876	3.00	1.37	pCi/L	01/27/23 10:37	02/13/23 18:38	1
Gross Beta	**1.66**		0.668	0.689	4.00	0.895	pCi/L	01/27/23 10:37	02/13/23 18:38	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-7.63	U	14.0	14.0	20.0	16.6	pCi/L	01/20/23 14:22	02/21/23 04:40	1
Potassium-40	**109**		54.4	55.9		50.1	pCi/L	01/20/23 14:22	02/21/23 04:40	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-3.11	U	8.53	8.54	20.0	10.3	pCi/L	01/23/23 15:17	02/08/23 12:00	1
Potassium-40	-23.3	U	98.5	98.5		124	pCi/L	01/23/23 15:17	02/08/23 12:00	1

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0268	U	0.0548	0.0549	1.00	0.101	pCi/L	01/20/23 12:30	02/13/23 15:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.3*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:30*	*1*

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00341	U	0.0471	0.0471	1.00	0.101	pCi/L	01/24/23 10:22	02/15/23 10:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*01/24/23 10:22*	*02/15/23 10:13*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.118	U	0.357	0.358	1.00	0.624	pCi/L	01/20/23 12:59	01/26/23 12:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*94.3*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:22*	*1*
Y Carrier	*70.3*		*40 - 110*	*01/20/23 12:59*	*01/26/23 12:22*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0311	U	0.418	0.418	1.00	0.788	pCi/L	01/24/23 10:38	01/31/23 12:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*40 - 110*	*01/24/23 10:38*	*01/31/23 12:26*	*1*
Y Carrier	*81.5*		*40 - 110*	*01/24/23 10:38*	*01/31/23 12:26*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.129	U	0.479	0.480	3.00	0.830	pCi/L	01/20/23 13:08	01/30/23 17:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.7*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:22*	*1*
Y Carrier	*78.5*		*40 - 110*	*01/20/23 13:08*	*01/30/23 17:22*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.403	U	0.357	0.358	3.00	0.570	pCi/L	01/27/23 12:54	02/08/23 16:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*89.6*		*40 - 110*	*01/27/23 12:54*	*02/08/23 16:07*	*1*
Y Carrier	*85.6*		*40 - 110*	*01/27/23 12:54*	*02/08/23 16:07*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	45.5	U	153	153	500	264	pCi/L	01/31/23 12:11	02/01/23 23:47	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.241	U	0.306	0.306	1.00	0.413	pCi/L	01/24/23 12:57	02/13/23 13:51	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: BGBMP0003_20230114
Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.145	U	0.203	0.203	1.00	0.270	pCi/L	01/24/23 12:57	02/13/23 13:51	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
160-48612-D-1-A DU	Duplicate	79.4
570-124262-1	BGBMP0003_20230114	94.3
LCS 160-597616/2-A	Lab Control Sample	96.3
LCS 160-598000/2-A	Lab Control Sample	94.3
LCSD 160-598000/3-A	Lab Control Sample Dup	96.3
MB 160-597616/1-A	Method Blank	85.4
MB 160-598000/1-A	Method Blank	90.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(40-110)
570-124262-1	BGBMP0003_20230114	92.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
160-48612-D-1-B DU	Duplicate	79.4	50.1
570-124262-1	BGBMP0003_20230114	94.3	70.3
LCS 160-597622/2-A	Lab Control Sample	96.3	49.3
LCS 160-598012/2-A	Lab Control Sample	94.3	85.2
LCSD 160-598012/3-A	Lab Control Sample Dup	96.3	85.6
MB 160-597622/1-A	Method Blank	85.4	59.4
MB 160-598012/1-A	Method Blank	90.6	82.6

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124262-1	BGBMP0003_20230114	92.3	81.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124262-5
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124262-1	BGBMP0003_20230114	86.7	78.5
LCS 160-597624/2-A	Lab Control Sample	90.8	84.1
LCS 160-598546/2-A	Lab Control Sample	85.4	87.5
LCSD 160-597624/3-A	Lab Control Sample Dup	87.3	88.2
LCSD 160-598546/3-A	Lab Control Sample Dup	88.3	86.4
MB 160-597624/1-A	Method Blank	89.1	85.6
MB 160-598546/1-A	Method Blank	87.1	87.1

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(40-110)	(40-110)
570-124262-1	BGBMP0003_20230114	89.6	85.6

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-598078/2-A	Lab Control Sample	85.2
MB 160-598078/1-A	Method Blank	82.1

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-124263-K-2-D DU	Duplicate	73.4

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-598534/1-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598534

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.2749	U	0.539	0.540	3.00	1.11	pCi/L	01/27/23 10:37	02/13/23 16:16	1
Gross Beta	0.3954	U	0.533	0.534	4.00	0.888	pCi/L	01/27/23 10:37	02/13/23 16:16	1

Lab Sample ID: LCS 160-598534/2-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	47.97		7.10	3.00	2.38	pCi/L	95	75 - 125

Lab Sample ID: LCSB 160-598534/3-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	67.26		7.25	4.00	0.956	pCi/L	91	75 - 125

Lab Sample ID: 570-124230-R-1-H MS
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	2.61		50.5	33.45		5.21	3.00	1.74	pCi/L	61	60 - 140

Lab Sample ID: 570-124230-R-1-I MSBT
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	3.65		73.7	75.89		8.13	4.00	0.892	pCi/L	98	60 - 140

Lab Sample ID: 570-124230-R-1-J DU
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	2.61		1.519	U	1.20	3.00	1.80	pCi/L	0.37	1
Gross Beta	3.65		2.505		0.804	4.00	0.976	pCi/L	0.66	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597709/1-A
Matrix: Water
Analysis Batch: 600999

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597709

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.201	U	9.37	9.37	20.0	11.7	pCi/L	01/20/23 14:22	02/20/23 18:19	1
Potassium-40	-11.33	U	161	161		182	pCi/L	01/20/23 14:22	02/20/23 18:19	1

Lab Sample ID: LCS 160-597709/2-A
Matrix: Water
Analysis Batch: 601005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597709

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	137900		16400		298	pCi/L	102	75 - 125
Cesium-137	40900	42040		5010	20.0	72.3	pCi/L	103	75 - 125
Cobalt-60	18000	18800		2240		42.9	pCi/L	104	75 - 125

Lab Sample ID: 570-124252-U-1-F DU
Matrix: Water
Analysis Batch: 600999

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597709

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	0.848	U	-2.934	U	8.67	20.0	10.7	pCi/L	0.26	1
Potassium-40	59.2	U	133.7		94.8		91.6	pCi/L	0.49	1

Lab Sample ID: MB 160-597949/1-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597949

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.297	U	6.65	6.65	20.0	8.59	pCi/L	01/23/23 15:17	02/08/23 14:01	1
Potassium-40	43.04	U	107	107		122	pCi/L	01/23/23 15:17	02/08/23 14:01	1

Lab Sample ID: LCS 160-597949/2-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597949

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	147900		17600		344	pCi/L	109	75 - 125
Cesium-137	41000	39930		4760	20.0	101	pCi/L	97	75 - 125
Cobalt-60	18100	17850		2130		66.0	pCi/L	99	75 - 125

Lab Sample ID: 570-123901-U-2-F DU
Matrix: Water
Analysis Batch: 599622

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 597949

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	1.70	U	3.380	U	6.27	20.0	7.58	pCi/L	0.14	1
Potassium-40	82.3		-45.72	U	90.3		128	pCi/L	0.80	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-597616/1-A
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597616

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02734	U	0.0585	0.0585	1.00	0.106	pCi/L	01/20/23 12:30	02/13/23 15:23	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.4*		*40 - 110*	*01/20/23 12:30*	*02/13/23 15:23*	*1*

Lab Sample ID: LCS 160-597616/2-A
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597616

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.92		1.11	1.00	0.0938	pCi/L	96	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*96.3*		*40 - 110*

Lab Sample ID: 160-48612-D-1-A DU
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597616

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-226	0.0133	U		0.07048	U	0.0846	1.00	0.138	pCi/L			0.33	1

Carrier	*DU %Yield*	*DU Qualifier*	*Limits*
Ba Carrier	*79.4*		*40 - 110*

Lab Sample ID: MB 160-598000/1-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598000

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02089	U	0.0448	0.0448	1.00	0.0825	pCi/L	01/24/23 10:22	02/15/23 10:07	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.6*		*40 - 110*	*01/24/23 10:22*	*02/15/23 10:07*	*1*

Lab Sample ID: LCS 160-598000/2-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598000

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	10.66		1.09	1.00	0.0723	pCi/L	94	75 - 125		

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-598000/2-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598000

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	94.3		40 - 110

Lab Sample ID: LCSD 160-598000/3-A
Matrix: Water
Analysis Batch: 600464

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598000

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	10.99		1.12	1.00	0.116	pCi/L	97	75 - 125	0.15	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	96.3		40 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-597622/1-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597622

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1588	U	0.399	0.399	1.00	0.686	pCi/L	01/20/23 12:59	01/26/23 12:13	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.4		40 - 110	01/20/23 12:59	01/26/23 12:13	1
Y Carrier	59.4		40 - 110	01/20/23 12:59	01/26/23 12:13	1

Lab Sample ID: LCS 160-597622/2-A
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597622

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.24	10.41		1.36	1.00	0.674	pCi/L	126	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	96.3		40 - 110
Y Carrier	49.3		40 - 110

Lab Sample ID: 160-48612-D-1-B DU
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597622

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Radium-228	0.549	U G		0.3935	U	0.527	1.00	0.877	pCi/L			0.13	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: 160-48612-D-1-B DU
Matrix: Water
Analysis Batch: 598283

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597622

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	79.4		40 - 110
Y Carrier	50.1		40 - 110

Lab Sample ID: MB 160-598012/1-A
Matrix: Water
Analysis Batch: 598848

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598012

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2147	U	0.309	0.310	1.00	0.521	pCi/L	01/24/23 10:38	01/31/23 11:46	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110	01/24/23 10:38	01/31/23 11:46	1
Y Carrier	82.6		40 - 110	01/24/23 10:38	01/31/23 11:46	1

Lab Sample ID: LCS 160-598012/2-A
Matrix: Water
Analysis Batch: 598848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598012

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.23	8.192		1.13	1.00	0.455	pCi/L	100	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	94.3		40 - 110
Y Carrier	85.2		40 - 110

Lab Sample ID: LCSD 160-598012/3-A
Matrix: Water
Analysis Batch: 598848

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598012

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.23	7.773		1.08	1.00	0.444	pCi/L	94	75 - 125	0.19	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	96.3		40 - 110
Y Carrier	85.6		40 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-597624/1-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597624

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1919	U	0.177	0.177	3.00	0.284	pCi/L	01/20/23 13:08	01/30/23 17:13	1

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	89.1		40 - 110	01/20/23 13:08	01/30/23 17:13	1
Y Carrier	85.6		40 - 110	01/20/23 13:08	01/30/23 17:13	1

Lab Sample ID: LCS 160-597624/2-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597624

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	7.782		0.841	3.00	0.259	pCi/L	106	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	90.8		40 - 110
Y Carrier	84.1		40 - 110

Lab Sample ID: LCSD 160-597624/3-A
Matrix: Water
Analysis Batch: 598611

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 597624

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	7.236		0.795	3.00	0.281	pCi/L	98	75 - 125	0.33	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	87.3		40 - 110
Y Carrier	88.2		40 - 110

Lab Sample ID: MB 160-598546/1-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598546

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1970	U	0.181	0.182	3.00	0.291	pCi/L	01/27/23 12:54	02/08/23 15:57	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	87.1		40 - 110	01/27/23 12:54	02/08/23 15:57	1
Y Carrier	87.1		40 - 110	01/27/23 12:54	02/08/23 15:57	1

Lab Sample ID: LCS 160-598546/2-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598546

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.37	7.382		0.816	3.00	0.271	pCi/L	100	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	85.4		40 - 110
Y Carrier	87.5		40 - 110

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCSD 160-598546/3-A
Matrix: Water
Analysis Batch: 599671

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 598546

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.37	7.433		0.819	3.00	0.316	pCi/L	101	75 - 125	0.03	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*88.3*		*40 - 110*
Y Carrier	*86.4*		*40 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-598717/1-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598717

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-27.93	U	147	147	500	270	pCi/L	01/31/23 12:11	02/01/23 21:31	1

Lab Sample ID: LCS 160-598717/2-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598717

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2110	1839		333	500	270	pCi/L	87	75 - 125		

Lab Sample ID: 570-124868-Q-1-B MS
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	123	U	2160	2177		373	500	286	pCi/L	95	60 - 140		

Lab Sample ID: 570-124392-Q-1-B DU
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	0.901	U		2.703	U	159	500	289	pCi/L			0.01	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-598078/1-A
Matrix: Water
Analysis Batch: 600266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598078

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1667		0.1389	0.1391	1.00	0.146	pCi/L	01/24/23 12:57	02/13/23 13:42	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: MB 160-598078/1-A
Matrix: Water
Analysis Batch: 600266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598078

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.1667		0.1389	0.1391	1.00	0.146	pCi/L	01/24/23 12:57	02/13/23 13:42	1

Lab Sample ID: LCS 160-598078/2-A
Matrix: Water
Analysis Batch: 600267

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598078

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.05		1.53	1.00	0.100	pCi/L	102	75 - 125		
Uranium-238			13.0	13.26		1.55	1.00	0.114	pCi/L	102	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*85.2*		*30 - 110*

Lab Sample ID: 570-124263-K-2-D DU
Matrix: Water
Analysis Batch: 600236

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 598078

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.0601	U		0.2092	U	0.206	1.00	0.250	pCi/L			0.35	1
Total Uranium	0.0601	U		0.2092	U	0.206	1.00	0.250	pCi/L			0.35	1

Rad

Filtration Batch: 597489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-U-2-F DU	Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 597606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	Filtration	
570-124263-K-2-D DU	Duplicate	Dissolved	Water	Filtration	

Prep Batch: 597616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	PrecSep-21	
MB 160-597616/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-597616/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
160-48612-D-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 597622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	PrecSep_0	
MB 160-597622/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-597622/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
160-48612-D-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 597624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	PrecSep-7	
MB 160-597624/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-597624/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-597624/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 597709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	Fill_Geo-0	
MB 160-597709/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597709/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-124252-U-1-F DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	Fill_Geo-0	597606
MB 160-597949/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597949/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123901-U-2-F DU	Duplicate	Dissolved	Water	Fill_Geo-0	597489

Prep Batch: 598000

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	PrecSep-21	597606
MB 160-598000/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-598000/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-598000/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Rad

Prep Batch: 598012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	PrecSep_0	597606
MB 160-598012/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-598012/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-598012/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 598078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	ExtChrom	597606
570-124262-1	BGBMP0003_20230114	Total/NA	Water	ExtChrom	
MB 160-598078/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-598078/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-124263-K-2-D DU	Duplicate	Dissolved	Water	ExtChrom	597606

Prep Batch: 598534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	Evaporation	597606
570-124262-1	BGBMP0003_20230114	Total/NA	Water	Evaporation	
MB 160-598534/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598534/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598534/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-124230-R-1-H MS	Matrix Spike	Total/NA	Water	Evaporation	
570-124230-R-1-I MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-124230-R-1-J DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 598546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Dissolved	Water	PrecSep-7	597606
MB 160-598546/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-598546/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-598546/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 598717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124262-1	BGBMP0003_20230114	Total/NA	Water	LSC_Dist_Susp	
MB 160-598717/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-598717/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-124868-Q-1-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-124392-Q-1-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Client Sample ID: BGBMP0003_20230114

Date Collected: 01/15/23 08:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124262-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Evaporation			179.99 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Dissolved	Analysis	900.0		1	1.0 mL	1.0 mL	600138	02/13/23 18:38	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			199.99 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	600138	02/13/23 18:37	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597949	01/23/23 15:17	JML	EET SL
Dissolved	Analysis	901.1		1			599623	02/08/23 12:00	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597709	01/20/23 14:22	JML	EET SL
Total/NA	Analysis	901.1		1			601095	02/21/23 04:40	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep-21			753.94 mL	1.0 g	598000	01/24/23 10:22	DJP	EET SL
Dissolved	Analysis	903.0		1			600464	02/15/23 10:13	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			745.73 mL	1.0 g	597616	01/20/23 12:30	DJP	EET SL
Total/NA	Analysis	903.0		1			600139	02/13/23 15:30	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep_0			753.94 mL	1.0 g	598012	01/24/23 10:38	DJP	EET SL
Dissolved	Analysis	904.0		1			598849	01/31/23 12:26	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			745.73 mL	1.0 g	597622	01/20/23 12:59	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	598283	01/26/23 12:22	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	PrecSep-7			499.19 mL	1.0 g	598546	01/27/23 12:54	DJP	EET SL
Dissolved	Analysis	905		1			599762	02/08/23 16:07	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep-7			503.01 mL	1.0 g	597624	01/20/23 13:08	DJP	EET SL
Total/NA	Analysis	905		1			598613	01/30/23 17:22	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			101.60 mL	1.0 g	598717	01/31/23 12:11	SEH	EET SL
Total/NA	Analysis	906.0		1			599486	02/01/23 23:47	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	ExtChrom			298.74 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Dissolved	Analysis	A-01-R		1			600229	02/13/23 13:51	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			296.43 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Total/NA	Analysis	A-01-R		1			600227	02/13/23 13:51	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124262-5
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124262-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124262-1	BGBMP0003_20230114	Water	01/15/23 08:00	01/17/23 18:25

124262

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program | | DW | | NPDES | | RCRA ☐ Other

TestAmerica service unit COC to be performed in accordance with the attached Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich and its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-17-23	COC No:
Haley & Aldrich Inc.	Tel/Fax: (620) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below ____			
(619) 280-9415 FAX	☐ 2 weeks			
H&A Project Number 129095-010-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40 CS-137 (E901.0 or E901.1), Total Combined Radium 226 & 228 Sr-90 (E903.0/E903, E904, E905) (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0) K-40 CS-137 (E901.0 or E901.1)' Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904 E905) (Total Recoverable)	SO4, Fluoride, Nitrate-N Nitrite-N (E300)	Perchlorate (E314 0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8 Ag, Al, As, Ba, Be, Cd, Cr Cu, Fe Mn, Ni, Pb Se Sb Tl; Method 200.7, B Zn (Total Dissolved)	Method 200.8 Ag, Al, As, Ba Be, Cd, Cr Cu Fe Mn, Ni, Pb Se Sb, Tl; Method 200.7, B, Zn (Total Recoverable)	LL Mercury total recoverable (E1631)	LL Mercury, dissolved (E1631)	Trichloroethene (E624 1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1 250mL Poly	1 250mL Amber	1-250mL Poly	1 250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	Field Staff Notes: Must fill TSS to the top For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here
BGBMP0003_20230114	01/15/23	0800	G	WM	2	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_			TB	WM	3	N	N															x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH, 6= Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	6		

570-124262 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
| | Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: SHA	Date/Time: 01/17/23/1245	Received by: EC	Date/Time: 1/17/23 1245
Relinquished by:	Company: EC	Date/Time: 1/17/23/1825	Received by:	Date/Time: 1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.9|1.9 sc11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2/23/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124262-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N None
O AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP00003_20230114 (570-124262-1)	1/15/23	08 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/23/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204495.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-124262-5
Address: 13715 Rider Trail North,	Due Date Requested: 2/21/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PrecSep_21 Radium-226	904.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP00003_20230114 (570-124262-1)	1/15/23	08:00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date: 1/18/23	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	01/18/23 12:40	EC	FEDEX		
FEDEX			Brianna Sharkey-Gonzalez	1/19/23 9:00AM	ETASTL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/23/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124262-5

Login Number: 124262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124262-5

Login Number: 124262
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/19/23 11:16 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/3/2023 7:07:26 AM Revision 1

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124263-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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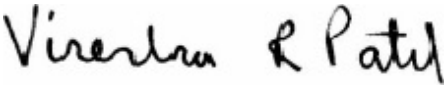
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
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(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-1

Qualifiers

Metals

Qualifier	Qualifier Description
BA	Relative percent difference out of control
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124263-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124263-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 1/23/2023. The report (revision 1) is being revised due to: The metals reporting was adjusted to report all elements by EPA 200.8..

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2º C and 2.1º C.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-296798 and analytical batch 570-297030 contained Lead above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The method blank for preparation batch 570-297278 and analytical batch 570-297371 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The method blank for preparation batch 570-297278 and analytical batch 570-297373 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for preparation batch 570-297319 and analytical batch 570-297473 were outside control limits for Iron and Manganese. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPSW001IE01_20230114 (570-124263-1) and A1BPSW0001_20230114 (570-124263-2). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-1

Client Sample ID: EPSW001IE01_20230114 — Lab Sample ID: 570-124263-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1.0		1.0	0.24	mg/L	1		300.0	Total/NA
Arsenic	3.5		1.0	0.16	ug/L	1		200.8	Total Recoverable
Cadmium	1.0		1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	22		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	17		1.0	0.12	ug/L	1		200.8	Total Recoverable
Selenium	3.8		2.0	0.52	ug/L	1		200.8	Total Recoverable
Iron	13000		20	3.7	ug/L	1		200.8	Total Recoverable
Zinc	110		20	2.8	ug/L	1		200.8	Total Recoverable
Manganese	1900		1.0	0.41	ug/L	1		200.8	Total Recoverable
Arsenic	0.76	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	1.8	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Lead	0.62	J,DX BU MB	1.0	0.12	ug/L	1		200.8	Dissolved
Iron	530	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	9.1	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Total Suspended Solids	390		20	17	mg/L	1		SM 2540D	Total/NA

Client Sample ID: A1BPSW0001_20230114 — Lab Sample ID: 570-124263-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1.8		1.0	0.24	mg/L	1		300.0	Total/NA
Arsenic	0.94	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Copper	3.1		2.0	0.32	ug/L	1		200.8	Total Recoverable
Lead	1.2		1.0	0.12	ug/L	1		200.8	Total Recoverable
Iron	750		20	3.7	ug/L	1		200.8	Total Recoverable
Zinc	7.9	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Manganese	34		1.0	0.41	ug/L	1		200.8	Total Recoverable
Arsenic	0.70	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	1.8	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	66	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	0.83	J,DX BU	1.0	0.41	ug/L	1		200.8	Dissolved
Total Suspended Solids	32		3.3	2.8	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPSW001IE01_20230114
Date Collected: 01/14/23 13:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.0		1.0	0.24	mg/L			01/20/23 13:30	1

Client Sample ID: A1BPSW0001_20230114
Date Collected: 01/14/23 14:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.8		1.0	0.24	mg/L			01/20/23 13:48	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPSW001IE01_20230114
Date Collected: 01/14/23 13:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**3.5**		1.0	0.16	ug/L		01/20/23 06:26	01/20/23 10:34	1
Cadmium	**1.0**		1.0	0.13	ug/L		01/20/23 06:26	01/20/23 10:34	1
Copper	**22**		2.0	0.32	ug/L		01/20/23 06:26	01/20/23 10:34	1
Lead	**17**		1.0	0.12	ug/L		01/20/23 06:26	01/20/23 10:34	1
Selenium	**3.8**		2.0	0.52	ug/L		01/20/23 06:26	01/20/23 10:34	1
Iron	**13000**		20	3.7	ug/L		01/20/23 06:26	01/20/23 10:34	1
Zinc	**110**		20	2.8	ug/L		01/20/23 06:26	01/20/23 10:34	1
Manganese	**1900**		1.0	0.41	ug/L		01/20/23 06:26	01/20/23 10:34	1

Client Sample ID: A1BPSW0001_20230114
Date Collected: 01/14/23 14:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.94**	**J,DX**	1.0	0.16	ug/L		01/20/23 08:34	01/20/23 13:35	1
Cadmium	ND		1.0	0.13	ug/L		01/20/23 08:34	01/20/23 13:35	1
Copper	**3.1**		2.0	0.32	ug/L		01/20/23 08:34	01/20/23 13:35	1
Lead	**1.2**		1.0	0.12	ug/L		01/20/23 08:34	01/20/23 13:35	1
Selenium	ND		2.0	0.52	ug/L		01/20/23 08:34	01/20/23 13:35	1
Iron	**750**		20	3.7	ug/L		01/20/23 08:34	01/20/23 13:35	1
Zinc	**7.9**	**J,DX**	20	2.8	ug/L		01/20/23 08:34	01/20/23 13:35	1
Manganese	**34**		1.0	0.41	ug/L		01/20/23 08:34	01/20/23 13:35	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPSW001IE01_20230114
Date Collected: 01/14/23 13:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.76**	**J,DX BU**	1.0	0.16	ug/L			01/1U/23 0U:26	1
Cadmium	ND	BZ	1.0	0.13	ug/L			01/1U/23 0U:26	1
Copper	**1.8**	**J,DX BU**	2.0	0.32	ug/L			01/1U/23 0U:26	1
Lead	**0.62**	**J,DX BU MB**	1.0	0.12	ug/L			01/1U/23 0U:26	1
Selenium	ND	BZ	2.0	0.52	ug/L			01/1U/23 0U:26	1
Iron	**530**	**BU**	20	3.7	ug/L			01/1U/23 0U:26	1
9inc	ND	BZ	20	2.8	ug/L			01/1U/23 0U:26	1
Manganese	**9.1**	**BU**	1.0	0.41	ug/L			01/1U/23 0U:26	1

Client Sample ID: A1BPSW0001_20230114
Date Collected: 01/14/23 14:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.70**	**J,DX BU**	1.0	0.16	ug/L			01/1U/23 0U:24	1
Cadmium	ND	BZ	1.0	0.13	ug/L			01/1U/23 0U:24	1
Copper	**1.8**	**J,DX BU**	2.0	0.32	ug/L			01/1U/23 0U:24	1
Lead	ND	BZ	1.0	0.12	ug/L			01/1U/23 0U:24	1
Selenium	ND	BZ	2.0	0.52	ug/L			01/1U/23 0U:24	1
Iron	**66**	**BU**	20	3.7	ug/L			01/1U/23 0U:24	1
9inc	ND	BZ	20	2.8	ug/L			01/1U/23 0U:24	1
Manganese	**0.83**	**J,DX BU**	1.0	0.41	ug/L			01/1U/23 0U:24	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-1

General Chemistry

Client Sample ID: EPSW001IE01_20230114
Date Collected: 01/14/23 13:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	390		20	17	mg/L			01/18/23 12:03	1

Client Sample ID: A1BPSW0001_20230114
Date Collected: 01/14/23 14:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	32		3.3	2.8	mg/L			01/18/23 12:08	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-297259/5
Matrix: Water
Analysis Batch: 297259

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			01/20/23 04:18	1

Lab Sample ID: LCS 570-297259/6
Matrix: Water
Analysis Batch: 297259

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	50.1		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-297259/7
Matrix: Water
Analysis Batch: 297259

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	50.0	50.0		mg/L		100	90 - 110	0	15

Method: 300.0 - Anions, Ion Chromatography - DL

Lab Sample ID: 570-124778-N-2 MS
Matrix: Water
Analysis Batch: 297259

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate - DL	110		50.0	157		mg/L		94	80 - 120

Lab Sample ID: 570-124778-N-2 MSD
Matrix: Water
Analysis Batch: 297259

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate - DL	110		50.0	157		mg/L		95	80 - 120	0	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-297278/1-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L		01/20/23 06:26	01/20/23 10:03	1
Cadmium	ND		1.0	0.13	ug/L		01/20/23 06:26	01/20/23 10:03	1
Copper	ND		2.0	0.32	ug/L		01/20/23 06:26	01/20/23 10:03	1
Lead	ND		1.0	0.12	ug/L		01/20/23 06:26	01/20/23 10:03	1
Selenium	ND		2.0	0.52	ug/L		01/20/23 06:26	01/20/23 10:03	1
Iron	6.36	J,DX	20	3.7	ug/L		01/20/23 06:26	01/20/23 10:03	1
Zinc	ND		20	2.8	ug/L		01/20/23 06:26	01/20/23 10:03	1
Manganese	ND		1.0	0.41	ug/L		01/20/23 06:26	01/20/23 10:03	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-297278/2-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	81.9		ug/L		102	85 - 115
Cadmium	80.0	81.5		ug/L		102	85 - 115
Copper	80.0	84.2		ug/L		105	85 - 115
Lead	80.0	80.5		ug/L		101	85 - 115
Selenium	80.0	82.1		ug/L		103	85 - 115
Iron	800	839		ug/L		105	85 - 115
Zinc	80.0	82.3		ug/L		103	85 - 115
Manganese	80.0	83.5		ug/L		104	85 - 115

Lab Sample ID: LCSD 570-297278/3-A
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	80.0	81.3		ug/L		102	85 - 115	1	20
Cadmium	80.0	81.5		ug/L		102	85 - 115	0	20
Copper	80.0	82.6		ug/L		103	85 - 115	2	20
Lead	80.0	81.5		ug/L		102	85 - 115	1	20
Selenium	80.0	81.9		ug/L		102	85 - 115	0	20
Iron	800	826		ug/L		103	85 - 115	2	20
Zinc	80.0	82.9		ug/L		104	85 - 115	1	20
Manganese	80.0	82.4		ug/L		103	85 - 115	1	20

Lab Sample ID: 570-124392-F-1-H MS
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	1.8		80.0	82.5		ug/L		101	80 - 120
Cadmium	ND		80.0	82.4		ug/L		103	80 - 120
Copper	4.9		80.0	89.7		ug/L		106	80 - 120
Lead	0.85	J,DX	80.0	81.9		ug/L		101	80 - 120
Selenium	ND		80.0	79.3		ug/L		99	80 - 120
Iron	780	MB	800	1650		ug/L		108	80 - 120
Zinc	7.1	J,DX	80.0	90.3		ug/L		104	80 - 120
Manganese	19		80.0	103		ug/L		106	80 - 120

Lab Sample ID: 570-124392-F-1-I MSD
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	1.8		80.0	83.4		ug/L		102	80 - 120	1	20
Cadmium	ND		80.0	81.5		ug/L		102	80 - 120	1	20
Copper	4.9		80.0	88.8		ug/L		105	80 - 120	1	20
Lead	0.85	J,DX	80.0	81.4		ug/L		101	80 - 120	1	20
Selenium	ND		80.0	79.9		ug/L		100	80 - 120	1	20
Iron	780	MB	800	1710		ug/L		116	80 - 120	3	20
Zinc	7.1	J,DX	80.0	89.6		ug/L		103	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124392-F-1-I MSD
Matrix: Water
Analysis Batch: 297371

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 297278

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	19		80.0	102		ug/L		104	80 - 120	1	20

Lab Sample ID: MB 570-297319/1-A
Matrix: Water
Analysis Batch: 297473

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L		01/20/23 08:34	01/20/23 13:28	1
Cadmium	ND		1.0	0.13	ug/L		01/20/23 08:34	01/20/23 13:28	1
Copper	ND		2.0	0.32	ug/L		01/20/23 08:34	01/20/23 13:28	1
Lead	ND		1.0	0.12	ug/L		01/20/23 08:34	01/20/23 13:28	1
Selenium	ND		2.0	0.52	ug/L		01/20/23 08:34	01/20/23 13:28	1
Iron	ND		20	3.7	ug/L		01/20/23 08:34	01/20/23 13:28	1
Zinc	ND		20	2.8	ug/L		01/20/23 08:34	01/20/23 13:28	1
Manganese	ND		1.0	0.41	ug/L		01/20/23 08:34	01/20/23 13:28	1

Lab Sample ID: LCS 570-297319/2-A
Matrix: Water
Analysis Batch: 297473

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	82.0		ug/L		102	85 - 115
Cadmium	80.0	82.6		ug/L		103	85 - 115
Copper	80.0	85.6		ug/L		107	85 - 115
Lead	80.0	82.2		ug/L		103	85 - 115
Selenium	80.0	81.6		ug/L		102	85 - 115
Iron	800	875		ug/L		109	85 - 115
Zinc	80.0	82.9		ug/L		104	85 - 115
Manganese	80.0	86.1		ug/L		108	85 - 115

Lab Sample ID: LCSD 570-297319/3-A
Matrix: Water
Analysis Batch: 297473

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	80.0	81.9		ug/L		102	85 - 115	0	20
Cadmium	80.0	82.0		ug/L		103	85 - 115	1	20
Copper	80.0	86.1		ug/L		108	85 - 115	1	20
Lead	80.0	84.0		ug/L		105	85 - 115	2	20
Selenium	80.0	83.3		ug/L		104	85 - 115	2	20
Iron	800	890		ug/L		111	85 - 115	2	20
Zinc	80.0	82.8		ug/L		104	85 - 115	0	20
Manganese	80.0	90.9		ug/L		114	85 - 115	5	20

Lab Sample ID: 570-124263-2 MS
Matrix: Water
Analysis Batch: 297473

Client Sample ID: A1BPSW0001_20230114
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.94	J,DX	80.0	81.4		ug/L		101	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-124263-2 MS
Matrix: Water
Analysis Batch: 297473

Client Sample ID: A1BPSW0001_20230114
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	82.5		ug/L		103	80 - 120
Copper	3.1		80.0	88.9		ug/L		107	80 - 120
Lead	1.2		80.0	82.6		ug/L		102	80 - 120
Selenium	ND		80.0	80.5		ug/L		101	80 - 120
Iron	750		800	1890	LM	ug/L		142	80 - 120
Zinc	7.9	J,DX	80.0	91.2		ug/L		104	80 - 120
Manganese	34		80.0	121		ug/L		109	80 - 120

Lab Sample ID: 570-124263-2 MSD
Matrix: Water
Analysis Batch: 297473

Client Sample ID: A1BPSW0001_20230114
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.94	J,DX	80.0	80.1		ug/L		99	80 - 120	2	20
Cadmium	ND		80.0	81.7		ug/L		102	80 - 120	1	20
Copper	3.1		80.0	89.1		ug/L		107	80 - 120	0	20
Lead	1.2		80.0	84.5		ug/L		104	80 - 120	2	20
Selenium	ND		80.0	77.9		ug/L		97	80 - 120	3	20
Iron	750		800	3150	LM BA	ug/L		300	80 - 120	50	20
Zinc	7.9	J,DX	80.0	93.5		ug/L		107	80 - 120	3	20
Manganese	34		80.0	131	LM	ug/L		121	80 - 120	8	20

Lab Sample ID: 570-124219-A-9-B MS
Matrix: Water
Analysis Batch: 297030

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.73	J,DX	80.0	74.0		ug/L		92	80 - 120
Cadmium	ND		80.0	70.0		ug/L		88	80 - 120
Copper	2.5		80.0	75.0		ug/L		91	80 - 120
Lead	0.21	J,DX MB	80.0	71.9		ug/L		90	80 - 120
Selenium	ND		80.0	71.6		ug/L		90	80 - 120
Iron	190		800	884		ug/L		87	80 - 120
Zinc	6.4	J,DX	80.0	77.4		ug/L		89	80 - 120
Manganese	3.1		80.0	74.8		ug/L		90	80 - 120

Lab Sample ID: 570-124219-A-9-C MSD
Matrix: Water
Analysis Batch: 297030

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.73	J,DX	80.0	74.3		ug/L		92	80 - 120	0	20
Cadmium	ND		80.0	71.8		ug/L		90	80 - 120	3	20
Copper	2.5		80.0	76.2		ug/L		92	80 - 120	2	20
Lead	0.21	J,DX MB	80.0	74.2		ug/L		92	80 - 120	3	20
Selenium	ND		80.0	72.2		ug/L		90	80 - 120	1	20
Iron	190		800	896		ug/L		88	80 - 120	1	20
Zinc	6.4	J,DX	80.0	77.0		ug/L		88	80 - 120	0	20
Manganese	3.1		80.0	76.7		ug/L		92	80 - 120	2	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-296798/1-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L			01/19/23 10:31	1
Cadmium	ND		1.0	0.13	ug/L			01/19/23 10:31	1
Copper	ND		2.0	0.32	ug/L			01/19/23 10:31	1
Lead	0.167	J,DX	1.0	0.12	ug/L			01/19/23 10:31	1
Selenium	ND		2.0	0.52	ug/L			01/19/23 10:31	1
Iron	ND		20	3.7	ug/L			01/19/23 10:31	1
Zinc	ND		20	2.8	ug/L			01/19/23 10:31	1
Manganese	ND		1.0	0.41	ug/L			01/19/23 10:31	1

Lab Sample ID: LCS 570-296798/2-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	74.4		ug/L		93	85 - 115
Cadmium	80.0	74.3		ug/L		93	85 - 115
Copper	80.0	74.4		ug/L		93	85 - 115
Lead	80.0	74.0		ug/L		93	85 - 115
Selenium	80.0	72.8		ug/L		91	85 - 115
Iron	800	767		ug/L		96	85 - 115
Zinc	80.0	74.2		ug/L		93	85 - 115
Manganese	80.0	75.0		ug/L		94	85 - 115

Lab Sample ID: LCSD 570-296798/3-A
Matrix: Water
Analysis Batch: 297048

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	80.0	74.3		ug/L		93	85 - 115	0	20
Cadmium	80.0	74.2		ug/L		93	85 - 115	0	20
Copper	80.0	74.8		ug/L		93	85 - 115	0	20
Lead	80.0	76.2		ug/L		95	85 - 115	3	20
Selenium	80.0	73.5		ug/L		92	85 - 115	1	20
Iron	800	772		ug/L		97	85 - 115	1	20
Zinc	80.0	74.3		ug/L		93	85 - 115	0	20
Manganese	80.0	75.5		ug/L		94	85 - 115	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-296761/1
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/18/23 12:02	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 570-296761/2
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	101		mg/L		101	77 - 116

Lab Sample ID: LCSD 570-296761/3
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	99.0		mg/L		99	77 - 116	2	10

Lab Sample ID: 570-124511-F-1 DU
Matrix: Water
Analysis Batch: 296761

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	120		110		mg/L		9	10

Lab Sample ID: MB 570-296763/1
Matrix: Water
Analysis Batch: 296763

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			01/18/23 12:08	1

Lab Sample ID: LCS 570-296763/2
Matrix: Water
Analysis Batch: 296763

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	109		mg/L		109	77 - 116

Lab Sample ID: LCSD 570-296763/3
Matrix: Water
Analysis Batch: 296763

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	110		mg/L		110	77 - 116	1	10

Lab Sample ID: 570-124263-2 DU
Matrix: Water
Analysis Batch: 296763

Client Sample ID: A1BPSW0001_20230114
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	32		30.0		mg/L		6	10

HPLC/IC

Analysis Batch: 297259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Total/NA	Water	300.0	
570-124263-2	A1BPSW0001_20230114	Total/NA	Water	300.0	
MB 570-297259/5	Method Blank	Total/NA	Water	300.0	
LCS 570-297259/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-297259/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-124778-N-2 MS - DL	Matrix Spike	Total/NA	Water	300.0	
570-124778-N-2 MSD - DL	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Filtration Batch: 296798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Dissolved	Water	Filtration	
570-124263-2	A1BPSW0001_20230114	Dissolved	Water	Filtration	
MB 570-296798/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124219-A-9-B MS	Matrix Spike	Dissolved	Water	Filtration	
570-124219-A-9-C MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 297030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Dissolved	Water	200.8	296798
570-124263-2	A1BPSW0001_20230114	Dissolved	Water	200.8	296798
570-124219-A-9-B MS	Matrix Spike	Dissolved	Water	200.8	296798
570-124219-A-9-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	296798

Analysis Batch: 297048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296798/1-A	Method Blank	Dissolved	Water	200.8	296798
LCS 570-296798/2-A	Lab Control Sample	Dissolved	Water	200.8	296798
LCSD 570-296798/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	296798

Prep Batch: 297278

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Total Recoverable	Water	200.8	
MB 570-297278/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-297278/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-297278/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-124392-F-1-H MS	Matrix Spike	Total Recoverable	Water	200.8	
570-124392-F-1-I MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	

Prep Batch: 297319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-2	A1BPSW0001_20230114	Total Recoverable	Water	200.8	
MB 570-297319/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-297319/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-297319/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-124263-2 MS	A1BPSW0001_20230114	Total Recoverable	Water	200.8	
570-124263-2 MSD	A1BPSW0001_20230114	Total Recoverable	Water	200.8	

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-1

Metals

Analysis Batch: 297371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-297278/1-A	Method Blank	Total Recoverable	Water	200.8	297278
LCS 570-297278/2-A	Lab Control Sample	Total Recoverable	Water	200.8	297278
LCSD 570-297278/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	297278
570-124392-F-1-H MS	Matrix Spike	Total Recoverable	Water	200.8	297278
570-124392-F-1-I MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.8	297278

Analysis Batch: 297373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Total Recoverable	Water	200.8	297278

Analysis Batch: 297473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-2	A1BPSW0001_20230114	Total Recoverable	Water	200.8	297319
MB 570-297319/1-A	Method Blank	Total Recoverable	Water	200.8	297319
LCS 570-297319/2-A	Lab Control Sample	Total Recoverable	Water	200.8	297319
LCSD 570-297319/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	297319
570-124263-2 MS	A1BPSW0001_20230114	Total Recoverable	Water	200.8	297319
570-124263-2 MSD	A1BPSW0001_20230114	Total Recoverable	Water	200.8	297319

General Chemistry

Analysis Batch: 296761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Total/NA	Water	SM 2540D	
MB 570-296761/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-296761/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-296761/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-124511-F-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 296763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-2	A1BPSW0001_20230114	Total/NA	Water	SM 2540D	
MB 570-296763/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-296763/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-296763/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-124263-2 DU	A1BPSW0001_20230114	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-1

Client Sample ID: EPSW001IE01_20230114

Lab Sample ID: 570-124263-1

Date Collected: 01/14/23 13:00
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	297259	01/20/23 13:30	PS	EET CAL 4
	Instrument ID: IC15									
Dissolved	Filtration	Filtration			50 mL	50 mL	296798	01/18/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			297030	01/19/23 09:26	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	297278	01/20/23 06:26	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297373	01/20/23 10:34	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	50 mL	1000 mL	296761	01/18/23 12:03	BDH9	EET CAL 4
	Instrument ID: BAL62									

Client Sample ID: A1BPSW0001_20230114

Lab Sample ID: 570-124263-2

Date Collected: 01/14/23 14:00
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	297259	01/20/23 13:48	PS	EET CAL 4
	Instrument ID: IC15									
Dissolved	Filtration	Filtration			50 mL	50 mL	296798	01/18/23 13:28	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			297030	01/19/23 09:24	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	297319	01/20/23 08:34	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297473	01/20/23 13:35	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Analysis	SM 2540D		1	300 mL	1000 mL	296763	01/18/23 12:08	BDH9	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-23
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124263-1	EPSW001IE01_20230114	Water	01/14/23 13:00	01/17/23 18:25
570-124263-2	A1BPSW0001_20230114	Water	01/14/23 14:00	01/17/23 18:25

124263

Chain of Custody Record for
Haley & Aldrich, Inc Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES | | RCRA ☐ Other

Eurofins Calscience, Inc.

estAmerica se ices under th CoC shall be performe accorda c th t e &C ithin ela ket ser ce Agreement# 20 9-22 estAm ica by and ben en Hale & Aldrich c it ubs diaries and affilia a d e erica Labora ne Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact.	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS/MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta total dissolved (E900.0) Uranium (HASL-300 U Mod), K-40, CS-137 (E901 0 or E901 1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901 1)	SO4 (E300)	Method 200.8 As, Cd, Cu Pb, Se Method 200.7 Fe, Mn Zn (Total Dissolved)	Method 200.8 As, Cd Cu Pb, Se Method 200.7 Fe Mn Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
–	–	–	–					2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber				Field Staff Notes. Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_ 20230114	01/14/23	1300	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
A1BPSW0001_ 20230114	01/14/23	1400	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
DUP_			G	WM	1	Y	N		x	x	x		x	x	x	x	x				
Preservation Used: 1=Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

570-124263 Chain of Custody

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ___6___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com: Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C) Obs'd:____ Corr'd.____ Therm ID No.____

Relinquished by:	Company:	Date/Time:	Received by:		Date/Time:
[signature]	JHA	01/17/23/1245	[signature]	EC	1/17/23 1245
[signature]	EC	1/17/23/1825	[signature]		1/17/23 1825
			Received in Laboratory by:		

1.2|1.2 2.1|2.1 SCH

Form No CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 ERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124263-2
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230110 (570-124263-1)	1/14/23	13 00 Pacific		Water			X	X	2	
A1BPSW0001_20230110 (570-124263-2)	1/14/23	14 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Monday, January 30, 2023 9:27 AM
To: Virendra Patel
Subject: 200.8 Metals BMP Performance

EXTERNAL EMAIL*

Virendra,

Please revise any metals requested as 200.7 to 200.8 for the BMP Performance program starting from data collected October 1st, 2022.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124263-1

Login Number: 124263
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 1/25/2023 10:11:03 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124263-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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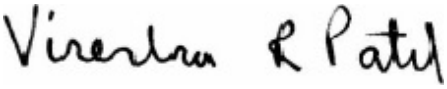
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
1/25/2023 10:11:03 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124263-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124263-2

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2º C and 2.1º C.

Metals
Method 1631E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for the following sample associated with analytical batch 580-416060 were outside control limits: (580-122334-A-10 MS) and (580-122334-A-10 MSD). The associated laboratory control sample (LCS) recovery met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-2

Client Sample ID: EPSW001IE01_20230114 — Lab Sample ID: 570-124263-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.14		0.0050	0.00079	ug/L	10		1631E	Total/NA
Mercury	0.0046		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: A1BPSW0001_20230114 — Lab Sample ID: 570-124263-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.015		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0064		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPSW001IE01_20230114
Date Collected: 01/14/23 13:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.14		0.0050	0.00079	ug/L			01/20/23 17:12	10

Client Sample ID: A1BPSW0001_20230114
Date Collected: 01/14/23 14:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.015		0.00050	0.000079	ug/L			01/23/23 18:57	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPSW001IE01_20230114
Date Collected: 01/14/23 13:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0046		0.00050	0.000079	ug/L			01/20/23 18:14	1

Client Sample ID: A1BPSW0001_20230114
Date Collected: 01/14/23 14:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0064		0.00050	0.000079	ug/L			01/20/23 18:18	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-416060/19
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:46	1

Lab Sample ID: MB 580-416060/20
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 12:50	1

Lab Sample ID: MB 580-416060/23
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 13:03	1

Lab Sample ID: MB 580-416060/24
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 13:07	1

Lab Sample ID: MB 580-416060/25
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 13:11	1

Lab Sample ID: MB 580-416060/26
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 13:15	1

Lab Sample ID: LCS 580-416060/29
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00449		ug/L		90	77 - 123		

Lab Sample ID: LCS 580-416060/33
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00472		ug/L		94	77 - 123		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: LCSD 580-416060/32
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00438		ug/L		88	77 - 123	2	24

Lab Sample ID: LCSD 580-416060/34
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00452		ug/L		90	77 - 123	4	24

Lab Sample ID: 570-124252-K-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.011		0.0150	0.0255		ug/L		99	71 - 125		

Lab Sample ID: 570-124252-K-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.011		0.0150	0.0259		ug/L		102	71 - 125	2	24

Lab Sample ID: 570-124263-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: EPSW001IE01_20230114
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.14		0.200	0.360		ug/L		109	71 - 125		

Lab Sample ID: 570-124263-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: EPSW001IE01_20230114
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.14		0.200	0.358		ug/L		108	71 - 125	1	24

Lab Sample ID: 580-122444-A-1 MS
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.0011		0.00500	0.00496		ug/L		76	71 - 125		

Lab Sample ID: 580-122444-A-1 MSD
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0011		0.00500	0.00496		ug/L		76	71 - 125	0	24

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-416134/41
Matrix: Water
Analysis Batch: 416134

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/23/23 17:38	1

Lab Sample ID: MB 580-416134/42
Matrix: Water
Analysis Batch: 416134

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/23/23 17:42	1

Lab Sample ID: MB 580-416134/43
Matrix: Water
Analysis Batch: 416134

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/23/23 17:46	1

Lab Sample ID: LCS 580-416134/47
Matrix: Water
Analysis Batch: 416134

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00518		ug/L		104	77 - 123		

Lab Sample ID: LCSD 580-416134/48
Matrix: Water
Analysis Batch: 416134

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00518		ug/L		104	77 - 123	0	24

Lab Sample ID: 320-96088-A-1 MS
Matrix: Water
Analysis Batch: 416134

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.023		0.0300	0.0522		ug/L		97	71 - 125		

Lab Sample ID: 320-96088-A-1 MSD
Matrix: Water
Analysis Batch: 416134

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.023		0.0300	0.0516		ug/L		95	71 - 125	1	24

Lab Sample ID: 580-122334-A-13 MS
Matrix: Water
Analysis Batch: 416134

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.000095	J,DX	0.0100	0.0101		ug/L		100	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-122334-A-13 MSD
Matrix: Water
Analysis Batch: 416134

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.000095	J,DX	0.0100	0.00991		ug/L		98	71 - 125	2	24

Lab Sample ID: MB 580-415853/1-A
Matrix: Water
Analysis Batch: 416060

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			01/20/23 14:46	1

Metals

Filtration Batch: 415853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Dissolved	Water	Filtration	
570-124263-2	A1BPSW0001_20230114	Dissolved	Water	Filtration	
MB 580-415853/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 416060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Dissolved	Water	1631E	415853
570-124263-1	EPSW001IE01_20230114	Total/NA	Water	1631E	
570-124263-2	A1BPSW0001_20230114	Dissolved	Water	1631E	415853
MB 580-415853/1-A	Method Blank	Dissolved	Water	1631E	415853
MB 580-416060/19	Method Blank	Total/NA	Water	1631E	
MB 580-416060/20	Method Blank	Total/NA	Water	1631E	
MB 580-416060/23	Method Blank	Total/NA	Water	1631E	
MB 580-416060/24	Method Blank	Total/NA	Water	1631E	
MB 580-416060/25	Method Blank	Total/NA	Water	1631E	
MB 580-416060/26	Method Blank	Total/NA	Water	1631E	
LCS 580-416060/29	Lab Control Sample	Total/NA	Water	1631E	
LCS 580-416060/33	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-416060/32	Lab Control Sample Dup	Total/NA	Water	1631E	
LCSD 580-416060/34	Lab Control Sample Dup	Total/NA	Water	1631E	
570-124252-K-1 MS	Matrix Spike	Total/NA	Water	1631E	
570-124252-K-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
570-124263-1 MS	EPSW001IE01_20230114	Total/NA	Water	1631E	
570-124263-1 MSD	EPSW001IE01_20230114	Total/NA	Water	1631E	
580-122444-A-1 MS	Matrix Spike	Total/NA	Water	1631E	
580-122444-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Analysis Batch: 416134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-2	A1BPSW0001_20230114	Total/NA	Water	1631E	
MB 580-416134/41	Method Blank	Total/NA	Water	1631E	
MB 580-416134/42	Method Blank	Total/NA	Water	1631E	
MB 580-416134/43	Method Blank	Total/NA	Water	1631E	
LCS 580-416134/47	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-416134/48	Lab Control Sample Dup	Total/NA	Water	1631E	
320-96088-A-1 MS	Matrix Spike	Total/NA	Water	1631E	
320-96088-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-122334-A-13 MS	Matrix Spike	Total/NA	Water	1631E	
580-122334-A-13 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-2

Client Sample ID: EPSW001IE01_20230114

Date Collected: 01/14/23 13:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415853	01/19/23 13:15	AJD	EET SEA
Dissolved	Analysis	1631E		1			416060	01/20/23 18:14	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		10			416060	01/20/23 17:12	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: A1BPSW0001_20230114

Date Collected: 01/14/23 14:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	415853	01/19/23 13:15	AJD	EET SEA
Dissolved	Analysis	1631E		1			416060	01/20/23 18:18	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			416134	01/23/23 18:57	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124263-2
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-08-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124263-1	EPSW001IE01_20230114	Water	01/14/23 13:00	01/17/23 18:25
570-124263-2	A1BPSW0001_20230114	Water	01/14/23 14:00	01/17/23 18:25

124263

Chain of Custody Record for
Haley & Aldrich, Inc Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES | RCRA ☐ Other

TestAmerica services under this CoC shall be performed in accordance with this Blanket Service Agreement# 2019-22 between TestAmerica and the Haley & Aldrich entity listed above and between Haley & Aldrich subsidiaries and affiliates and the TestAmerica Laboratories, Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1/17/2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta total dissolved (E900.0) Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As, Cd, Cu Pb, Se Method 200.7 Fe, Mn Zn (Total Dissolved)	Method 200.8 As, Cd Cu Pb, Se Method 200.7 Fe Mn Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trillium (E906.0)				Sample Specific Notes:
–	–	–	–					2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber				Field Staff Notes. Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230114	01/14/23	1300	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
A1BPSW0001_20230114	01/14/23	1400	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
DUP_			G	WM	1	Y	N		x	x	x		x	x	x	x	x				

570-124263 Chain of Custody

Preservation Used: 1=Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other

								1	1	1	1	1	1	4	2	1	1				

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C) Obs'd:____ Corr'd.____ Therm ID No.:____

Relinquished by:	Company:	Date/Time:	Received by:		Date/Time:
	JHA	01/17/23/1245		EC	1/17/23 1245
Relinquished by:	Company:	Date/Time:	Received by:		Date/Time:
	EC	1/17/23/1825			1/17/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.2|1.2 2.1|2.1 SCH

Form No CA-C-WI-045, Rev 1.2, dated 1/8/2016

1/25/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124263-2
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230110 (570-124263-1)	1/14/23	13 00 Pacific		Water			X	X	2	
A1BPSW0001_20230110 (570-124263-2)	1/14/23	14 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	1/18/23 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

1/25/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204480.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124263-2
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230110 (570-124263-1)	1/14/23	13:00 Pacific		Water			X	X	2	
A1BPSW0001_20230110 (570-124263-2)	1/14/23	14:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/18/23 1230			1/19/23 9:45	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: NA	Cooler Temperature(s) °C and Other Remarks: Ice Blue 0.0

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124263-2

Login Number: 124263
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124263-2

Login Number: 124263
List Number: 4
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 01/19/23 12:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/13/2023 3:51:33 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124263-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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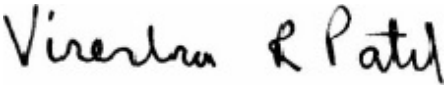
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
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(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-3

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124263-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124263-3

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2º C and 2.1º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: EPSW001IE01_20230114 (570-124263-1), A1BPSW0001_20230114 (570-124263-2), (CCV 320-651969/2) and (MB 320-651189/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

I ient H: a yin& A dir oh, . It hP
j co/nhH Beh: g one F BBLRIBMd yt r g3 j

Job ID: 570-12628C-C

Client Sample ID: EPSW001IE01_20230114 — Lab Sample ID: 570-124263-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1.2.C.7.u-j nl DD	0P0000018	J.DX q	0P00051	0P0000027	4FSR	1		181Cg	TolHyiSNd
1.2.C.7.u-j nl DL	0P000000xC	J.DX 3 g	0P00051	0P00000001x	4FSR	1		181Cg	TolHyiSNd
2.C.6.7.u-j nl DL	0P000000u6	J.DX	0P00051	0P0000022	4FSR	1		181Cg	TolHyiSNd
1.2.C.6.7.u-a9l DD	0P0000055	J.DX 3 g	0P00051	0P0000081	4FSR	1		181Cg	TolHyiSNd
1.2.C.8.7.u-a9l DD	0P00000xC	J.DX	0P00051	0P0000082	4FSR	1		181Cg	TolHyiSNd
1.2.C.7.u.x-a9l DD	0P00000u0	J.DX 3 g	0P00051	0P0000056	4FSR	1		181Cg	TolHyiSNd
1.2.C.6.7.u-a9l DL	0P0000065	J.DX 3 g	0P00051	0P0000081	4FSR	1		181Cg	TolHyiSNd
1.2.C.8.7.u-a9l DL	0P000007u	J.DX 3 g	0P00051	0P0000058	4FSR	1		181Cg	TolHyiSNd
1.2.C.7.u.x-a9l DL	0P00000087	J.DX 3 g	0P00051	0P000005u	4FSR	1		181Cg	TolHyiSNd
2.C.6.8.7.u-a9l DL	0P000008C	J.DX 3 g	0P00051	0P000005C	4FSR	1		181Cg	TolHyiSNd
1.2.C.6.8.7.u-apl DD	0P000C1	3 g	0P00051	0P00000u6	4FSR	1		181Cg	TolHyiSNd
1.2.C.6.8.7.u-apl DL	0P0001x	3 g	0P00051	0P00000C5	4FSR	1		181Cg	TolHyiSNd
1.2.C.6.7.u.x-apl DL	0P000007C	J.DX 3 g	0P00051	0P00000C7	4FSR	1		181Cg	TolHyiSNd
Ol DD	0P002x	3 g	0P00010	0P0000015	4FSR	1		181Cg	TolHyiSNd
Ol DL	0P000Cu	3 g	0P00010	0P0000015	4FSR	1		181Cg	TolHyiSNd
TolHyi TI DD	0P0000015	J.DX q 3 g	0P00010	0P000000C5	4FSR	1		181Cg	TolHyiSNd
TolHyi TI DL	0P000001x	J.DX q 3 g	0P00010	0P0000016	4FSR	1		181Cg	TolHyiSNd
TolHyi j nl DD	0P0000071	J.DX q 3 g	0P00051	0P0000027	4FSR	1		181Cg	TolHyiSNd
TolHyi j nl DL	0P000016	J.DX 3 g	0P00051	0P0000001x	4FSR	1		181Cg	TolHyiSNd
TolHyi a9l DD	0P00010	J.DX 3 g q	0P00051	0P0000056	4FSR	1		181Cg	TolHyiSNd
TolHyi a9l DL	0P00011	J.DX 3 g q	0P00051	0P000005C	4FSR	1		181Cg	TolHyiSNd
TolHyi apl DD	0P00086	3 g	0P00051	0P00000u6	4FSR	1		181Cg	TolHyiSNd
TolHyi apl DL	0P000C7	3 g	0P00051	0P00000C5	4FSR	1		181Cg	TolHyiSNd

Client Sample ID: A1BPSW0001_20230114 — Lab Sample ID: 570-124263-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2.C.7.u-TI DD	0P0000022	J.DX q	0P00010	0P0000065	4FSR	1		181Cg	TolHyiSNd
1.2.C.7.u-j nl DD	0P000012	J.DX	0P00051	0P000000C1	4FSR	1		181Cg	TolHyiSNd
1.2.C.7.u-j nl DL	0P000011	J.DX 3 g	0P00051	0P0000002x	4FSR	1		181Cg	TolHyiSNd
2.C.6.7.u-j nl DL	0P00001C	J.DX	0P00051	0P000000CC	4FSR	1		181Cg	TolHyiSNd
1.2.C.6.7.u-a9l DD	0P000016	J.DX 3 g	0P00051	0P000000CC	4FSR	1		181Cg	TolHyiSNd
1.2.C.8.7.u-a9l DD	0P000016	J.DX	0P00051	0P000000CC	4FSR	1		181Cg	TolHyiSNd
1.2.C.7.u.x-a9l DD	0P000011	J.DX 3 g	0P00051	0P000000C0	4FSR	1		181Cg	TolHyiSNd

T, es DnhHhHebt B4mmyc&r ons t oHe hi4r n cyr eh, nmeeyi HnsHons4ihsHP

E4coofets l yishent hn

Detection Summary

Client Sample ID: A1BPSW0001_20230114 (Continued) Lab Sample ID: 570-124263-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1.2.C.6.7.u-a 9l DL	0P000017	J.DX 3 g	0P000051	0P000000C5	4FSR	1		181Cg	TohyiSNd
1.2.C.8.7.u-a 9l DL	0P000018	J.DX 3 g	0P000051	0P000000C1	4FSR	1		181Cg	TohyiSNd
1.2.C.7.u.x-a 9l DL	0P000011	J.DX 3 g	0P000051	0P000000C6	4FSR	1		181Cg	TohyiSNd
2.C.6.8.7.u-a 9l DL	0P000012	J.DX 3 g	0P000051	0P000000C0	4FSR	1		181Cg	TohyiSNd
1.2.C.6.8.7.u-a pl DD	0P0000C2	J.DX 3 g	0P000051	0P0000016	4FSR	1		181Cg	TohyiSNd
1.2.C.6.8.7.u-a pl DL	0P00001u	J.DX 3 g	0P000051	0P00000086	4FSR	1		181Cg	TohyiSNd
1.2.C.6.7.u.x-a pl DL	0P0000088	J.DX 3 g	0P000051	0P0000008u	4FSR	1		181Cg	TohyiSNd
Ol DD	0P00027	3 g	0P00010	0P0000017	4FSR	1		181Cg	TohyiSNd
Ol DL	0P000020	J.DX q 3 g	0P00010	0P000000C7	4FSR	1		181Cg	TohyiSNd
Tohyi Tl DD	0P00000Cu	J.DX q 3 g	0P000010	0P00000065	4FSR	1		181Cg	TohyiSNd
Tohyi Tl DL	0P00000C0	J.DX q 3 g	0P000010	0P00000012	4FSR	1		181Cg	TohyiSNd
Tohyi j nl DD	0P000012	J.DX 3 g	0P000051	0P000000C1	4FSR	1		181Cg	TohyiSNd
Tohyi j nl DL	0P000026	J.DX q 3 g	0P000051	0P0000002x	4FSR	1		181Cg	TohyiSNd
Tohyi a 9l DD	0P00006C	J.DX 3 g	0P000051	0P000000C0	4FSR	1		181Cg	TohyiSNd
Tohyi a 9l DL	0P000082	J.DX 3 g q	0P000051	0P000000C0	4FSR	1		181Cg	TohyiSNd
Tohyi a pl DD	0P000086	J.DX 3 g	0P000051	0P0000016	4FSR	1		181Cg	TohyiSNd
Tohyi a pl DL	0P0000C5	J.DX 3 g	0P000051	0P00000086	4FSR	1		181Cg	TohyiSNd
2.C.7.u-Tl DL - Md	0P000002C	J.DX	0P000010	0P000000C7	4FSR	1		181Cg	TohyiSNd

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPS_ 001IE01W20230114
Date Collected: 01/14/23 13:00
Date Recei8ed: 01/17/23 1v:25

Lab Sample ID: 570-124263-1
Matrix: _ ater

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000035	ug/L		02/02/23 06:24	02/05/23 22:32	1
1,2,3,7,v-PeCDD	0.0000016	J,DX q	0.000051	0.00000027	ug/L		02/02/23 06:24	02/05/23 22:32	1
1,2,3,7,v-PeCDF	0.00000093	J,DX MB	0.000051	0.00000019	ug/L		02/02/23 06:24	02/05/23 22:32	1
2,3,4,7,v-PeCDF	0.000000v4	J,DX	0.000051	0.00000022	ug/L		02/02/23 06:24	02/05/23 22:32	1
1,2,3,4,7,v-HxCDD	0.0000055	J,DX MB	0.000051	0.00000061	ug/L		02/02/23 06:24	02/05/23 22:32	1
1,2,3,6,7,v-HxCDD	0.0000093	J,DX	0.000051	0.00000062	ug/L		02/02/23 06:24	02/05/23 22:32	1
1,2,3,7,v,9-HxCDD	0.00000v0	J,DX MB	0.000051	0.00000054	ug/L		02/02/23 06:24	02/05/23 22:32	1
1,2,3,4,7,v-HxCDF	0.0000045	J,DX MB	0.000051	0.00000061	ug/L		02/02/23 06:24	02/05/23 22:32	1
1,2,3,6,7,v-HxCDF	0.000007v	J,DX MB	0.000051	0.00000056	ug/L		02/02/23 06:24	02/05/23 22:32	1
1,2,3,7,v,9-HxCDF	0.00000067	J,DX MB	0.000051	0.00000058	ug/L		02/02/23 06:24	02/05/23 22:32	1
2,3,4,6,7,v-HxCDF	0.0000063	J,DX MB	0.000051	0.00000053	ug/L		02/02/23 06:24	02/05/23 22:32	1
1,2,3,4,6,7,v-HpCDD	0.00031	MB	0.000051	0.0000084	ug/L		02/02/23 06:24	02/05/23 22:32	1
1,2,3,4,6,7,v-HpCDF	0.00019	MB	0.000051	0.0000035	ug/L		02/02/23 06:24	02/05/23 22:32	1
1,2,3,4,7,v,9-HpCDF	0.0000073	J,DX MB	0.000051	0.0000037	ug/L		02/02/23 06:24	02/05/23 22:32	1
OCDD	0.0029	MB	0.00010	0.000015	ug/L		02/02/23 06:24	02/05/23 22:32	1
OCDF	0.0003v	MB	0.00010	0.0000015	ug/L		02/02/23 06:24	02/05/23 22:32	1
Total TCDD	0.0000015	J,DX q MB	0.000010	0.00000035	ug/L		02/02/23 06:24	02/05/23 22:32	1
Total TCDF	0.0000019	J,DX q MB	0.000010	0.00000014	ug/L		02/02/23 06:24	02/05/23 22:32	1
Total PeCDD	0.0000071	J,DX q MB	0.000051	0.00000027	ug/L		02/02/23 06:24	02/05/23 22:32	1
Total PeCDF	0.000014	J,DX MB	0.000051	0.00000019	ug/L		02/02/23 06:24	02/05/23 22:32	1
Total HxCDD	0.00010	J,DX MB q	0.000051	0.00000054	ug/L		02/02/23 06:24	02/05/23 22:32	1
Total HxCDF	0.00011	J,DX MB q	0.000051	0.00000053	ug/L		02/02/23 06:24	02/05/23 22:32	1
Total HpCDD	0.00064	MB	0.000051	0.0000084	ug/L		02/02/23 06:24	02/05/23 22:32	1
Total HpCDF	0.00037	MB	0.000051	0.0000035	ug/L		02/02/23 06:24	02/05/23 22:32	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*80*		*25 - 164*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-2,3,7,8-TCDF	*80*		*24 - 169*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-1,2,3,7,8-PeCDD	*82*		*25 - 181*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-1,2,3,7,8-PeCDF	*81*		*24 - 185*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-2,3,4,7,8-PeCDF	*80*		*21 - 178*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-1,2,3,4,7,8-HxCDD	*74*		*32 - 141*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-1,2,3,6,7,8-HxCDD	*80*		*28 - 130*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-1,2,3,4,7,8-HxCDF	*69*		*26 - 152*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-1,2,3,6,7,8-HxCDF	*79*		*26 - 123*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-1,2,3,7,8,9-HxCDF	*82*		*29 - 147*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-2,3,4,6,7,8-HxCDF	*81*		*28 - 136*	*02/02/23 06:24*	*02/05/23 22:32*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPS_ 001IE01W20230114
Date Collected: 01/14/23 13:00
Date Recei8ed: 01/17/23 1v:25

Lab Sample ID: 570-124263-1
Matrix: _ ater

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,4,6,7,8-HpCDD	*76*		*23 - 140*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*70*		*28 - 143*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*77*		*26 - 138*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-OCDD	*73*		*17 - 157*	*02/02/23 06:24*	*02/05/23 22:32*	*1*
13C-OCDF	*74*		*17 - 157*	*02/02/23 06:24*	*02/05/23 22:32*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*90*		*35 - 197*	*02/02/23 06:24*	*02/05/23 22:32*	*1*

Client Sample ID: A1BPS_ 0001W20230114
Date Collected: 01/14/23 14:00
Date Recei8ed: 01/17/23 1v:25

Lab Sample ID: 570-124263-2
Matrix: _ ater

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,v-TCDD	0.0000022	J,DX q	0.000010	0.00000045	ug/L		02/02/23 06:24	02/05/23 23:19	1
1,2,3,7,v-PeCDD	0.000012	J,DX	0.000051	0.00000031	ug/L		02/02/23 06:24	02/05/23 23:19	1
1,2,3,7,v-PeCDF	0.000011	J,DX MB	0.000051	0.00000029	ug/L		02/02/23 06:24	02/05/23 23:19	1
2,3,4,7,v-PeCDF	0.000013	J,DX	0.000051	0.00000033	ug/L		02/02/23 06:24	02/05/23 23:19	1
1,2,3,4,7,v-HxCDD	0.000014	J,DX MB	0.000051	0.00000033	ug/L		02/02/23 06:24	02/05/23 23:19	1
1,2,3,6,7,v-HxCDD	0.000014	J,DX	0.000051	0.00000033	ug/L		02/02/23 06:24	02/05/23 23:19	1
1,2,3,7,v,9-HxCDD	0.000011	J,DX MB	0.000051	0.00000030	ug/L		02/02/23 06:24	02/05/23 23:19	1
1,2,3,4,7,v-HxCDF	0.000017	J,DX MB	0.000051	0.00000035	ug/L		02/02/23 06:24	02/05/23 23:19	1
1,2,3,6,7,v-HxCDF	0.000016	J,DX MB	0.000051	0.00000031	ug/L		02/02/23 06:24	02/05/23 23:19	1
1,2,3,7,v,9-HxCDF	0.000011	J,DX MB	0.000051	0.00000034	ug/L		02/02/23 06:24	02/05/23 23:19	1
2,3,4,6,7,v-HxCDF	0.000012	J,DX MB	0.000051	0.00000030	ug/L		02/02/23 06:24	02/05/23 23:19	1
1,2,3,4,6,7,v-HpCDD	0.000032	J,DX MB	0.000051	0.0000014	ug/L		02/02/23 06:24	02/05/23 23:19	1
1,2,3,4,6,7,v-HpCDF	0.00001v	J,DX MB	0.000051	0.00000064	ug/L		02/02/23 06:24	02/05/23 23:19	1
1,2,3,4,7,v,9-HpCDF	0.0000066	J,DX MB	0.000051	0.00000068	ug/L		02/02/23 06:24	02/05/23 23:19	1
OCDD	0.00027	MB	0.00010	0.0000017	ug/L		02/02/23 06:24	02/05/23 23:19	1
OCDF	0.000020	J,DX q MB	0.00010	0.00000037	ug/L		02/02/23 06:24	02/05/23 23:19	1
Total TCDD	0.000003v	J,DX q MB	0.000010	0.00000045	ug/L		02/02/23 06:24	02/05/23 23:19	1
Total TCDF	0.0000030	J,DX q MB	0.000010	0.00000012	ug/L		02/02/23 06:24	02/05/23 23:19	1
Total PeCDD	0.000012	J,DX MB	0.000051	0.00000031	ug/L		02/02/23 06:24	02/05/23 23:19	1
Total PeCDF	0.000024	J,DX q MB	0.000051	0.00000029	ug/L		02/02/23 06:24	02/05/23 23:19	1
Total HxCDD	0.000043	J,DX MB	0.000051	0.00000030	ug/L		02/02/23 06:24	02/05/23 23:19	1
Total HxCDF	0.000062	J,DX MB q	0.000051	0.00000030	ug/L		02/02/23 06:24	02/05/23 23:19	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: A1BPS_ 0001W20230114
Date Collected: 01/14/23 14:00
Date Recei8ed: 01/17/23 1v:25

Lab Sample ID: 570-124263-2
Matrix: _ ater

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDD	0.000064	J,DX MB	0.000051	0.0000014	ug/L		02/02/23 06:24	02/05/23 23:19	1
Total HpCDF	0.000035	J,DX MB	0.000051	0.00000064	ug/L		02/02/23 06:24	02/05/23 23:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*65*		*25 - 164*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-2,3,7,8-TCDF	*65*		*24 - 169*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-1,2,3,7,8-PeCDD	*67*		*25 - 181*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-1,2,3,7,8-PeCDF	*66*		*24 - 185*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-2,3,4,7,8-PeCDF	*66*		*21 - 178*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-1,2,3,4,7,8-HxCDD	*62*		*32 - 141*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-1,2,3,6,7,8-HxCDD	*68*		*28 - 130*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-1,2,3,4,7,8-HxCDF	*56*		*26 - 152*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-1,2,3,6,7,8-HxCDF	*67*		*26 - 123*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-1,2,3,7,8,9-HxCDF	*66*		*29 - 147*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-2,3,4,6,7,8-HxCDF	*68*		*28 - 136*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*63*		*23 - 140*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*60*		*28 - 143*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*63*		*26 - 138*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-OCDD	*63*		*17 - 157*	*02/02/23 06:24*	*02/05/23 23:19*	*1*
13C-OCDF	*62*		*17 - 157*	*02/02/23 06:24*	*02/05/23 23:19*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*88*		*35 - 197*	*02/02/23 06:24*	*02/05/23 23:19*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: EPS_ 001IE01W20230114
Lab Sample ID: 570-124263-1
Date Collected: 01/14/23 13:00
Matrix: _ ater
Date Recei8ed: 01/17/23 1v:25

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.00000032	ug/L		02/02/23 06:24	02/06/23 17:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*82*		*24 - 169*	*02/02/23 06:24*	*02/06/23 17:16*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*107*		*35 - 197*	*02/02/23 06:24*	*02/06/23 17:16*	*1*

Client Sample ID: A1BPS_ 0001W20230114
Lab Sample ID: 570-124263-2
Date Collected: 01/14/23 14:00
Matrix: _ ater
Date Recei8ed: 01/17/23 1v:25

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,v-TCDF	**0.0000023**	**J,DX**	0.000010	0.00000037	ug/L		02/02/23 06:24	02/06/23 17:53	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*66*		*24 - 169*	*02/02/23 06:24*	*02/06/23 17:53*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*106*		*35 - 197*	*02/02/23 06:24*	*02/06/23 17:53*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-124263-1	EPSW001IE01_20230114	90
570-124263-1 - RA	EPSW001IE01_20230114	107
570-124263-2	A1BPSW0001_20230114	88
570-124263-2 - RA	A1BPSW0001_20230114	106
MB 320-651189/1-A	Method Blank	93
MB 320-651189/1-A - RA	Method Blank	107

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-651189/2-A	Lab Control Sample	90
LCSD 320-651189/3-A	Lab Control Sample Dup	92

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-124263-1	EPSW001IE01_20230114	80	80	82	81	80	74	80	69
570-124263-1 - RA	EPSW001IE01_20230114		82						
570-124263-2	A1BPSW0001_20230114	65	65	67	66	66	62	68	56
570-124263-2 - RA	A1BPSW0001_20230114		66						
MB 320-651189/1-A	Method Blank	60	61	58	57	56	46	55	45
MB 320-651189/1-A - RA	Method Blank		60						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-124263-1	EPSW001IE01_20230114	79	82	81	76	70	77	73	74
570-124263-1 - RA	EPSW001IE01_20230114								
570-124263-2	A1BPSW0001_20230114	67	66	68	63	60	63	63	62
570-124263-2 - RA	A1BPSW0001_20230114								
MB 320-651189/1-A	Method Blank	54	53	55	50	47	50	48	47
MB 320-651189/1-A - RA	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-651189/2-A	Lab Control Sample	73	71	78	76	76	75	80	69
LCSD 320-651189/3-A	Lab Control Sample Dup	77	76	78	79	72	68	75	63

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-651189/2-A	Lab Control Sample	81	78	81	77	73	77	78	78
LCSD 320-651189/3-A	Lab Control Sample Dup	75	82	82	79	69	79	80	79

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-3

TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2.C.7.T-Nl DD	u D		0P00010	0P0000053	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
1.2.C.7.T-j nl DD	u D		0P00050	0P0000024	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
1.2.C.7.T-j nl DL	0P000000941	J.Dx	0P00050	0P0000001T	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
2.C.3.7.T-j nl DL	u D		0P00050	0P0000020	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
1.2.C.3.7.T-apl DD	0P00000202	J.Dx 6	0P00050	0P000002C	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
1.2.C.9.7.T-apl DD	u D		0P00050	0P0000022	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
1.2.C.7.T.4-apl DD	0P000000425	J.Dx	0P00050	0P0000020	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
1.2.C.3.7.T-apl DL	0P000000701	J.Dx	0P00050	0P0000015	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
1.2.C.9.7.T-apl DL	0P000000C5T	J.Dx 6	0P00050	0P000001C	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
1.2.C.7.T.4-apl DL	0P000000933	J.Dx 6	0P00050	0P0000015	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
2.C.3.9.7.T-apl DL	0P0000003C1	J.Dx 6	0P00050	0P000001C	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
1.2.C.3.9.7.T-aql DD	0P00000145	J.Dx 6	0P00050	0P0000020T	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
1.2.C.3.9.7.T-aql DL	0P0000017T	J.Dx 6	0P00050	0P0000023	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
1.2.C.3.7.T.4-aql DL	0P000000754	J.Dx 6	0P00050	0P0000029	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
Ol DD	0P000010T	J.Dx	0P00010	0P0000039	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
Ol DL	0P00000209	J.Dx	0P00010	0P0000024	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
Nohyi Nl DD	0P000002C1	J.Dx	0P00010	0P0000053	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
Nohyi Nl DL	0P00000107	J.Dx	0P00010	0P000001C	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
Nohyi j nl DD	0P000000C74	J.Dx 6	0P00050	0P0000024	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
Nohyi j nl DL	0P000000941	J.Dx	0P00050	0P0000001T	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
Nohyi apl DD	0P00000245	J.Dx 6	0P00050	0P0000020	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
Nohyi apl DL	0P0000025C	J.Dx 6	0P00050	0P000001C	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
Nohyi aql DD	0P00000333	J.Dx 6	0P00050	0P0000020T	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1
Nohyi aql DL	0P00000253	J.Dx 6	0P00050	0P0000023	XFSR		02S02S2C 09:23	02S05S2C 15:C3	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*60*		*25 - 164*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-2,3,7,8-TCDF	*61*		*24 - 169*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,7,8-PeCDD	*58*		*25 - 181*	*02/02/23 06:24*	*02/05/23 15:34*	*1*
13C-1,2,3,7,8-PeCDF	*57*		*24 - 185*	*02/02/23 06:24*	*02/05/23 15:34*	*1*

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Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	56		21 - 178	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8-HxCDD	46		32 - 141	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,6,7,8-HxCDD	55		28 - 130	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8-HxCDF	45		26 - 152	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,6,7,8-HxCDF	54		26 - 123	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,7,8,9-HxCDF	53		29 - 147	02/02/23 06:24	02/05/23 15:34	1
13C-2,3,4,6,7,8-HxCDF	55		28 - 136	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,6,7,8-HpCDD	50		23 - 140	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,6,7,8-HpCDF	47		28 - 143	02/02/23 06:24	02/05/23 15:34	1
13C-1,2,3,4,7,8,9-HpCDF	50		26 - 138	02/02/23 06:24	02/05/23 15:34	1
13C-OCDD	48		17 - 157	02/02/23 06:24	02/05/23 15:34	1
13C-OCDF	47		17 - 157	02/02/23 06:24	02/05/23 15:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	93		35 - 197	02/02/23 06:24	02/05/23 15:34	1

Lab Sample ID: LCS 320-651189/2-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651189

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2.C.7.T-Nl DD			0P00200	0P00020T		XFSR		103	97 - 15T		
2.C.7.T-Nl DL			0P00200	0P00215		XFSR		107	75 - 15T		
1.2.C.7.T-j nl DD			0P00100	0P00101		XFSR		101	70 - 132		
1.2.C.7.T-j nl DL			0P00100	0P00100		XFSR		100	T0 - 1C3		
2.C.3.7.T-j nl DL			0P00100	0P00102		XFSR		102	9T - 190		
1.2.C.3.7.T-a pl DD			0P00100	0P00471		XFSR		47	70 - 193		
1.2.C.9.7.T-a pl DD			0P00100	0P010C		XFSR		10C	79 - 1C3		
1.2.C.7.T.4-a pl DD			0P00100	0P00044C		XFSR		44	93 - 192		
1.2.C.3.7.T-a pl DL			0P00100	0P00101		XFSR		101	72 - 1C3		
1.2.C.9.7.T-a pl DL			0P00100	0P00447		XFSR		100	T3 - 1C0		
1.2.C.7.T.4-a pl DL			0P00100	0P004T2		XFSR		4T	7T - 1C0		
2.C.3.9.7.T-a pl DL			0P00100	0P00101		XFSR		101	70 - 159		
1.2.C.3.9.7.T-a ql DD			0P00100	0P00100		XFSR		100	70 - 130		
1.2.C.3.9.7.T-a ql DL			0P00100	0P00102		XFSR		102	T2 - 122		
1.2.C.3.7.T.4-a ql DL			0P00100	0P00044C		XFSR		44	7T - 1CT		
Ol DD			0P00200	0P00200		XFSR		100	7T - 133		
Ol DL			0P00200	0P00207		XFSR		10C	9C - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	73		20 - 175
13C-2,3,7,8-TCDF	71		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	76		21 - 192
13C-2,3,4,7,8-PeCDF	76		13 - 328
13C-1,2,3,4,7,8-HxCDD	75		21 - 193
13C-1,2,3,6,7,8-HxCDD	80		25 - 163
13C-1,2,3,4,7,8-HxCDF	69		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-651189/2-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	81		21 - 159
13C-1,2,3,7,8,9-HxCDF	78		17 - 205
13C-2,3,4,6,7,8-HxCDF	81		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	77		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	73		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	77		20 - 186
13C-OCDD	78		13 - 199
13C-OCDF	78		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	90		31 - 191

Lab Sample ID: LCSD 320-651189/3-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651189

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2.C.7.T-NI DD			0P000200	0P000219		XFSR		10T	97 - 15T	C	50
2.C.7.T-NI DL			0P000200	0P000221		XFSR		110	75 - 15T	C	50
1.2.C.7.T-j nl DD			0P00100	0P00105		XFSR		105	70 - 132	3	50
1.2.C.7.T-j nl DL			0P00100	0P00103		XFSR		103	T0 - 1C3	3	50
2.C.3.7.T-j nl DL			0P00100	0P00109		XFSR		109	9T - 190	3	50
1.2.C.3.7.T-a pl DD			0P00100	0P00102		XFSR		102	70 - 193	5	50
1.2.C.9.7.T-a pl DD			0P00100	0P00107		XFSR		107	79 - 1C3	3	50
1.2.C.7.T.4-a pl DD			0P00100	0P00113		XFSR		113	93 - 192	13	50
1.2.C.3.7.T-a pl DL			0P00100	0P00109		XFSR		109	72 - 1C3	5	50
1.2.C.9.7.T-a pl DL			0P00100	0P0010C		XFSR		10C	T3 - 1C0	C	50
1.2.C.7.T.4-a pl DL			0P00100	0P0010C		XFSR		10C	7T - 1C0	3	50
2.C.3.9.7.T-a pl DL			0P00100	0P00103		XFSR		103	70 - 159	C	50
1.2.C.3.9.7.T-a ql DD			0P00100	0P00103		XFSR		103	70 - 130	3	50
1.2.C.3.9.7.T-a ql DL			0P00100	0P00109		XFSR		109	T2 - 122	3	50
1.2.C.3.7.T.4-a ql DL			0P00100	0P00103		XFSR		103	7T - 1CT	3	50
OI DD			0P00200	0P00207		XFSR		103	7T - 133	3	50
OI DL			0P00200	0P00219		XFSR		10T	9C - 170	3	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 175
13C-2,3,7,8-TCDF	76		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	79		21 - 192
13C-2,3,4,7,8-PeCDF	72		13 - 328
13C-1,2,3,4,7,8-HxCDD	68		21 - 193
13C-1,2,3,6,7,8-HxCDD	75		25 - 163
13C-1,2,3,4,7,8-HxCDF	63		19 - 202
13C-1,2,3,6,7,8-HxCDF	75		21 - 159
13C-1,2,3,7,8,9-HxCDF	82		17 - 205
13C-2,3,4,6,7,8-HxCDF	82		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	79		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-651189/3-A
Matrix: Water
Analysis Batch: 651907

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651189

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	69		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	80		13 - 199
13C-OCDF	79		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-651189/1-A
Matrix: Water
Analysis Batch: 651969

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651189

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2.C.7.T-Nl DL - Md	u D		0P00010	0P0000003 2	XFSR		02S02C 09:23	02S09C 12:33	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	60		24 - 169	02/02/23 06:24	02/06/23 12:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	107		35 - 197	02/02/23 06:24	02/06/23 12:44	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-3

Specialty Organics

Prep Batch: 651189

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1 - RA	EPSW001IE01_20230114	Total/NA	Water	1613B	
570-124263-1	EPSW001IE01_20230114	Total/NA	Water	1613B	
570-124263-2 - RA	A1BPSW0001_20230114	Total/NA	Water	1613B	
570-124263-2	A1BPSW0001_20230114	Total/NA	Water	1613B	
MB 320-651189/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-651189/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-651189/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-651189/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 651907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Total/NA	Water	1613B	651189
570-124263-2	A1BPSW0001_20230114	Total/NA	Water	1613B	651189
MB 320-651189/1-A	Method Blank	Total/NA	Water	1613B	651189
LCS 320-651189/2-A	Lab Control Sample	Total/NA	Water	1613B	651189
LCSD 320-651189/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	651189

Analysis Batch: 651969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1 - RA	EPSW001IE01_20230114	Total/NA	Water	1613B	651189
570-124263-2 - RA	A1BPSW0001_20230114	Total/NA	Water	1613B	651189
MB 320-651189/1-A - RA	Method Blank	Total/NA	Water	1613B	651189

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124263-3
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: EPSW001IE01_20230114
Lab Sample ID: 570-124263-1
Date Collected: 01/14/23 13:00
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		973.9 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651969	02/06/23 17:16	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			973.9 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	651907	02/05/23 22:32	GRB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: A1BPSW0001_20230114
Lab Sample ID: 570-124263-2
Date Collected: 01/14/23 14:00
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		981.4 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	651969	02/06/23 17:53	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			981.4 mL	20.0 uL	651189	02/02/23 06:24	BLR	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	651907	02/05/23 23:19	GRB	EET SAC
	Instrument ID: 12D5									

Laboratory References:
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124263-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-3

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124263-1	EPSW001IE01_20230114	Water	01/14/23 13:00	01/17/23 18:25
570-124263-2	A1BPSW0001_20230114	Water	01/14/23 14:00	01/17/23 18:25

124263

Chain of Custody Record for
Haley & Aldrich, Inc Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES | | RCRA ☐ Other

Eurofins Calscience, Inc.

TestAmerica services under the CoC shall be performed in accordance with the H&A Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich and its subsidiaries and affiliates and the Eurofins Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta total dissolved (E900.0) Uranium (HASL-300 U Mod), K-40, CS-137 (E901 0 or E901 1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901 1)	SO4 (E300)	Method 200.8 As, Cd, Cu Pb, Se Method 200.7 Fe, Mn Zn (Total Dissolved)	Method 200.8 As, Cd Cu Pb, Se Method 200.7 Fe Mn Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
–	–	–	–					2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber				Field Staff Notes. Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_ 20230114	01/14/23	1300	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
A1BPSW0001_ 20230114	01/14/23	1400	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
DUP_			G	WM	1	Y	N		x	x	x		x	x	x	x	x				
Preservation Used: 1=Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

570-124263 Chain of Custody

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ___6___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com: Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C) Obs'd:____ Corr'd.____ Therm ID No.____

Relinquished by:	Company:	Date/Time:	Received by:		Date/Time:
[signature]	JHA	01/17/23/1245	[signature]	EC	1/17/23 1245
[signature]	EC	1/17/23/1825	[signature]		1/17/23 1825
			Received in Laboratory by:		

1.2 | 1.2 2.1 | 2.1 SCH

Form No CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

2/13/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124263-2
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230110 (570-124263-1)	1/14/23	13 00 Pacific		Water			X	X	2	
A1BPSW0001_20230110 (570-124263-2)	1/14/23	14 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

2/13/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204509.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-124263-3
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/6/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230110 (570-124263-1)	1/14/23	13:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
A1BPSW0001_20230110 (570-124263-2)	1/14/23	14:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/18/23 1325			1.19.23 910	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 1.80

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124263-3

Login Number: 124263
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124263-3

Login Number: 124263
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/19/23 11:49 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8c 1.7c 2.0c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/23/2023 1:09:00 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-124263-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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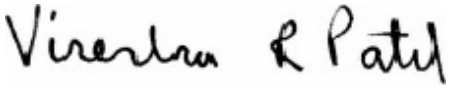

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Authorized for release by
Virendra Patel, Project Manager I
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(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-4

Qualifiers

Rad

Qualifier	Qualifier Description
F	Duplicate RPD exceeds the control limit
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124263-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124263-4

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2º C and 2.1º C.

Receipt Exceptions

The reference method requires samples to have a pH of 2. The following samples were received with a pH of 6. The samples were adjusted to the appropriate pH in the laboratory.

Job#: 570-124260 -1
Job#: 570-124252 -1.2.3
Job#: 570-124263 -1,2
Job#: 570-124262 -1

RAD
Method 900.0: Gross Alpha Gross beta batch 598890
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
A1BPSW0001_20230114 (570-124263-2), (LCS 160-598890/2-A), (LCSB 160-598890/3-A), (MB 160-598890/1-A), (570-124392-R-1-F), (570-124392-R-1-I DU), (570-124392-R-1-G MS) and (570-124392-R-1-H MSBT)

Method 900.0: Gross Alpha and Gross Beta batch 598534
The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass: EPSW001IE01_20230114 (570-124263-1). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 598534
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_20230114 (570-124263-1), (LCS 160-598534/2-A), (LCSB 160-598534/3-A), (MB 160-598534/1-A), (570-124230-R-1-G), (570-124230-R-1-J DU), (570-124230-R-1-H MS) and (570-124230-R-1-I MSBT)

Method 901.1: Gamma Prep Batch 160-597949
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m

Job ID: 570-124263-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

A1BPSW0001_20230114 (570-124263-2), (570-123901-U-2-E) and (570-123901-U-2-F DU)

Method 901.1: Gamma Prep Batch 160-598606
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_20230114 (570-124263-1) and (570-124263-J-1-E DU)

Job ID: 570-124263-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 901.1: Gamma prep batch 160-598606:

Activity detected in the method blank (MB), analyzed by gamma spectroscopy, was above the minimum detectable concentration (MDC) but below the requested limit for Cs-137. The associated samples have Cs-137 activity below the MDC and RL. The data for the following samples have been reported with this narrative: (MB 160-598606/1-A)

Method 901.1: Gamma Prep Batch 160-597709
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_20230114 (570-124263-1), A1BPSW0001_20230114 (570-124263-2), (570-124252-U-1-D) and (570-124252-U-1-F DU)

Method 906.0: Tritium 598717
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPSW001IE01_20230114 (570-124263-1), A1BPSW0001_20230114 (570-124263-2), (LCS 160-598717/2-A), (MB 160-598717/1-A), (570-124392-Q-1-A), (570-124392-Q-1-B DU), (570-124868-Q-1-A) and (570-124868-Q-1-B MS)

Method A-01-R: Isotopic Uranium batch 598078
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20230114 (570-124263-1), A1BPSW0001_20230114 (570-124263-2), (LCS 160-598078/2-A), (MB 160-598078/1-A) and (570-124263-K-2-D DU)

Job ID: 570-124263-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method ExtChrom: Uranium Prep Batch 160-597078:

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPSW001IE01_20230114 (570-124263-1), A1BPSW0001_20230114 (570-124263-2) and (570-124263-K-2-A DU).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-4

Client Sample ID: EPSW001IE01_20230114 — Lab Sample ID: 570-124263-1

No Detections.

Client Sample ID: A1BPSW0001_20230114 — Lab Sample ID: 570-124263-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPSW001IE01_20230114
Lab Sample ID: 570-124263-1
Date Collected: 01/14/23 13:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	187	G	35.8	41.7	3.00	29.4	pCi/L	01/27/23 10:37	02/13/23 18:37	1
Gross Beta	111	G	13.9	17.8	4.00	12.8	pCi/L	01/27/23 10:37	02/13/23 18:37	1

Client Sample ID: A1BPSW0001_20230114
Lab Sample ID: 570-124263-2
Date Collected: 01/14/23 14:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	2.58		1.28	1.31	3.00	1.59	pCi/L	02/01/23 10:23	02/09/23 20:03	1
Gross Beta	1.08		0.603	0.613	4.00	0.845	pCi/L	02/01/23 10:23	02/09/23 20:03	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPSW001IE01_20230114
Lab Sample ID: 570-124263-1
Date Collected: 01/14/23 13:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**23.8**	**G**	6.22	6.78	3.00	5.94	pCi/L	01/27/23 10:37	02/13/23 18:38	1
Gross Beta	**18.4**		2.49	3.09	4.00	2.28	pCi/L	01/27/23 10:37	02/13/23 18:38	1

Client Sample ID: A1BPSW0001_20230114
Lab Sample ID: 570-124263-2
Date Collected: 01/14/23 14:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.552	U	0.622	0.626	3.00	1.01	pCi/L	02/01/23 10:23	02/09/23 20:03	1
Gross Beta	0.557	U	0.542	0.545	4.00	0.863	pCi/L	02/01/23 10:23	02/09/23 20:03	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPSW001IE01_20230114
Date Collected: 01/14/23 13:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-4.84	U	13.3	13.3	20.0	16.0	pCi/L	01/20/23 14:22	02/21/23 09:27	1
Potassium-40	**106**		89.4	90.3		91.6	pCi/L	01/20/23 14:22	02/21/23 09:27	1

Client Sample ID: A1BPSW0001_20230114
Date Collected: 01/14/23 14:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.14	U	8.84	8.84	20.0	10.8	pCi/L	01/20/23 14:22	02/21/23 09:28	1
Potassium-40	-50.3	U	89.6	89.8		128	pCi/L	01/20/23 14:22	02/21/23 09:28	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPSW001IE01_20230114
Lab Sample ID: 570-124263-1
Date Collected: 01/14/23 13:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	3.37	U	7.87	7.88	20.0	9.73	pCi/L	01/30/23 13:32	02/17/23 17:52	1
Potassium-40	**129**		59.2	61.2		50.1	pCi/L	01/30/23 13:32	02/17/23 17:52	1

Client Sample ID: A1BPSW0001_20230114
Lab Sample ID: 570-124263-2
Date Collected: 01/14/23 14:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.13	U	5.99	5.99	20.0	7.48	pCi/L	01/23/23 15:17	02/08/23 14:02	1
Potassium-40	-80.5	U	79.5	80.1		140	pCi/L	01/23/23 15:17	02/08/23 14:02	1

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPSW001IE01_20230114
Date Collected: 01/14/23 13:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	25.2	U	160	160	500	287	pCi/L	01/31/23 12:11	02/02/23 00:09	1

Client Sample ID: A1BPSW0001_20230114
Date Collected: 01/14/23 14:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-36.5	U	150	150	500	279	pCi/L	01/31/23 12:11	02/02/23 00:32	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPSW001IE01_20230114
Lab Sample ID: 570-124263-1
Date Collected: 01/14/23 13:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	3.65		1.34	1.36	1.00	0.852	pCi/L	01/24/23 12:57	02/13/23 13:51	1

Client Sample ID: A1BPSW0001_20230114
Lab Sample ID: 570-124263-2
Date Collected: 01/14/23 14:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.421		0.312	0.313	1.00	0.307	pCi/L	01/24/23 12:57	02/13/23 13:51	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPSW001IE01_20230114
Lab Sample ID: 570-124263-1
Date Collected: 01/14/23 13:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	**0.689**		0.412	0.413	1.00	0.299	pCi/L	01/24/23 12:57	02/13/23 13:51	1

Client Sample ID: A1BPSW0001_20230114
Lab Sample ID: 570-124263-2
Date Collected: 01/14/23 14:00
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.0601	U	0.222	0.222	1.00	0.346	pCi/L	01/24/23 12:57	02/13/23 13:51	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-4

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)						
Lab Sample ID	Client Sample ID	U-232 (30-110)						
LCS 160-598078/2-A	Lab Control Sample	85.2						
MB 160-598078/1-A	Method Blank	82.1						

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)						
Lab Sample ID	Client Sample ID	U-232 (30-110)						
570-124263-2 DU	A1BPSW0001_20230114	73.4						

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-598534/1-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598534

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.2749	U	0.539	0.540	3.00	1.11	pCi/L	01/27/23 10:37	02/13/23 16:16	1
Gross Beta	0.3954	U	0.533	0.534	4.00	0.888	pCi/L	01/27/23 10:37	02/13/23 16:16	1

Lab Sample ID: LCS 160-598534/2-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	47.97		7.10	3.00	2.38	pCi/L	95	75 - 125

Lab Sample ID: LCSB 160-598534/3-A
Matrix: Water
Analysis Batch: 600145

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	67.26		7.25	4.00	0.956	pCi/L	91	75 - 125

Lab Sample ID: 570-124230-R-1-H MS
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	2.61		50.5	33.45		5.21	3.00	1.74	pCi/L	61	60 - 140

Lab Sample ID: 570-124230-R-1-I MSBT
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	3.65		73.7	75.89		8.13	4.00	0.892	pCi/L	98	60 - 140

Lab Sample ID: 570-124230-R-1-J DU
Matrix: Water
Analysis Batch: 600138

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598534

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	2.61		1.519	U	1.20	3.00	1.80	pCi/L	0.37	1
Gross Beta	3.65		2.505		0.804	4.00	0.976	pCi/L	0.66	1

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity (Continued)

Lab Sample ID: MB 160-598890/1-A
Matrix: Water
Analysis Batch: 599978

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598890

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.2714	U	0.532	0.533	3.00	0.663	pCi/L	02/01/23 10:23	02/09/23 19:56	1
Gross Beta	0.07801	U	0.502	0.502	4.00	0.534	pCi/L	02/01/23 10:23	02/09/23 19:56	1

Lab Sample ID: LCS 160-598890/2-A
Matrix: Water
Analysis Batch: 599978

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598890

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	48.86		7.22	3.00	1.49	pCi/L	97	75 - 125

Lab Sample ID: LCSB 160-598890/3-A
Matrix: Water
Analysis Batch: 599978

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598890

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	64.26		6.95	4.00	0.610	pCi/L	87	75 - 125

Lab Sample ID: 570-124392-R-1-G MS
Matrix: Water
Analysis Batch: 600301

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598890

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	1.39		50.5	48.54		6.80	3.00	1.88	pCi/L	93	60 - 140

Lab Sample ID: 570-124392-R-1-H MSBT
Matrix: Water
Analysis Batch: 600301

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598890

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	1.96		73.7	68.82		7.39	4.00	0.852	pCi/L	91	60 - 140

Lab Sample ID: 570-124392-R-1-I DU
Matrix: Water
Analysis Batch: 600301

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598890

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	1.39		1.494		0.935	3.00	1.28	pCi/L	NaN	1
Gross Beta	1.96		1.157		0.578	4.00	0.781	pCi/L	NaN	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-597709/1-A
Matrix: Water
Analysis Batch: 600999

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597709

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.201	U	9.37	9.37	20.0	11.7	pCi/L	01/20/23 14:22	02/20/23 18:19	1
Potassium-40	-11.33	U	161	161		182	pCi/L	01/20/23 14:22	02/20/23 18:19	1

Lab Sample ID: LCS 160-597709/2-A
Matrix: Water
Analysis Batch: 601005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597709

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	137900		16400		298	pCi/L	102	75 - 125
Cesium-137	40900	42040		5010	20.0	72.3	pCi/L	103	75 - 125
Cobalt-60	18000	18800		2240		42.9	pCi/L	104	75 - 125

Lab Sample ID: 570-124252-U-1-F DU
Matrix: Water
Analysis Batch: 600999

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 597709

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	0.848	U	-2.934	U	8.67	20.0	10.7	pCi/L	0.26	1
Potassium-40	59.2	U	133.7		94.8		91.6	pCi/L	0.49	1

Lab Sample ID: MB 160-597949/1-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 597949

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.297	U	6.65	6.65	20.0	8.59	pCi/L	01/23/23 15:17	02/08/23 14:01	1
Potassium-40	43.04	U	107	107		122	pCi/L	01/23/23 15:17	02/08/23 14:01	1

Lab Sample ID: LCS 160-597949/2-A
Matrix: Water
Analysis Batch: 599616

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 597949

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	147900		17600		344	pCi/L	109	75 - 125
Cesium-137	41000	39930		4760	20.0	101	pCi/L	97	75 - 125
Cobalt-60	18100	17850		2130		66.0	pCi/L	99	75 - 125

Lab Sample ID: MB 160-598606/1-A
Matrix: Water
Analysis Batch: 600733

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598606

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	7.150		4.87	4.95	20.0	5.14	pCi/L	01/30/23 13:32	02/17/23 15:35	1
Potassium-40	96.58		56.3	57.5		50.5	pCi/L	01/30/23 13:32	02/17/23 15:35	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: LCS 160-598606/2-A
Matrix: Water
Analysis Batch: 600735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598606

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Americium-241			135000	133700		15700		262	pCi/L	99	75 - 125		
Cesium-137			40900	41850		4920	20.0	79.9	pCi/L	102	75 - 125		
Cobalt-60			18100	18710		2200		60.2	pCi/L	104	75 - 125		

Lab Sample ID: 570-123901-U-2-F DU
Matrix: Water
Analysis Batch: 599622

Client Sample ID: Duplicate
Prep Type: Dissolved
Prep Batch: 597949

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Cesium-137	1.70	U		3.380	U	6.27	20.0	7.58	pCi/L			0.14	1
Potassium-40	82.3			-45.72	U	90.3		128	pCi/L			0.80	1

Lab Sample ID: 570-124263-1 DU
Matrix: Water
Analysis Batch: 600737

Client Sample ID: EPSW001IE01_20230114
Prep Type: Dissolved
Prep Batch: 598606

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Cesium-137	3.37	U		0.1036	U	7.48	20.0	9.37	pCi/L			0.21	1
Potassium-40	129			-34.61	U F	91.3		128	pCi/L			1.07	1

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-598717/1-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598717

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-27.93	U	147	147	500	270	pCi/L	01/31/23 12:11	02/01/23 21:31	1

Lab Sample ID: LCS 160-598717/2-A
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598717

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2110	1839		333	500	270	pCi/L	87	75 - 125		

Lab Sample ID: 570-124868-Q-1-B MS
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	123	U	2160	2177		373	500	286	pCi/L	95	60 - 140		

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: 570-124392-Q-1-B DU
Matrix: Water
Analysis Batch: 599486

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 598717

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Tritium	0.901	U		2.703	U	159	500	289	pCi/L			0.01	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-598078/1-A
Matrix: Water
Analysis Batch: 600266

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 598078

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1667		0.1389	0.1391	1.00	0.146	pCi/L	01/24/23 12:57	02/13/23 13:42	1
Total Uranium	0.1667		0.1389	0.1391	1.00	0.146	pCi/L	01/24/23 12:57	02/13/23 13:42	1

Lab Sample ID: LCS 160-598078/2-A
Matrix: Water
Analysis Batch: 600267

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 598078

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.05		1.53	1.00	0.100	pCi/L	102	75 - 125		
Uranium-238			13.0	13.26		1.55	1.00	0.114	pCi/L	102	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*85.2*		*30 - 110*

Lab Sample ID: 570-124263-2 DU
Matrix: Water
Analysis Batch: 600236

Client Sample ID: A1BPSW0001_20230114
Prep Type: Dissolved
Prep Batch: 598078

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.0601	U		0.2092	U	0.206	1.00	0.250	pCi/L			0.35	1
Total Uranium	0.0601	U		0.2092	U	0.206	1.00	0.250	pCi/L			0.35	1

Rad

Filtration Batch: 597489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123901-U-2-F DU	Duplicate	Dissolved	Water	Filtration	

Filtration Batch: 597606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Dissolved	Water	Filtration	
570-124263-2	A1BPSW0001_20230114	Dissolved	Water	Filtration	
570-124263-1 DU	EPSW001IE01_20230114	Dissolved	Water	Filtration	
570-124263-2 DU	A1BPSW0001_20230114	Dissolved	Water	Filtration	

Prep Batch: 597709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Total/NA	Water	Fill_Geo-0	
570-124263-2	A1BPSW0001_20230114	Total/NA	Water	Fill_Geo-0	
MB 160-597709/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597709/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-124252-U-1-F DU	Duplicate	Total/NA	Water	Fill_Geo-0	

Prep Batch: 597949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-2	A1BPSW0001_20230114	Dissolved	Water	Fill_Geo-0	597606
MB 160-597949/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-597949/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-123901-U-2-F DU	Duplicate	Dissolved	Water	Fill_Geo-0	597489

Prep Batch: 598078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Dissolved	Water	ExtChrom	597606
570-124263-1	EPSW001IE01_20230114	Total/NA	Water	ExtChrom	
570-124263-2	A1BPSW0001_20230114	Dissolved	Water	ExtChrom	597606
570-124263-2	A1BPSW0001_20230114	Total/NA	Water	ExtChrom	
MB 160-598078/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-598078/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-124263-2 DU	A1BPSW0001_20230114	Dissolved	Water	ExtChrom	597606

Prep Batch: 598534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Dissolved	Water	Evaporation	597606
570-124263-1	EPSW001IE01_20230114	Total/NA	Water	Evaporation	
MB 160-598534/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598534/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598534/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-124230-R-1-H MS	Matrix Spike	Total/NA	Water	Evaporation	
570-124230-R-1-I MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-124230-R-1-J DU	Duplicate	Total/NA	Water	Evaporation	

Prep Batch: 598606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Dissolved	Water	Fill_Geo-0	597606
MB 160-598606/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-598606/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-124263-1 DU	EPSW001IE01_20230114	Dissolved	Water	Fill_Geo-0	597606

Rad

Prep Batch: 598717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-1	EPSW001IE01_20230114	Total/NA	Water	LSC_Dist_Susp	
570-124263-2	A1BPSW0001_20230114	Total/NA	Water	LSC_Dist_Susp	
MB 160-598717/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-598717/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-124868-Q-1-B MS	Matrix Spike	Total/NA	Water	LSC_Dist_Susp	
570-124392-Q-1-B DU	Duplicate	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 598890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124263-2	A1BPSW0001_20230114	Dissolved	Water	Evaporation	597606
570-124263-2	A1BPSW0001_20230114	Total/NA	Water	Evaporation	
MB 160-598890/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-598890/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-598890/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-124392-R-1-G MS	Matrix Spike	Total/NA	Water	Evaporation	
570-124392-R-1-H MSBT	Matrix Spike	Total/NA	Water	Evaporation	
570-124392-R-1-I DU	Duplicate	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-4

Client Sample ID: EPSW001IE01_20230114

Date Collected: 01/14/23 13:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Evaporation			100.005 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Dissolved	Analysis	900.0		1	1.0 mL	1.0 mL	600138	02/13/23 18:38	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			20.00 mL	1.0 g	598534	01/27/23 10:37	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	600138	02/13/23 18:37	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 mL	598606	01/30/23 13:32	SAC	EET SL
Dissolved	Analysis	901.1		1			600730	02/17/23 17:52	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597709	01/20/23 14:22	JML	EET SL
Total/NA	Analysis	901.1		1			601095	02/21/23 09:27	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	LSC_Dist_Susp			98.73 mL	1.0 g	598717	01/31/23 12:11	SEH	EET SL
Total/NA	Analysis	906.0		1			599486	02/02/23 00:09	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	ExtChrom			203.25 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Dissolved	Analysis	A-01-R		1			600231	02/13/23 13:51	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			95.29 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Total/NA	Analysis	A-01-R		1			600230	02/13/23 13:51	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client Sample ID: A1BPSW0001_20230114

Date Collected: 01/14/23 14:00
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124263-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Evaporation			200.01 mL	1.0 g	598890	02/01/23 10:23	MST	EET SL
Dissolved	Analysis	900.0		1	1.0 mL	1.0 mL	599967	02/09/23 20:03	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Evaporation			200.00 mL	1.0 g	598890	02/01/23 10:23	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	599967	02/09/23 20:03	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	597949	01/23/23 15:17	JML	EET SL
Dissolved	Analysis	901.1		1			599623	02/08/23 14:02	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	597709	01/20/23 14:22	JML	EET SL
Total/NA	Analysis	901.1		1			601097	02/21/23 09:28	CAH	EET SL
	Instrument ID: GAMMAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124263-4
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: A1BPSW0001_20230114
Lab Sample ID: 570-124263-2
Date Collected: 01/14/23 14:00
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	LSC_Dist_Susp			104.62 mL	1.0 g	598717	01/31/23 12:11	SEH	EET SL
Total/NA	Analysis	906.0		1			599486	02/02/23 00:32	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			1.0 mL	1.0 mL	597606	01/20/23 10:41	JML	EET SL
Dissolved	Prep	ExtChrom			354.81 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Dissolved	Analysis	A-01-R		1			600234	02/13/23 13:51	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			251.67 mL	1.0 mL	598078	01/24/23 12:57	MAL	EET SL
Total/NA	Analysis	A-01-R		1			600232	02/13/23 13:51	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124263-4
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-23
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-4

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124263-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124263-1	EPSW001IE01_20230114	Water	01/14/23 13:00	01/17/23 18:25
570-124263-2	A1BPSW0001_20230114	Water	01/14/23 14:00	01/17/23 18:25

124263

Chain of Custody Record for
Haley & Aldrich, Inc Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES | | RCRA ☐ Other

Eurofins Calscience, Inc.

estAmerica se ices under th CoC shall be performe accorda c th tle &C ithin ela ket ser ce Agreement# 20 9-22 estAm ica by and ben en Hale & Aldrich c it ubs diaries and affilia a d e erica Labora ne Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact.	Date: 1-17-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta total dissolved (E900.0) Uranium (HASL-300 U Mod), K-40, CS-137 (E901 0 or E901 1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901 1)	SO4 (E300)	Method 200.8 As, Cd, Cu Pb, Se Method 200.7 Fe, Mn Zn (Total Dissolved)	Method 200.8 As, Cd Cu Pb, Se Method 200.7 Fe Mn Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
–	–	–	–					2-1L Amber	1 1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1 250mL Amber				Field Staff Notes. Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_ 20230114	01/14/23	1300	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
A1BPSW0001_ 20230114	01/14/23	1400	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
DUP_			G	WM	1	Y	N		x	x	x		x	x	x	x	x				
Preservation Used: 1=Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

570-124263 Chain of Custody

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☐ Archive for ___6___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com: Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp (°C) Obs'd:____ Corr'd.____ Therm ID No.____

Relinquished by:	Company:	Date/Time:	Received by:		Date/Time:
[signature]	JHA	01/17/23/1245	[signature]	EC	1/17/23 1245
[signature]	EC	1/17/23/1825	[signature]		1/17/23 1825
			Received in Laboratory by:		

1.2 | 1.2 2.1 | 2.1 SCH

Form No CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 ERSION 3

2/23/2023

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No: 570-204480 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-124263-2
Address: 5755 8th Street East, ,	Due Date Requested: 2/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230110 (570-124263-1)	1/14/23	13 00 Pacific		Water			X	X	2	
A1BPSW0001_20230110 (570-124263-2)	1/14/23	14 00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 1/18/23 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-204493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-124263-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 2/21/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	901.1_Cs/Fil_Geo_0 K-40 and Cesium-137	A01R_U/ExtChrom_Actin Total Uranium	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137-Dissolved	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
EPSW001IE01_20230110 (570-124263-1)	1/14/23	13:00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
A1BPSW0001_20230110 (570-124263-2)	1/14/23	14:00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	01/16/23 1209	EC	FEDEX		
2	FEDEX			Briana Sharkey-Gonzalez	1/19/23 9:00 am	ETASTL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124263-4

Login Number: 124263
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-124263-4

Login Number: 124263
List Number: 2
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 01/19/23 11:16 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 2/15/2023 4:00:03 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-125746-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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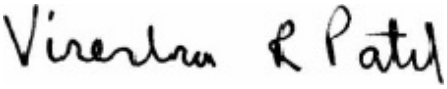
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
EY	Result exceeds normal dynamic range; reported as a min. est.
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-125746-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-125746-1

Comments
No additional comments.

Receipt
The samples were received on 1/30/2023 5:39 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.3º C, 1.6º C, 1.9º C and 2.0º C.

GC/MS VOA
Method 624.1: The following volatiles samples were diluted due to foaming at the time of purging during the original sample analysis: EPBLLC_20230130 (570-125746-1) and EPBBC_20230130 (570-125746-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-299796 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Sulfate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Nitrite as N for analytical batch 570-299797 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 314.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-300242 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Perchlorate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 200.7 Rev 4.4: The method blank for preparation batch 570-300194 and analytical batch 570-300475 contained Boron above the method detection limit. This target analyte concentration was less than the reporting limit (RL) or greater than 10X the value found in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The method blank for preparation batch 570-300615 and analytical batch 570-301175 contained Boron above the method detection limit. This target analyte concentration was less than the reporting limit (RL) or greater than 10X the value found in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The method blank for preparation batch 570-299846 and analytical batch 570-300027 contained Chromium and Nickel above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: Due to the high concentration of Boron, the matrix spike / matrix spike duplicate (MS/MSD) for preparation batch 570-299846 and analytical batch 570-300027 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 200.8: The method blank for preparation batch 570-299846 and analytical batch 570-300027 contained Manganese above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value

Job ID: 570-125746-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

found in the method blank.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPBLLC_20230130 (570-125746-1) and EPBBC_20230130 (570-125746-2). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBLLC_20230130 (570-125746-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-300946. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Client Sample ID: EPBLLC_20230130 — Lab Sample ID: 570-125746-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.039	J,DX	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.046	J,DX	0.20	0.019	ug/L	1		218.6	Dissolved
Fluoride	0.56		0.10	0.046	mg/L	1		300.0	Total/NA
Nitrate as N	0.60		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate - DL	1500		20	4.7	mg/L	20		300.0	Total/NA
Boron	3400	MB	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	3100	BU MB	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Silver	0.55	J,DX	1.0	0.23	ug/L	1		200.8	Total Recoverable
Arsenic	2.0		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	59		1.0	0.17	ug/L	1		200.8	Total Recoverable
Cadmium	0.36	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	0.93	J,DX MB	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	3.8		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	89		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	25	MB	1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	6.0	MB	2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	0.24	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	3.4		2.0	0.36	ug/L	1		200.8	Total Recoverable
Selenium	16		2.0	0.52	ug/L	1		200.8	Total Recoverable
Thallium	0.19	J,DX	1.0	0.11	ug/L	1		200.8	Total Recoverable
Silver	0.54	J,DX BU	1.0	0.23	ug/L	1		200.8	Dissolved
Arsenic	2.0	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	61	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Cadmium	0.34	J,DX BU	1.0	0.13	ug/L	1		200.8	Dissolved
Chromium	0.59	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	3.6	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	15	J,DX BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	22	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	5.8	BU	2.0	0.17	ug/L	1		200.8	Dissolved
Lead	0.17	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Antimony	4.3	BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	18	BU	2.0	0.52	ug/L	1		200.8	Dissolved
Thallium	0.19	J,DX BU	1.0	0.11	ug/L	1		200.8	Dissolved
Total Suspended Solids	6.8		1.0	0.83	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EPBBC_20230130 — Lab Sample ID: 570-125746-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.027	J,DX	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.042	J,DX	0.20	0.019	ug/L	1		218.6	Dissolved
Fluoride	0.71		0.10	0.046	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample ID: EPBBC_20230130 (Continued)

Lab Sample ID: 570-125746-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.61		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate - DL	300		10	2.4	mg/L	10		300.0	Total/NA
Boron	500		500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	490	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Silver	0.46	J,DX	1.0	0.23	ug/L	1		200.8	Total Recoverable
Arsenic	2.4		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	87		1.0	0.17	ug/L	1		200.8	Total Recoverable
Cadmium	0.13	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	0.77	J,DX MB	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	2.9		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	180		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	83	MB	1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	3.9	MB	2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	0.44	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	1.3	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Selenium	0.60	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Zinc	3.5	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Arsenic	2.4	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	89	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.33	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	2.6	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	26	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	60	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	2.1	BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	1.6	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	0.62	J,DX BU	2.0	0.52	ug/L	1		200.8	Dissolved
Total Suspended Solids	8.6		1.0	0.83	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBLLC_20230130
Lab Sample ID: 570-125746-1
Date Collected: 01/30/23 09:30
Matrix: Water
Date Received: 01/30/23 17:39

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		2.0	0.82	ug/L			02/02/23 13:59	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*60 - 140*		*02/02/23 13:59*	*2*
4-Bromofluorobenzene (Surr)	*96*		*60 - 140*		*02/02/23 13:59*	*2*
Dibromofluoromethane	*111*		*60 - 140*		*02/02/23 13:59*	*2*
Toluene-d8 (Surr)	*101*		*60 - 140*		*02/02/23 13:59*	*2*

Client Sample ID: EPBBC_20230130
Lab Sample ID: 570-125746-2
Date Collected: 01/30/23 08:40
Matrix: Water
Date Received: 01/30/23 17:39

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		2.0	0.82	ug/L			02/02/23 14:21	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*60 - 140*		*02/02/23 14:21*	*2*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*02/02/23 14:21*	*2*
Dibromofluoromethane	*111*		*60 - 140*		*02/02/23 14:21*	*2*
Toluene-d8 (Surr)	*101*		*60 - 140*		*02/02/23 14:21*	*2*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		4.7	3.4	ug/L		02/03/23 09:57	02/06/23 14:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*69*		*28 - 127*	*02/03/23 09:57*	*02/06/23 14:47*	*1*
2-Fluorobiphenyl (Surr)	*41*		*31 - 120*	*02/03/23 09:57*	*02/06/23 14:47*	*1*
2-Fluorophenol (Surr)	*33*		*17 - 120*	*02/03/23 09:57*	*02/06/23 14:47*	*1*
Nitrobenzene-d5 (Surr)	*51*		*27 - 120*	*02/03/23 09:57*	*02/06/23 14:47*	*1*
Phenol-d6 (Surr)	*22*		*10 - 120*	*02/03/23 09:57*	*02/06/23 14:47*	*1*
p-Terphenyl-d14 (Surr)	*56*		*45 - 120*	*02/03/23 09:57*	*02/06/23 14:47*	*1*

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		4.7	3.4	ug/L		02/03/23 09:57	02/06/23 15:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*78*		*28 - 127*	*02/03/23 09:57*	*02/06/23 15:08*	*1*
2-Fluorobiphenyl (Surr)	*51*		*31 - 120*	*02/03/23 09:57*	*02/06/23 15:08*	*1*
2-Fluorophenol (Surr)	*31*		*17 - 120*	*02/03/23 09:57*	*02/06/23 15:08*	*1*
Nitrobenzene-d5 (Surr)	*57*		*27 - 120*	*02/03/23 09:57*	*02/06/23 15:08*	*1*
Phenol-d6 (Surr)	*22*		*10 - 120*	*02/03/23 09:57*	*02/06/23 15:08*	*1*
p-Terphenyl-d14 (Surr)	*62*		*45 - 120*	*02/03/23 09:57*	*02/06/23 15:08*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.039	J,DX	0.20	0.019	ug/L			01/31/23 02:28	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.027	J,DX	0.20	0.019	ug/L			01/31/23 02:40	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.046	J,DX	0.20	0.019	ug/L			01/31/23 05:01	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.042	J,DX	0.20	0.019	ug/L			01/31/23 05:13	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.56**		0.10	0.046	mg/L			01/31/23 06:21	1
Nitrite as N	ND		0.10	0.043	mg/L			01/31/23 06:21	1
Nitrate as N	**0.60**		0.10	0.020	mg/L			01/31/23 06:21	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	**0.71**		0.10	0.046	mg/L			01/31/23 06:39	1
Nitrite as N	ND		0.10	0.043	mg/L			01/31/23 06:39	1
Nitrate as N	**0.61**		0.10	0.020	mg/L			01/31/23 06:39	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Method: EPA 300.0 - Anions, Ion Chromatography - DL

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1500		20	4.7	mg/L			01/31/23 12:01	20

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	300		10	2.4	mg/L			01/31/23 09:56	10

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/01/23 13:37	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/01/23 14:19	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3400	MB	500	3.5	ug/L		02/01/23 08:34	02/01/23 19:42	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	500		500	3.5	ug/L		02/08/23 07:02	02/08/23 22:23	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3100	BU MB	500	3.5	ug/L			02/03/23 15:17	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	490	J,DX BU	500	3.5	ug/L			02/11/23 00:39	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	**0.55**	**J,DX**	1.0	0.23	ug/L		01/31/23 08:45	01/31/23 13:36	1
Arsenic	**2.0**		1.0	0.16	ug/L		01/31/23 08:45	01/31/23 13:36	1
Barium	**59**		1.0	0.17	ug/L		01/31/23 08:45	01/31/23 13:36	1
Beryllium	ND		0.50	0.26	ug/L		01/31/23 08:45	01/31/23 13:36	1
Cadmium	**0.36**	**J,DX**	1.0	0.13	ug/L		01/31/23 08:45	01/31/23 13:36	1
Chromium	**0.93**	**J,DX MB**	2.0	0.14	ug/L		01/31/23 08:45	01/31/23 13:36	1
Copper	**3.8**		2.0	0.32	ug/L		01/31/23 08:45	01/31/23 13:36	1
Iron	**89**		20	3.7	ug/L		01/31/23 08:45	01/31/23 13:36	1
Manganese	**25**	**MB**	1.0	0.41	ug/L		01/31/23 08:45	01/31/23 13:36	1
Nickel	**6.0**	**MB**	2.0	0.17	ug/L		01/31/23 08:45	01/31/23 13:36	1
Lead	**0.24**	**J,DX**	1.0	0.12	ug/L		01/31/23 08:45	01/31/23 13:36	1
Antimony	**3.4**		2.0	0.36	ug/L		01/31/23 08:45	01/31/23 13:36	1
Selenium	**16**		2.0	0.52	ug/L		01/31/23 08:45	01/31/23 13:36	1
Thallium	**0.19**	**J,DX**	1.0	0.11	ug/L		01/31/23 08:45	01/31/23 13:36	1
Zinc	ND		20	2.8	ug/L		01/31/23 08:45	01/31/23 13:36	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	**0.46**	**J,DX**	1.0	0.23	ug/L		01/31/23 08:45	01/31/23 13:43	1
Arsenic	**2.4**		1.0	0.16	ug/L		01/31/23 08:45	01/31/23 13:43	1
Barium	**87**		1.0	0.17	ug/L		01/31/23 08:45	01/31/23 13:43	1
Beryllium	ND		0.50	0.26	ug/L		01/31/23 08:45	01/31/23 13:43	1
Cadmium	**0.13**	**J,DX**	1.0	0.13	ug/L		01/31/23 08:45	01/31/23 13:43	1
Chromium	**0.77**	**J,DX MB**	2.0	0.14	ug/L		01/31/23 08:45	01/31/23 13:43	1
Copper	**2.9**		2.0	0.32	ug/L		01/31/23 08:45	01/31/23 13:43	1
Iron	**180**		20	3.7	ug/L		01/31/23 08:45	01/31/23 13:43	1
Manganese	**83**	**MB**	1.0	0.41	ug/L		01/31/23 08:45	01/31/23 13:43	1
Nickel	**3.9**	**MB**	2.0	0.17	ug/L		01/31/23 08:45	01/31/23 13:43	1
Lead	**0.44**	**J,DX**	1.0	0.12	ug/L		01/31/23 08:45	01/31/23 13:43	1
Antimony	**1.3**	**J,DX**	2.0	0.36	ug/L		01/31/23 08:45	01/31/23 13:43	1
Selenium	**0.60**	**J,DX**	2.0	0.52	ug/L		01/31/23 08:45	01/31/23 13:43	1
Thallium	ND		1.0	0.11	ug/L		01/31/23 08:45	01/31/23 13:43	1
Zinc	**3.5**	**J,DX**	20	2.8	ug/L		01/31/23 08:45	01/31/23 13:43	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	**0.54**	**J,DX BU**	1.0	0.23	ug/L			02/01/23 14:52	1
Arsenic	**2.0**	**BU**	1.0	0.16	ug/L			02/01/23 14:52	1
Barium	**61**	**BU**	1.0	0.17	ug/L			02/01/23 14:52	1
Beryllium	ND	BU	0.50	0.26	ug/L			02/01/23 14:52	1
Cadmium	**0.34**	**J,DX BU**	1.0	0.13	ug/L			02/01/23 14:52	1
Chromium	**0.59**	**J,DX BU**	2.0	0.14	ug/L			02/01/23 14:52	1
Copper	**3.6**	**BU**	2.0	0.32	ug/L			02/01/23 14:52	1
Iron	**15**	**J,DX BU**	20	3.7	ug/L			02/01/23 14:52	1
Manganese	**22**	**BU**	1.0	0.41	ug/L			02/01/23 14:52	1
Nickel	**5.8**	**BU**	2.0	0.17	ug/L			02/01/23 14:52	1
Lead	**0.17**	**J,DX BU**	1.0	0.12	ug/L			02/01/23 14:52	1
Antimony	**4.3**	**BU**	2.0	0.36	ug/L			02/01/23 14:52	1
Selenium	**18**	**BU**	2.0	0.52	ug/L			02/01/23 14:52	1
Thallium	**0.19**	**J,DX BU**	1.0	0.11	ug/L			02/01/23 14:52	1
Zinc	ND	BU	20	2.8	ug/L			02/01/23 14:52	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND	BU	1.0	0.23	ug/L			02/01/23 14:55	1
Arsenic	**2.4**	**BU**	1.0	0.16	ug/L			02/01/23 14:55	1
Barium	**89**	**BU**	1.0	0.17	ug/L			02/01/23 14:55	1
Beryllium	ND	BU	0.50	0.26	ug/L			02/01/23 14:55	1
Cadmium	ND	BU	1.0	0.13	ug/L			02/01/23 14:55	1
Chromium	**0.33**	**J,DX BU**	2.0	0.14	ug/L			02/01/23 14:55	1
Copper	**2.6**	**BU**	2.0	0.32	ug/L			02/01/23 14:55	1
Iron	**26**	**BU**	20	3.7	ug/L			02/01/23 14:55	1
Manganese	**60**	**BU**	1.0	0.41	ug/L			02/01/23 14:55	1
Nickel	**2.1**	**BU**	2.0	0.17	ug/L			02/01/23 14:55	1
Lead	ND	BU	1.0	0.12	ug/L			02/01/23 14:55	1
Antimony	**1.6**	**J,DX BU**	2.0	0.36	ug/L			02/01/23 14:55	1
Selenium	**0.62**	**J,DX BU**	2.0	0.52	ug/L			02/01/23 14:55	1
Thallium	ND	BU	1.0	0.11	ug/L			02/01/23 14:55	1
Zinc	ND	BU	20	2.8	ug/L			02/01/23 14:55	1

General Chemistry

Client Sample ID: EPBLLC_20230130
Lab Sample ID: 570-125746-1
Date Collected: 01/30/23 09:30
Matrix: Water
Date Received: 01/30/23 17:39

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			02/03/23 18:39	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			02/03/23 16:43	1
Total Suspended Solids (SM 2540D)	**6.8**		1.0	0.83	mg/L			02/03/23 12:20	1

Client Sample ID: EPBBC_20230130
Lab Sample ID: 570-125746-2
Date Collected: 01/30/23 08:40
Matrix: Water
Date Received: 01/30/23 17:39

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			02/03/23 18:39	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			02/03/23 16:50	1
Total Suspended Solids (SM 2540D)	**8.6**		1.0	0.83	mg/L			02/03/23 12:20	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/04/23 13:34	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/04/23 13:34	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

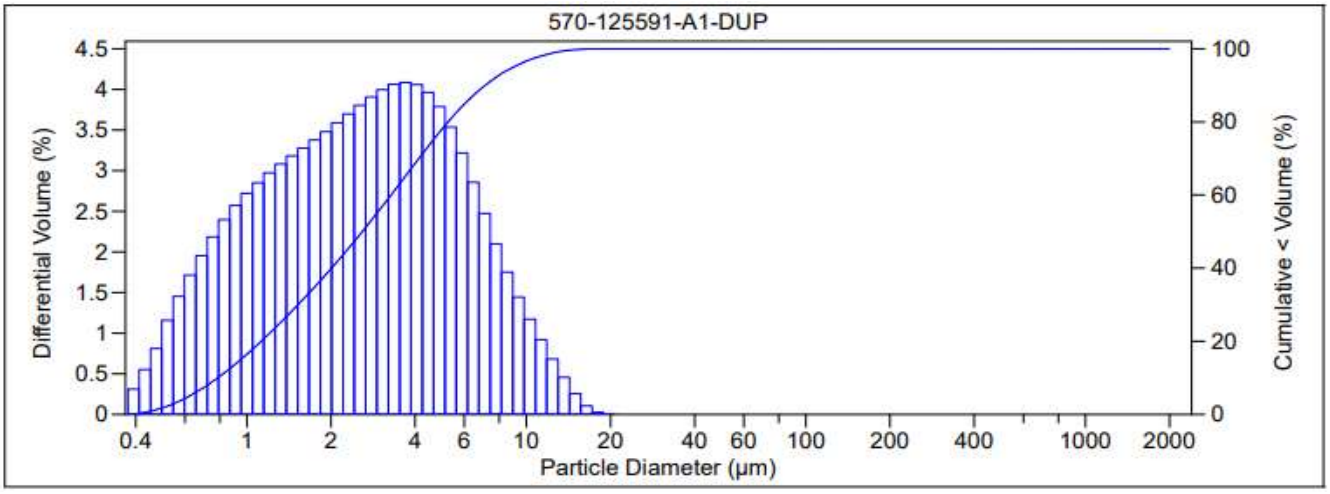
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125590
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13130

Sample ID	Depth ft	Description	Mean Grain Size mm
130-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	32.31	67.69	100.00



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

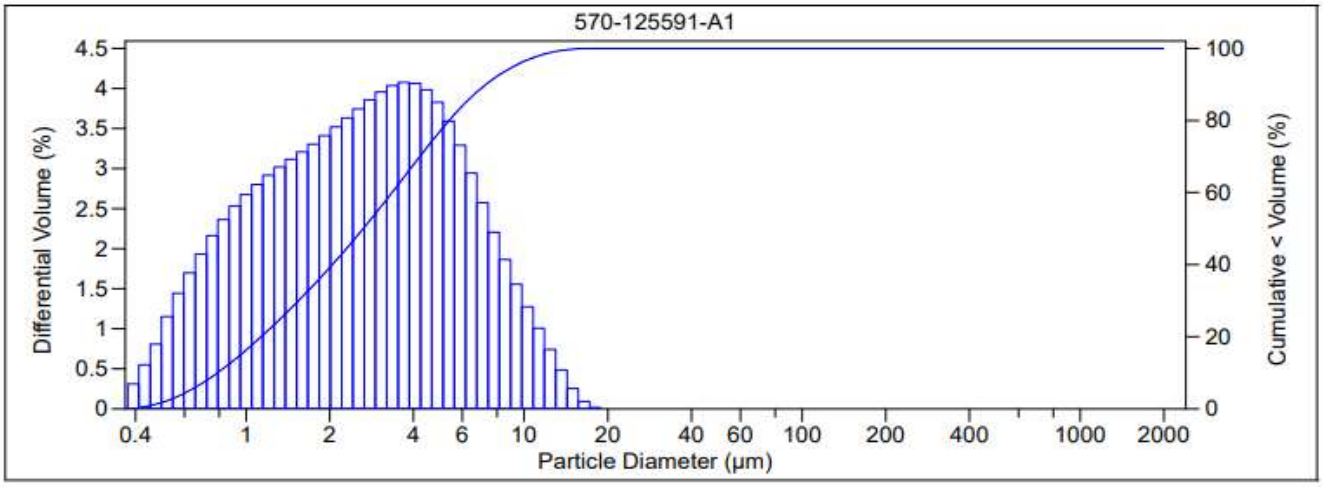
Weck Laboratories, Inc.

Date Sampled:	01/12/23
Date Received:	01/27/23
Work Order No:	570-125591
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: 3A13131

Sample ID	Depth ft	Description	Mean Grain Size mm
131-01/Loch Lomond Site 2-470/AC(		N/A	0.003

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	33.28	66.72	100.00



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	01/30/23
Date Received:	01/30/23
Work Order No:	570-125746
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBLLC_20230130		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	01/30/23
Date Received:	01/30/23
Work Order No:	570-125746
Date Analyzed:	02/03/23
Method:	ASTM D4464M

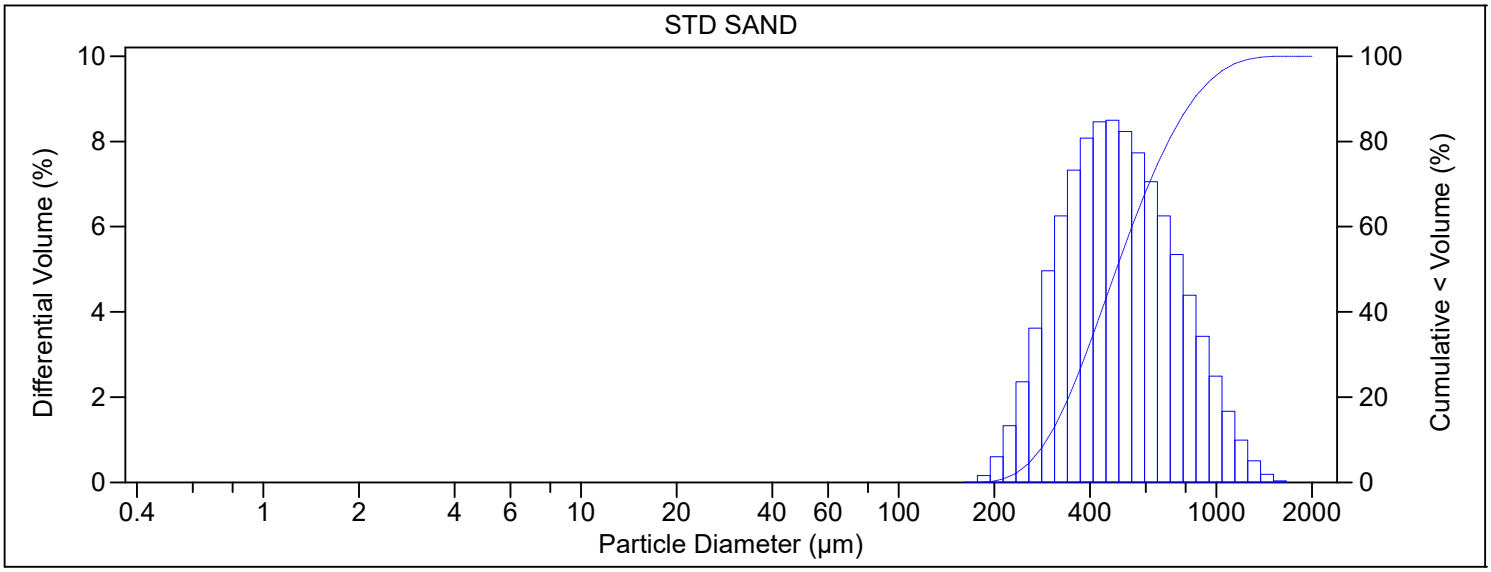
Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230130		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

File name:	C:\LS13320\STD SAND_ 3 Feb 2023_19.52.20.$ls		
	STD SAND_ 3 Feb 2023_19.52.20.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	22		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	19:51 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 3 Feb 2023_19.52.20.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	534.6 µm	S.D.:	224.4 µm
Median:	485.0 µm	Variance:	50358 µm^2
Mean/Median ratio:	1.102	Skewness:	1.068 Right skewed
Mode:	471.1 µm	Kurtosis:	1.067 Leptokurtic

d_{10}: 292.7 µm d_{50}: 485.0 µm d_{90}: 851.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.02	Median:	1.04	Deviation:	0.60
Skewness:	-0.06	Kurtosis:	0.93		

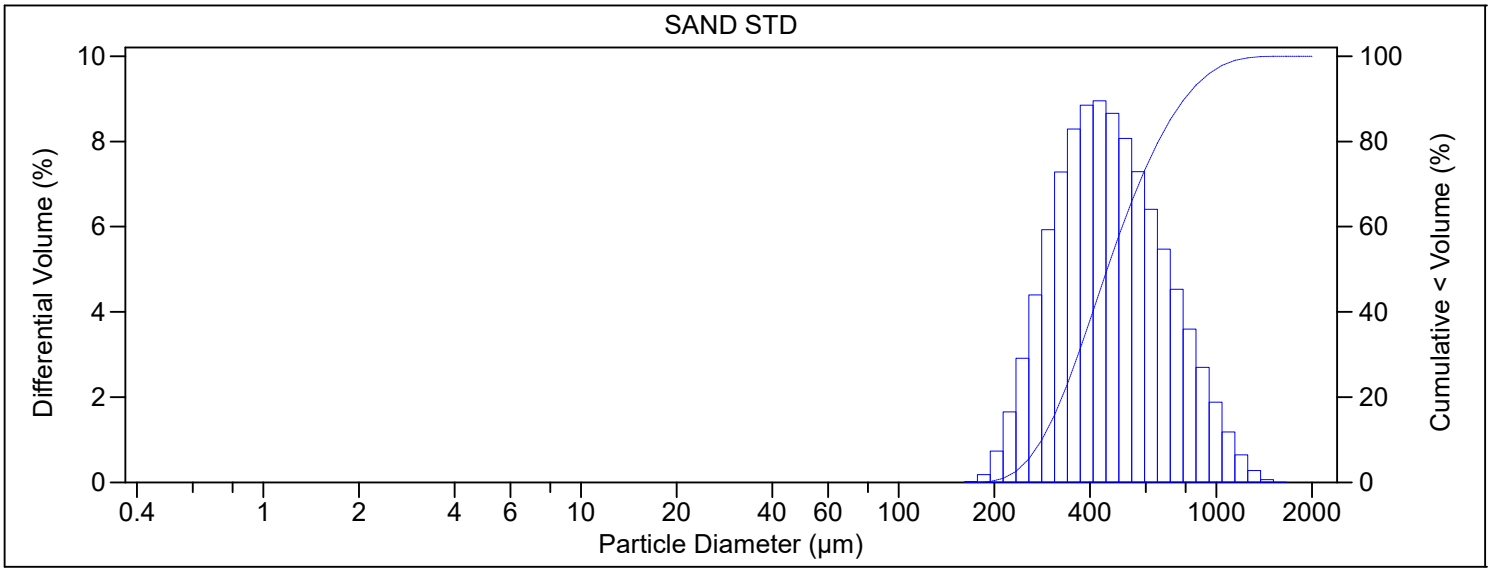
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
260.7 µm	323.9 µm	365.7 µm	434.7 µm	485.0 µm	656.2 µm	756.9 µm	981.3 µm

Particle Diameter µm	STD SAND_ 3 Feb 2023 _19.52.20 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	3.75
250	49.0
500	42.8
1000	4.50
2000	

STD SAND_ 3 Feb 2023_19.52.20.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.99
0.412	0	22.73	0	1255	0.51
0.452	0	24.95	0	1377	0.19
0.496	0	27.39	0	1512	0.034
0.545	0	30.07	0	1660	0.0013
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.011		
3.206	0	176.9	0.16		
3.519	0	194.2	0.60		
3.863	0	213.2	1.33		
4.241	0	234.1	2.36		
4.656	0	256.9	3.62		
5.111	0	282.1	4.97		
5.611	0	309.6	6.26		
6.159	0	339.9	7.33		
6.761	0	373.1	8.07		
7.422	0	409.6	8.46		
8.148	0	449.7	8.50		
8.944	0	493.6	8.23		
9.819	0	541.9	7.73		
10.78	0	594.9	7.06		
11.83	0	653.0	6.25		
12.99	0	716.9	5.35		
14.26	0	786.9	4.39		
15.65	0	863.9	3.43		
17.18	0	948.3	2.50		
18.86	0	1041	1.67		

File name:	C:\LS13320\SAND STD_ 3 Feb 2023_20.33.47.$ls		
	SAND STD_ 3 Feb 2023_20.33.47.$ls		
File ID:	SAND STD		
Sample ID:	SAND STD		
Operator:	C6FB		
Run number:	24		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:32 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) SAND STD_ 3 Feb 2023_20.33.47.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	501.8 µm	S.D.:	207.4 µm
Median:	453.7 µm	Variance:	42999 µm^2
Mean/Median ratio:	1.106	Skewness:	1.134 Right skewed
Mode:	429.2 µm	Kurtosis:	1.262 Leptokurtic

d_{10}: 282.5 µm d_{50}: 453.7 µm d_{90}: 794.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.11	Median:	1.14	Deviation:	0.58
Skewness:	-0.08	Kurtosis:	0.94		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
253.0 µm	310.4 µm	347.5 µm	408.6 µm	453.7 µm	611.0 µm	703.9 µm	919.1 µm

Particle Diameter µm	SAND STD_ 3 Feb 2023 _20.33.47 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	4.62
250	54.3
500	38.1
1000	3.02
2000	

SAND STD_ 3 Feb 2023_20.33.47.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.65
0.412	0	22.73	0	1255	0.28
0.452	0	24.95	0	1377	0.068
0.496	0	27.39	0	1512	0.0041
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.012		
3.206	0	176.9	0.19		
3.519	0	194.2	0.74		
3.863	0	213.2	1.65		
4.241	0	234.1	2.91		
4.656	0	256.9	4.40		
5.111	0	282.1	5.93		
5.611	0	309.6	7.28		
6.159	0	339.9	8.29		
6.761	0	373.1	8.85		
7.422	0	409.6	8.95		
8.148	0	449.7	8.66		
8.944	0	493.6	8.07		
9.819	0	541.9	7.29		
10.78	0	594.9	6.41		
11.83	0	653.0	5.48		
12.99	0	716.9	4.53		
14.26	0	786.9	3.59		
15.65	0	863.9	2.70		
17.18	0	948.3	1.88		
18.86	0	1041	1.18		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-125746-1	EPBLLC_20230130	111	96	111	101
570-125746-2	EPBBC_20230130	113	95	111	101
LCS 570-300567/4	Lab Control Sample	98	106	97	101
LCSD 570-300567/5	Lab Control Sample Dup	97	104	98	100
MB 570-300567/7	Method Blank	107	97	106	100

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-125746-1	EPBLLC_20230130	69	41	33	51	22	56
570-125746-2	EPBBC_20230130	78	51	31	57	22	62
LCS 570-300946/2-A	Lab Control Sample	89	69	59	72	40	78
LCSD 570-300946/3-A	Lab Control Sample Dup	95	73	62	76	41	80
MB 570-300946/1-A	Method Blank	71	44	28	49	20	56

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-300567/7
Matrix: Water
Analysis Batch: 300567

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		1.0	0.41	ug/L			02/02/23 11:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*60 - 140*		*02/02/23 11:28*	*1*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*		*02/02/23 11:28*	*1*
Dibromofluoromethane	*106*		*60 - 140*		*02/02/23 11:28*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*02/02/23 11:28*	*1*

Lab Sample ID: LCS 570-300567/4
Matrix: Water
Analysis Batch: 300567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	19.7		ug/L		99	65 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*60 - 140*
4-Bromofluorobenzene (Surr)	*106*		*60 - 140*
Dibromofluoromethane	*97*		*60 - 140*
Toluene-d8 (Surr)	*101*		*60 - 140*

Lab Sample ID: LCSD 570-300567/5
Matrix: Water
Analysis Batch: 300567

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Trichloroethene			20.0	21.2		ug/L		106	65 - 135	7	48

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*97*		*60 - 140*
4-Bromofluorobenzene (Surr)	*104*		*60 - 140*
Dibromofluoromethane	*98*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-300946/1-A
Matrix: Water
Analysis Batch: 301419

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 300946

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		02/03/23 09:57	02/06/23 16:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*71*		*28 - 127*	*02/03/23 09:57*	*02/06/23 16:50*	*1*
2-Fluorobiphenyl (Surr)	*44*		*31 - 120*	*02/03/23 09:57*	*02/06/23 16:50*	*1*
2-Fluorophenol (Surr)	*28*		*17 - 120*	*02/03/23 09:57*	*02/06/23 16:50*	*1*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-300946/1-A
Matrix: Water
Analysis Batch: 301419

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 300946

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Nitrobenzene-d5 (Surr)	49		27 - 120	02/03/23 09:57	02/06/23 16:50	1
Phenol-d6 (Surr)	20		10 - 120	02/03/23 09:57	02/06/23 16:50	1
p-Terphenyl-d14 (Surr)	56		45 - 120	02/03/23 09:57	02/06/23 16:50	1

Lab Sample ID: LCS 570-300946/2-A
Matrix: Water
Analysis Batch: 301419

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 300946

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bis(2-ethylhexyl) phthalate			20.0	19.2		ug/L		96	29 - 137		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4,6-Tribromophenol (Surr)	89		28 - 127
2-Fluorobiphenyl (Surr)	69		31 - 120
2-Fluorophenol (Surr)	59		17 - 120
Nitrobenzene-d5 (Surr)	72		27 - 120
Phenol-d6 (Surr)	40		10 - 120
p-Terphenyl-d14 (Surr)	78		45 - 120

Lab Sample ID: LCSD 570-300946/3-A
Matrix: Water
Analysis Batch: 301419

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 300946

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate			20.0	20.1		ug/L		100	29 - 137	5	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2,4,6-Tribromophenol (Surr)	95		28 - 127
2-Fluorobiphenyl (Surr)	73		31 - 120
2-Fluorophenol (Surr)	62		17 - 120
Nitrobenzene-d5 (Surr)	76		27 - 120
Phenol-d6 (Surr)	41		10 - 120
p-Terphenyl-d14 (Surr)	80		45 - 120

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-299790/4
Matrix: Water
Analysis Batch: 299790

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/31/23 01:52	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: LCS 570-299790/5
Matrix: Water
Analysis Batch: 299790

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.1		ug/L		100	95 - 107		

Lab Sample ID: LCSD 570-299790/6
Matrix: Water
Analysis Batch: 299790

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.1		ug/L		100	95 - 107	0	20

Lab Sample ID: 570-125746-1 MS
Matrix: Water
Analysis Batch: 299790

Client Sample ID: EPBLLC_20230130
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	0.039	J,DX	50.1	50.6		ug/L		101	85 - 121		

Lab Sample ID: 570-125746-1 MSD
Matrix: Water
Analysis Batch: 299790

Client Sample ID: EPBLLC_20230130
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.039	J,DX	50.1	50.0		ug/L		100	85 - 121	1	25

Lab Sample ID: MB 570-299792/1-A
Matrix: Water
Analysis Batch: 299790

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			01/31/23 04:25	1

Lab Sample ID: LCS 570-299792/2-A
Matrix: Water
Analysis Batch: 299790

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.0		ug/L		100	95 - 107		

Lab Sample ID: LCSD 570-299792/3-A
Matrix: Water
Analysis Batch: 299790

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	49.5		ug/L		99	95 - 107	1	20

Lab Sample ID: 570-125746-1 MS
Matrix: Water
Analysis Batch: 299790

Client Sample ID: EPBLLC_20230130
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	0.046	J,DX	50.1	50.7		ug/L		101	85 - 121		

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: 570-125746-1 MSD
Matrix: Water
Analysis Batch: 299790

Client Sample ID: EPBLLC_20230130
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.046	J,DX	50.1	50.0		ug/L		100	85 - 121	1	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-299796/5
Matrix: Water
Analysis Batch: 299796

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.10	0.046	mg/L			01/31/23 04:38	1
Sulfate	ND		1.0	0.24	mg/L			01/31/23 04:38	1

Lab Sample ID: LCS 570-299796/6
Matrix: Water
Analysis Batch: 299796

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	2.50	2.57		mg/L		103	90 - 110
Sulfate	50.0	49.0		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-299796/7
Matrix: Water
Analysis Batch: 299796

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	2.50	2.57		mg/L		103	90 - 110	0	15
Sulfate	50.0	49.0		mg/L		98	90 - 110	0	15

Lab Sample ID: 570-125769-D-1 MS
Matrix: Water
Analysis Batch: 299796

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Fluoride	0.28		2.50	3.00		mg/L		109	80 - 120
Sulfate	64		50.0	124	EY	mg/L		119	80 - 120

Lab Sample ID: 570-125769-D-1 MSD
Matrix: Water
Analysis Batch: 299796

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Fluoride	0.28		2.50	2.99		mg/L		108	80 - 120	1	20
Sulfate	64		50.0	124	EY	mg/L		120	80 - 120	0	20

Lab Sample ID: MB 570-299797/5
Matrix: Water
Analysis Batch: 299797

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			01/31/23 04:38	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-299797/5
Matrix: Water
Analysis Batch: 299797

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.10	0.020	mg/L			01/31/23 04:38	1

Lab Sample ID: LCS 570-299797/6
Matrix: Water
Analysis Batch: 299797

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.61		mg/L		105	90 - 110
Nitrate as N	5.00	4.81		mg/L		96	90 - 110

Lab Sample ID: LCSD 570-299797/7
Matrix: Water
Analysis Batch: 299797

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.62		mg/L		105	90 - 110	0	15
Nitrate as N	5.00	4.80		mg/L		96	90 - 110	0	15

Lab Sample ID: 570-125769-D-1 MS
Matrix: Water
Analysis Batch: 299797

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	ND		2.50	3.00		mg/L		120	80 - 120
Nitrate as N	2.4		5.00	8.06		mg/L		114	80 - 120

Lab Sample ID: 570-125769-D-1 MSD
Matrix: Water
Analysis Batch: 299797

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	ND		2.50	3.02	LM	mg/L		121	80 - 120	1	20
Nitrate as N	2.4		5.00	8.10		mg/L		115	80 - 120	0	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-300242/7
Matrix: Water
Analysis Batch: 300242

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/01/23 11:53	1

Lab Sample ID: LCS 570-300242/8
Matrix: Water
Analysis Batch: 300242

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.7		ug/L		103	85 - 115

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCSD 570-300242/9
Matrix: Water
Analysis Batch: 300242

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.8		ug/L		99	85 - 115	4	15

Lab Sample ID: 570-125769-W-2 MS
Matrix: Water
Analysis Batch: 300242

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	550		500	1100	EY	ug/L		109	80 - 120

Lab Sample ID: 570-125769-W-2 MSD
Matrix: Water
Analysis Batch: 300242

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	550		500	1080	EY	ug/L		105	80 - 120	1	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-300194/1-A
Matrix: Water
Analysis Batch: 300475

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 300194

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.80	J,DX	500	3.5	ug/L		02/01/23 08:34	02/01/23 18:23	1

Lab Sample ID: LCS 570-300194/2-A
Matrix: Water
Analysis Batch: 300475

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 300194

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron			500	482	J,DX	ug/L		96	85 - 115

Lab Sample ID: LCSD 570-300194/3-A
Matrix: Water
Analysis Batch: 300475

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 300194

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	489	J,DX	ug/L		98	85 - 115	1	20

Lab Sample ID: 570-125908-E-1-B MS
Matrix: Water
Analysis Batch: 300475

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 300194

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	970	MB	500	1530		ug/L		110	80 - 120

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 570-125908-E-1-C MSD
Matrix: Water
Analysis Batch: 300475

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 300194

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	970	MB	500	1500		ug/L		106	80 - 120	1	20

Lab Sample ID: MB 570-302020/1-A
Matrix: Water
Analysis Batch: 302405

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 302020

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		02/08/23 07:02	02/08/23 21:53	1

Lab Sample ID: LCS 570-302020/2-A
Matrix: Water
Analysis Batch: 302405

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 302020

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	499	J,DX	ug/L		100	85 - 115

Lab Sample ID: LCSD 570-302020/3-A
Matrix: Water
Analysis Batch: 302405

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 302020

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	503		ug/L		101	85 - 115	1	20

Lab Sample ID: 570-126678-A-1-B MS
Matrix: Water
Analysis Batch: 302405

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 302020

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	11	J,DX	500	529		ug/L		103	80 - 120

Lab Sample ID: 570-126678-A-1-C MSD
Matrix: Water
Analysis Batch: 302405

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 302020

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	11	J,DX	500	521		ug/L		102	80 - 120	1	20

Lab Sample ID: MB 570-300615/1-A
Matrix: Water
Analysis Batch: 301175

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	8.50	J,DX	500	3.5	ug/L			02/03/23 14:48	1

Lab Sample ID: LCS 570-300615/2-A
Matrix: Water
Analysis Batch: 301175

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	479	J,DX	ug/L		96	85 - 115

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: LCSD 570-300615/3-A
Matrix: Water
Analysis Batch: 301175

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	468	J,DX	ug/L		94	85 - 115	2	20

Lab Sample ID: 570-125840-A-3-C MS
Matrix: Water
Analysis Batch: 301175

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	82	J,DX MB	500	553		ug/L		94	80 - 120		

Lab Sample ID: 570-125840-A-3-D MSD
Matrix: Water
Analysis Batch: 301175

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	82	J,DX MB	500	550		ug/L		94	80 - 120	1	20

Lab Sample ID: MB 570-302883/1-A
Matrix: Water
Analysis Batch: 303170

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			02/10/23 23:53	1

Lab Sample ID: LCS 570-302883/2-A
Matrix: Water
Analysis Batch: 303170

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	484	J,DX	ug/L		97	85 - 115		

Lab Sample ID: LCSD 570-302883/3-A
Matrix: Water
Analysis Batch: 303170

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	473	J,DX	ug/L		95	85 - 115	2	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-299846/1-A
Matrix: Water
Analysis Batch: 300027

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 299846

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L		01/31/23 08:45	01/31/23 13:29	1
Arsenic	ND		1.0	0.16	ug/L		01/31/23 08:45	01/31/23 13:29	1
Barium	ND		1.0	0.17	ug/L		01/31/23 08:45	01/31/23 13:29	1
Beryllium	ND		0.50	0.26	ug/L		01/31/23 08:45	01/31/23 13:29	1
Cadmium	ND		1.0	0.13	ug/L		01/31/23 08:45	01/31/23 13:29	1
Chromium	0.598	J,DX	2.0	0.14	ug/L		01/31/23 08:45	01/31/23 13:29	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-299846/1-A
Matrix: Water
Analysis Batch: 300027

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 299846

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		2.0	0.32	ug/L		01/31/23 08:45	01/31/23 13:29	1
Iron	ND		20	3.7	ug/L		01/31/23 08:45	01/31/23 13:29	1
Manganese	1.08		1.0	0.41	ug/L		01/31/23 08:45	01/31/23 13:29	1
Nickel	0.265	J,DX	2.0	0.17	ug/L		01/31/23 08:45	01/31/23 13:29	1
Lead	ND		1.0	0.12	ug/L		01/31/23 08:45	01/31/23 13:29	1
Antimony	ND		2.0	0.36	ug/L		01/31/23 08:45	01/31/23 13:29	1
Selenium	ND		2.0	0.52	ug/L		01/31/23 08:45	01/31/23 13:29	1
Thallium	ND		1.0	0.11	ug/L		01/31/23 08:45	01/31/23 13:29	1
Zinc	ND		20	2.8	ug/L		01/31/23 08:45	01/31/23 13:29	1

Lab Sample ID: LCS 570-299846/2-A
Matrix: Water
Analysis Batch: 300027

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 299846

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	80.0	77.2		ug/L		96	85 - 115
Arsenic	80.0	77.2		ug/L		97	85 - 115
Barium	80.0	76.7		ug/L		96	85 - 115
Beryllium	80.0	74.5		ug/L		93	85 - 115
Cadmium	80.0	76.3		ug/L		95	85 - 115
Chromium	80.0	78.9		ug/L		99	85 - 115
Copper	80.0	75.5		ug/L		94	85 - 115
Iron	800	810		ug/L		101	85 - 115
Manganese	80.0	80.6		ug/L		101	85 - 115
Nickel	80.0	77.1		ug/L		96	85 - 115
Lead	80.0	76.8		ug/L		96	85 - 115
Antimony	80.0	77.2		ug/L		97	85 - 115
Selenium	80.0	74.9		ug/L		94	85 - 115
Thallium	80.0	77.3		ug/L		97	85 - 115
Zinc	80.0	74.7		ug/L		93	85 - 115

Lab Sample ID: LCSD 570-299846/3-A
Matrix: Water
Analysis Batch: 300027

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 299846

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	80.0	78.5		ug/L		98	85 - 115	2	20
Arsenic	80.0	78.3		ug/L		98	85 - 115	1	20
Barium	80.0	79.7		ug/L		100	85 - 115	4	20
Beryllium	80.0	77.5		ug/L		97	85 - 115	4	20
Cadmium	80.0	78.5		ug/L		98	85 - 115	3	20
Chromium	80.0	79.6		ug/L		100	85 - 115	1	20
Copper	80.0	77.4		ug/L		97	85 - 115	2	20
Iron	800	793		ug/L		99	85 - 115	2	20
Manganese	80.0	80.5		ug/L		101	85 - 115	0	20
Nickel	80.0	77.9		ug/L		97	85 - 115	1	20
Lead	80.0	78.3		ug/L		98	85 - 115	2	20
Antimony	80.0	81.1		ug/L		101	85 - 115	5	20
Selenium	80.0	76.4		ug/L		96	85 - 115	2	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-299846/3-A
Matrix: Water
Analysis Batch: 300027

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 299846

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Thallium			80.0	78.6		ug/L		98	85 - 115	2	20
Zinc			80.0	77.2		ug/L		97	85 - 115	3	20

Lab Sample ID: 570-125746-1 MS
Matrix: Water
Analysis Batch: 300027

Client Sample ID: EPBLLC_20230130
Prep Type: Total Recoverable
Prep Batch: 299846

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	0.55	J,DX	80.0	69.5		ug/L		86	80 - 120
Arsenic	2.0		80.0	84.6		ug/L		103	80 - 120
Barium	59		80.0	141		ug/L		103	80 - 120
Beryllium	ND		80.0	68.6		ug/L		86	80 - 120
Cadmium	0.36	J,DX	80.0	73.8		ug/L		92	80 - 120
Chromium	0.93	J,DX MB	80.0	75.2		ug/L		93	80 - 120
Copper	3.8		80.0	71.2		ug/L		84	80 - 120
Iron	89		800	843		ug/L		94	80 - 120
Manganese	25	MB	80.0	103		ug/L		97	80 - 120
Nickel	6.0	MB	80.0	73.4		ug/L		84	80 - 120
Lead	0.24	J,DX	80.0	73.6		ug/L		92	80 - 120
Antimony	3.4		80.0	89.7		ug/L		108	80 - 120
Selenium	16		80.0	99.3		ug/L		104	80 - 120
Thallium	0.19	J,DX	80.0	73.8		ug/L		92	80 - 120
Zinc	ND		80.0	69.0		ug/L		86	80 - 120

Lab Sample ID: 570-125746-1 MSD
Matrix: Water
Analysis Batch: 300027

Client Sample ID: EPBLLC_20230130
Prep Type: Total Recoverable
Prep Batch: 299846

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	0.55	J,DX	80.0	68.6		ug/L		85	80 - 120	1	20
Arsenic	2.0		80.0	82.1		ug/L		100	80 - 120	3	20
Barium	59		80.0	138		ug/L		98	80 - 120	3	20
Beryllium	ND		80.0	66.0		ug/L		82	80 - 120	4	20
Cadmium	0.36	J,DX	80.0	71.7		ug/L		89	80 - 120	3	20
Chromium	0.93	J,DX MB	80.0	74.4		ug/L		92	80 - 120	1	20
Copper	3.8		80.0	70.5		ug/L		83	80 - 120	1	20
Iron	89		800	834		ug/L		93	80 - 120	1	20
Manganese	25	MB	80.0	100		ug/L		94	80 - 120	2	20
Nickel	6.0	MB	80.0	72.6		ug/L		83	80 - 120	1	20
Lead	0.24	J,DX	80.0	71.8		ug/L		89	80 - 120	2	20
Antimony	3.4		80.0	87.3		ug/L		105	80 - 120	3	20
Selenium	16		80.0	94.3		ug/L		98	80 - 120	5	20
Thallium	0.19	J,DX	80.0	72.5		ug/L		90	80 - 120	2	20
Zinc	ND		80.0	67.5		ug/L		84	80 - 120	2	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-300322/1-A
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		1.0	0.23	ug/L			02/01/23 14:38	1
Arsenic	ND		1.0	0.16	ug/L			02/01/23 14:38	1
Barium	ND		1.0	0.17	ug/L			02/01/23 14:38	1
Beryllium	ND		0.50	0.26	ug/L			02/01/23 14:38	1
Cadmium	ND		1.0	0.13	ug/L			02/01/23 14:38	1
Chromium	ND		2.0	0.14	ug/L			02/01/23 14:38	1
Copper	ND		2.0	0.32	ug/L			02/01/23 14:38	1
Iron	ND		20	3.7	ug/L			02/01/23 14:38	1
Manganese	ND		1.0	0.41	ug/L			02/01/23 14:38	1
Nickel	ND		2.0	0.17	ug/L			02/01/23 14:38	1
Lead	ND		1.0	0.12	ug/L			02/01/23 14:38	1
Antimony	ND		2.0	0.36	ug/L			02/01/23 14:38	1
Selenium	ND		2.0	0.52	ug/L			02/01/23 14:38	1
Thallium	ND		1.0	0.11	ug/L			02/01/23 14:38	1
Zinc	ND		20	2.8	ug/L			02/01/23 14:38	1

Lab Sample ID: LCS 570-300322/2-A
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Silver			80.0	74.1		ug/L		93	85 - 115		
Arsenic			80.0	72.8		ug/L		91	85 - 115		
Barium			80.0	75.8		ug/L		95	85 - 115		
Beryllium			80.0	73.0		ug/L		91	85 - 115		
Cadmium			80.0	74.6		ug/L		93	85 - 115		
Chromium			80.0	74.6		ug/L		93	85 - 115		
Copper			80.0	73.4		ug/L		92	85 - 115		
Iron			800	760		ug/L		95	85 - 115		
Manganese			80.0	76.0		ug/L		95	85 - 115		
Nickel			80.0	73.9		ug/L		92	85 - 115		
Lead			80.0	76.3		ug/L		95	85 - 115		
Antimony			80.0	73.2		ug/L		91	85 - 115		
Selenium			80.0	70.7		ug/L		88	85 - 115		
Thallium			80.0	77.8		ug/L		97	85 - 115		
Zinc			80.0	71.9		ug/L		90	85 - 115		

Lab Sample ID: LCSD 570-300322/3-A
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver			80.0	72.8		ug/L		91	85 - 115	2	20
Arsenic			80.0	72.4		ug/L		91	85 - 115	1	20
Barium			80.0	76.2		ug/L		95	85 - 115	0	20
Beryllium			80.0	72.9		ug/L		91	85 - 115	0	20
Cadmium			80.0	74.8		ug/L		94	85 - 115	0	20
Chromium			80.0	74.0		ug/L		93	85 - 115	1	20
Copper			80.0	73.3		ug/L		92	85 - 115	0	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-300322/3-A
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron			800	749		ug/L		94	85 - 115	1	20
Manganese			80.0	75.4		ug/L		94	85 - 115	1	20
Nickel			80.0	73.8		ug/L		92	85 - 115	0	20
Lead			80.0	74.3		ug/L		93	85 - 115	3	20
Antimony			80.0	76.9		ug/L		96	85 - 115	5	20
Selenium			80.0	69.8		ug/L		87	85 - 115	1	20
Thallium			80.0	75.9		ug/L		95	85 - 115	2	20
Zinc			80.0	71.3		ug/L		89	85 - 115	1	20

Lab Sample ID: 570-125840-A-3-A MS
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	0.46	J,DX	80.0	70.6		ug/L		88	80 - 120
Arsenic	0.66	J,DX	80.0	75.8		ug/L		94	80 - 120
Barium	34		80.0	113		ug/L		98	80 - 120
Beryllium	ND		80.0	70.8		ug/L		88	80 - 120
Cadmium	ND		80.0	75.6		ug/L		94	80 - 120
Chromium	0.33	J,DX	80.0	71.4		ug/L		89	80 - 120
Copper	1.4	J,DX	80.0	70.5		ug/L		86	80 - 120
Iron	8.7	J,DX	800	721		ug/L		89	80 - 120
Manganese	7.0		80.0	78.9		ug/L		90	80 - 120
Nickel	1.2	J,DX	80.0	70.2		ug/L		86	80 - 120
Lead	ND		80.0	71.8		ug/L		90	80 - 120
Antimony	3.4		80.0	77.6		ug/L		93	80 - 120
Selenium	ND		80.0	77.1		ug/L		96	80 - 120
Thallium	ND		80.0	73.0		ug/L		91	80 - 120
Zinc	3.0	J,DX	80.0	70.3		ug/L		84	80 - 120

Lab Sample ID: 570-125840-A-3-B MSD
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Silver	0.46	J,DX	80.0	71.2		ug/L		88	80 - 120	1	20
Arsenic	0.66	J,DX	80.0	75.9		ug/L		94	80 - 120	0	20
Barium	34		80.0	115		ug/L		101	80 - 120	2	20
Beryllium	ND		80.0	69.3		ug/L		87	80 - 120	2	20
Cadmium	ND		80.0	75.9		ug/L		95	80 - 120	0	20
Chromium	0.33	J,DX	80.0	72.0		ug/L		90	80 - 120	1	20
Copper	1.4	J,DX	80.0	71.3		ug/L		87	80 - 120	1	20
Iron	8.7	J,DX	800	735		ug/L		91	80 - 120	2	20
Manganese	7.0		80.0	79.5		ug/L		91	80 - 120	1	20
Nickel	1.2	J,DX	80.0	70.8		ug/L		87	80 - 120	1	20
Lead	ND		80.0	72.3		ug/L		90	80 - 120	1	20
Antimony	3.4		80.0	81.5		ug/L		98	80 - 120	5	20
Selenium	ND		80.0	76.4		ug/L		95	80 - 120	1	20
Thallium	ND		80.0	73.2		ug/L		91	80 - 120	0	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-125840-A-3-B MSD
Matrix: Water
Analysis Batch: 300368

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Zinc	3.0	J,DX	80.0	70.5		ug/L		84	80 - 120	0	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-301139/11
Matrix: Water
Analysis Batch: 301139

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			02/03/23 11:39	1

Lab Sample ID: LCS 570-301139/13
Matrix: Water
Analysis Batch: 301139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	249		ug/L		100	90 - 110

Lab Sample ID: LCSD 570-301139/14
Matrix: Water
Analysis Batch: 301139

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	240		ug/L		96	90 - 110	4	20

Lab Sample ID: MRL 570-301139/10
Matrix: Water
Analysis Batch: 301139

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	6.41		ug/L		128	50 - 150

Lab Sample ID: 570-125231-D-7 MS
Matrix: Water
Analysis Batch: 301139

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	6.7		250	334	LM	ug/L		131	70 - 130

Lab Sample ID: 570-125231-D-7 MSD
Matrix: Water
Analysis Batch: 301139

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	6.7		250	315		ug/L		123	70 - 130	6	30

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: 570-125231-F-7 DU
Matrix: Water
Analysis Batch: 301139

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Cyanide, Total	6.7			7.30		ug/L				8	

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-301028/1
Matrix: Water
Analysis Batch: 301028

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			02/03/23 12:20	1

Lab Sample ID: LCS 570-301028/2
Matrix: Water
Analysis Batch: 301028

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	96.0		mg/L		96	77 - 116		

Lab Sample ID: LCSD 570-301028/3
Matrix: Water
Analysis Batch: 301028

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	101		mg/L		101	77 - 116	5	10

Lab Sample ID: 570-125716-A-4 DU
Matrix: Water
Analysis Batch: 301028

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	2300			2310		mg/L				0.9	10

Lab Sample ID: MB 570-301230/1
Matrix: Water
Analysis Batch: 301230

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			02/04/23 14:06	1

Lab Sample ID: LCS 570-301230/2
Matrix: Water
Analysis Batch: 301230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	84.0		mg/L		84	77 - 116		

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 570-301230/3
Matrix: Water
Analysis Batch: 301230

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	82.0		mg/L		82	77 - 116	2	10

Lab Sample ID: 570-125865-C-1 DU
Matrix: Water
Analysis Batch: 301230

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	55			56.0		mg/L				2	10

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-125591-A-1 DU
Matrix: Water
Analysis Batch: 301228

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay (less than 0.00391 mm)	66.72			67.69		%				1	20
Coarse Sand (0.5mm to 1mm)	ND			ND		%				NC	20
Fine Sand (0.125 to 0.25mm)	ND			ND		%				NC	20
Gravel (greater than 2 mm)	ND			ND		%				NC	20
Medium Sand (0.25 to 0.5 mm)	ND			ND		%				NC	20
Silt (0.00391 to 0.0625mm)	33.28			32.31		%				3	20
Total Silt and Clay (0 to 0.0626mm)	100.00			100.00		%				0	20
Very Coarse Sand (1 to 2mm)	ND			ND		%				NC	20
Very Fine Sand (0.0625 to 0.125 mm)	ND			ND		%				NC	20

GC/MS VOA

Analysis Batch: 300567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	624.1	
570-125746-2	EPBBC_20230130	Total/NA	Water	624.1	
MB 570-300567/7	Method Blank	Total/NA	Water	624.1	
LCS 570-300567/4	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-300567/5	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 300946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	625	
570-125746-2	EPBBC_20230130	Total/NA	Water	625	
MB 570-300946/1-A	Method Blank	Total/NA	Water	625	
LCS 570-300946/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-300946/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 301419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	625.1 SIM	300946
570-125746-2	EPBBC_20230130	Total/NA	Water	625.1 SIM	300946
MB 570-300946/1-A	Method Blank	Total/NA	Water	625.1 SIM	300946
LCS 570-300946/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	300946
LCSD 570-300946/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	300946

HPLC/IC

Analysis Batch: 299790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	218.6	299792
570-125746-1	EPBLLC_20230130	Total/NA	Water	218.6	
570-125746-2	EPBBC_20230130	Dissolved	Water	218.6	299792
570-125746-2	EPBBC_20230130	Total/NA	Water	218.6	
MB 570-299790/4	Method Blank	Total/NA	Water	218.6	
MB 570-299792/1-A	Method Blank	Dissolved	Water	218.6	299792
LCS 570-299790/5	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-299792/2-A	Lab Control Sample	Dissolved	Water	218.6	299792
LCSD 570-299790/6	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-299792/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	299792
570-125746-1 MS	EPBLLC_20230130	Dissolved	Water	218.6	299792
570-125746-1 MS	EPBLLC_20230130	Total/NA	Water	218.6	
570-125746-1 MSD	EPBLLC_20230130	Dissolved	Water	218.6	299792
570-125746-1 MSD	EPBLLC_20230130	Total/NA	Water	218.6	

Filtration Batch: 299792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	Filtration	
570-125746-2	EPBBC_20230130	Dissolved	Water	Filtration	
MB 570-299792/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-299792/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-299792/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-125746-1 MS	EPBLLC_20230130	Dissolved	Water	Filtration	
570-125746-1 MSD	EPBLLC_20230130	Dissolved	Water	Filtration	

HPLC/IC

Analysis Batch: 299796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	300.0	
570-125746-1 - DL	EPBLLC_20230130	Total/NA	Water	300.0	
570-125746-2	EPBBC_20230130	Total/NA	Water	300.0	
570-125746-2 - DL	EPBBC_20230130	Total/NA	Water	300.0	
MB 570-299796/5	Method Blank	Total/NA	Water	300.0	
LCS 570-299796/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-299796/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-125769-D-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-125769-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 299797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	300.0	
570-125746-2	EPBBC_20230130	Total/NA	Water	300.0	
MB 570-299797/5	Method Blank	Total/NA	Water	300.0	
LCS 570-299797/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-299797/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-125769-D-1 MS	Matrix Spike	Total/NA	Water	300.0	
570-125769-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 300242

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	314.0	
570-125746-2	EPBBC_20230130	Total/NA	Water	314.0	
MB 570-300242/7	Method Blank	Total/NA	Water	314.0	
LCS 570-300242/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-300242/9	Lab Control Sample Dup	Total/NA	Water	314.0	
570-125769-W-2 MS	Matrix Spike	Total/NA	Water	314.0	
570-125769-W-2 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Metals

Prep Batch: 299846

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total Recoverable	Water	200.8	
570-125746-2	EPBBC_20230130	Total Recoverable	Water	200.8	
MB 570-299846/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-299846/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-299846/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-125746-1 MS	EPBLLC_20230130	Total Recoverable	Water	200.8	
570-125746-1 MSD	EPBLLC_20230130	Total Recoverable	Water	200.8	

Analysis Batch: 300027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total Recoverable	Water	200.8	299846
570-125746-2	EPBBC_20230130	Total Recoverable	Water	200.8	299846
MB 570-299846/1-A	Method Blank	Total Recoverable	Water	200.8	299846
LCS 570-299846/2-A	Lab Control Sample	Total Recoverable	Water	200.8	299846
LCSD 570-299846/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	299846
570-125746-1 MS	EPBLLC_20230130	Total Recoverable	Water	200.8	299846
570-125746-1 MSD	EPBLLC_20230130	Total Recoverable	Water	200.8	299846

Metals

Prep Batch: 300194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total Recoverable	Water	200.7	
MB 570-300194/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-300194/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-300194/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-125908-E-1-B MS	Matrix Spike	Total Recoverable	Water	200.7	
570-125908-E-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Filtration Batch: 300322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	Filtration	
570-125746-2	EPBBC_20230130	Dissolved	Water	Filtration	
MB 570-300322/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-300322/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-300322/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-125840-A-3-A MS	Matrix Spike	Dissolved	Water	Filtration	
570-125840-A-3-B MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 300368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	200.8	300322
570-125746-2	EPBBC_20230130	Dissolved	Water	200.8	300322
MB 570-300322/1-A	Method Blank	Dissolved	Water	200.8	300322
LCS 570-300322/2-A	Lab Control Sample	Dissolved	Water	200.8	300322
LCSD 570-300322/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	300322
570-125840-A-3-A MS	Matrix Spike	Dissolved	Water	200.8	300322
570-125840-A-3-B MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	300322

Analysis Batch: 300475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total Recoverable	Water	200.7 Rev 4.4	300194
MB 570-300194/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	300194
LCS 570-300194/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	300194
LCSD 570-300194/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	300194
570-125908-E-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	300194
570-125908-E-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	300194

Filtration Batch: 300615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	Filtration	
MB 570-300615/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-300615/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-300615/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-125840-A-3-C MS	Matrix Spike	Dissolved	Water	Filtration	
570-125840-A-3-D MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Analysis Batch: 301175

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	200.7 Rev 4.4	300615
MB 570-300615/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	300615
LCS 570-300615/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	300615
LCSD 570-300615/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	300615

Metals (Continued)

Analysis Batch: 301175 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125840-A-3-C MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	300615
570-125840-A-3-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	300615

Prep Batch: 302020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-2	EPBBC_20230130	Total Recoverable	Water	200.7	
MB 570-302020/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-302020/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-302020/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	
570-126678-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.7	
570-126678-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7	

Analysis Batch: 302405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-2	EPBBC_20230130	Total Recoverable	Water	200.7 Rev 4.4	302020
MB 570-302020/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	302020
LCS 570-302020/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	302020
LCSD 570-302020/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	302020
570-126678-A-1-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	302020
570-126678-A-1-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	302020

Filtration Batch: 302883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-2	EPBBC_20230130	Dissolved	Water	Filtration	
MB 570-302883/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-302883/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-302883/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 303170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-2	EPBBC_20230130	Dissolved	Water	200.7 Rev 4.4	302883
MB 570-302883/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	302883
LCS 570-302883/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	302883
LCSD 570-302883/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	302883

General Chemistry

Analysis Batch: 301028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	SM 2540D	
570-125746-2	EPBBC_20230130	Total/NA	Water	SM 2540D	
MB 570-301028/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-301028/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-301028/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-125716-A-4 DU	Duplicate	Total/NA	Water	SM 2540D	

Analysis Batch: 301139

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	Kelada 01	
570-125746-2	EPBBC_20230130	Total/NA	Water	Kelada 01	
MB 570-301139/11	Method Blank	Total/NA	Water	Kelada 01	

General Chemistry (Continued)

Analysis Batch: 301139 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-301139/13	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-301139/14	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-301139/10	Lab Control Sample	Total/NA	Water	Kelada 01	
570-125231-D-7 MS	Matrix Spike	Total/NA	Water	Kelada 01	
570-125231-D-7 MSD	Matrix Spike Duplicate	Total/NA	Water	Kelada 01	
570-125231-F-7 DU	Duplicate	Total/NA	Water	Kelada 01	

Analysis Batch: 301153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	218.6 CR3	
570-125746-2	EPBBC_20230130	Total/NA	Water	218.6 CR3	

Analysis Batch: 301230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-301230/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-301230/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-301230/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-125865-C-1 DU	Duplicate	Total/NA	Water	SM 2540D	

Geotechnical

Analysis Batch: 301228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	D4464	
570-125746-2	EPBBC_20230130	Total/NA	Water	D4464	
LCS 570-301228/22	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-301228/24	Lab Control Sample Dup	Total/NA	Water	D4464	
570-125591-A-1 DU	Duplicate	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Client Sample ID: EPBLLC_20230130

Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		2	5 mL	5 mL	300567	02/02/23 13:59	P3GT	EET CAL 4
	Instrument ID: GCMSXX									
Total/NA	Prep	625			1055.1 mL	2 mL	300946	02/03/23 09:57	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	301419	02/06/23 14:47	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Dissolved	Filtration	Filtration			100 mL	100 mL	299792	01/31/23 01:30	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	299790	01/31/23 05:01	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	299790	01/31/23 02:28	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	299796	01/31/23 06:21	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0		1	4 mL	4 mL	299797	01/31/23 06:21	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0	DL	20	4 mL	4 mL	299796	01/31/23 12:01	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	314.0		1	4 mL	4 mL	300242	02/01/23 13:37	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	300615	02/02/23 10:37	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			301175	02/03/23 15:17	P1R	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	300194	02/01/23 08:34	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			300475	02/01/23 19:42	P1R	EET CAL 4
	Instrument ID: ICP10									
Dissolved	Filtration	Filtration			50 mL	50 mL	300322	02/01/23 13:29	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			300368	02/01/23 14:52	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	299846	01/31/23 08:45	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			300027	01/31/23 13:36	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	218.6 CR3		1			301153	02/03/23 18:39	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	301139	02/03/23 16:43	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	301028	02/03/23 12:20	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Client Sample ID: EPBBC_20230130

Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		2	5 mL	5 mL	300567	02/02/23 14:21	P3GT	EET CAL 4
	Instrument ID: GCMSXX									
Total/NA	Prep	625			1053.1 mL	2 mL	300946	02/03/23 09:57	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	301419	02/06/23 15:08	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Dissolved	Filtration	Filtration			100 mL	100 mL	299792	01/31/23 01:30	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	299790	01/31/23 05:13	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	299790	01/31/23 02:40	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	299796	01/31/23 06:39	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0		1	4 mL	4 mL	299797	01/31/23 06:39	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0	DL	10	4 mL	4 mL	299796	01/31/23 09:56	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	314.0		1	4 mL	4 mL	300242	02/01/23 14:19	M5Z3	EET CAL 4
	Instrument ID: IC13									
Dissolved	Filtration	Filtration			50 mL	50 mL	302883	02/10/23 13:06	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			303170	02/11/23 00:39	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	302020	02/08/23 07:02	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			302405	02/08/23 22:23	K1UV	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	300322	02/01/23 13:29	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			300368	02/01/23 14:55	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	299846	01/31/23 08:45	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			300027	01/31/23 13:43	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	218.6 CR3		1			301153	02/03/23 18:39	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	301139	02/03/23 16:50	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	301028	02/03/23 12:20	WVA4	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
625	Liquid-Liquid Extraction	40CFR136A	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-125746-1	EPBLLC_20230130	Water	01/30/23 09:30	01/30/23 17:39
570-125746-2	EPBBC_20230130	Water	01/30/23 08:40	01/30/23 17:39

125746

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 11/30/2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E905, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E905, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.8: B, Zn; – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.8: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-1 L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly (HNO3)	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA (HCl)	2-1L Amber	1-500mL Poly (NaOH)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_20230130	1-30-23	0930	G	WM	21	N	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
~~EPBMC_~~			~~G~~	~~WM~~	~~21~~			~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	NW
EPBBC_20230130	1-30-23	0840	G	WM	21	N	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
~~EPBCC_~~																									NW
~~EPBLC_~~			G	WM																					NW
Preservation Used: 1= Ice, 2= HCl; 3= HZSO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5		

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich AP@haleyaldrich.com. Report Level: Data Package Standard. Provide MDL. All dissolved samples are to be filtered within 24 hours of receipt. Even if none are placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, 0.005 ug/L).

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by: M. Dallagh	Company: H&A	Date/Time: 1-30-2023 1730	Received by:
Relinquished by:	Company: EC	Date/Time: 1-30-23 1739	Received by: 1-30-23 1330
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: 11/30/23 1739

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

570-125746 Chain of Custody

16/16, 20/20, 1.3/13, 19/19 SCH

2/15/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-205688 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-125746-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/15/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M Hexane
N - None
O AsNaO2
P - Na2O4S
Q Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_20230130 (570-125746-1)	1/30/23	09 30 Pacific		Water			X	X	2	
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 1/31/23 1241	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s).	COC No: 570-205692 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-125746-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230130 (570-125746-1)	1/30/23	09.30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/31/23 1255				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No.: 570-205704 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-125746-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/2/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230130 (570-125746-1)	1/30/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/31/23 1304	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

2/15/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-125746-1

Login Number: 125746
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-125746-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

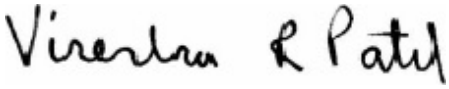
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-125746-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-125746-2

Comments
No additional comments.

Receipt
The samples were received on 1/30/2023 5:39 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.3º C, 1.6º C, 1.9º C and 2.0º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: EPBLLC_20230130 (570-125746-1), (CCV 320-652668/2) and (MB 320-651919/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-2

Client Sample ID: EPBLLC_20230130 — Lab Sample ID: 570-125746-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.00000039	J,DX MB q	0.000050	0.00000028	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.00000060	J,DX MB q	0.000050	0.00000013	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000040	J,DX MB	0.000050	0.00000016	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000022	J,DX MB	0.000050	0.00000022	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000055	J,DX MB	0.000050	0.00000021	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000052	J,DX MB	0.000050	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000050	J,DX MB q	0.000050	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000042	J,DX MB q	0.000050	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000058	J,DX MB q	0.000050	0.00000014	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000029	J,DX MB	0.000050	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000011	J,DX MB	0.000050	0.00000013	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000010	J,DX MB	0.000050	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000033	J,DX MB q	0.000050	0.00000020	ug/L	1		1613B	Total/NA
OCDD	0.0000037	J,DX MB	0.00010	0.00000033	ug/L	1		1613B	Total/NA
OCDF	0.0000011	J,DX MB q	0.00010	0.00000029	ug/L	1		1613B	Total/NA
Total TCDF	0.00000058	J,DX MB q	0.000010	0.00000014	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000039	J,DX MB q	0.000050	0.00000028	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000010	J,DX MB q	0.000050	0.00000013	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000037	J,DX MB q	0.000050	0.00000019	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000018	J,DX MB q	0.000050	0.00000012	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000025	J,DX MB q	0.000050	0.00000013	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000014	J,DX MB q	0.000050	0.00000019	ug/L	1		1613B	Total/NA

Client Sample ID: EPBBC_20230130 — Lab Sample ID: 570-125746-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.00000030	J,DX MB q	0.000048	0.00000013	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000021	J,DX MB q	0.000048	0.00000018	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000053	J,DX MB	0.000048	0.00000017	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000058	J,DX MB	0.000048	0.00000015	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000062	J,DX MB q	0.000048	0.00000013	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample ID: EPBBC_20230130 (Continued)

Lab Sample ID: 570-125746-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,6,7,8-HxCDF	0.00000027	J,DX MB q	0.000048	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000069	J,DX MB	0.000048	0.00000010	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000027	J,DX MB q	0.000048	0.00000096	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000027	J,DX MB	0.000048	0.00000017	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00000087	J,DX MB q	0.000048	0.00000019	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.00000035	J,DX MB q	0.000048	0.00000019	ug/L	1		1613B	Total/NA
OCDD	0.000012	J,DX MB	0.000096	0.00000031	ug/L	1		1613B	Total/NA
OCDF	0.0000016	J,DX MB q	0.000096	0.00000018	ug/L	1		1613B	Total/NA
Total TCDF	0.00000043	J,DX MB	0.0000096	0.00000011	ug/L	1		1613B	Total/NA
Total PeCDD	0.00000032	J,DX MB q	0.000048	0.00000019	ug/L	1		1613B	Total/NA
Total PeCDF	0.00000030	J,DX MB q	0.000048	0.00000013	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000037	J,DX MB q	0.000048	0.00000015	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000018	J,DX MB q	0.000048	0.00000096	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000047	J,DX MB q	0.000048	0.00000017	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000016	J,DX MB q	0.000048	0.00000019	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 0v:30
Date Receiyed: 01/30/23 17:3v

Lab Sample ID: 570-125786-1
Matrix: Water

Analzte	Result	f uali.ier	RL	EDL	Qnit	D	Prepared	AnalzUed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000031	ug/L		02/06/23 05:11	02/08/23 17:27	1
1X2X3X7X8-PeCDD	0.0000003v	, XDq MB 4	0.000050	0.00000028	ug/L		02/06/23 05:11	02/08/23 17:27	1
1X2X3X7X8-PeCDF	0.00000060	, XDq MB 4	0.000050	0.00000013	ug/L		02/06/23 05:11	02/08/23 17:27	1
2X3X4X7X8-PeCDF	0.00000080	, XDq MB	0.000050	0.00000016	ug/L		02/06/23 05:11	02/08/23 17:27	1
1X2X3X4X7X8-HxCDD	0.0000022	, XDq MB	0.000050	0.00000022	ug/L		02/06/23 05:11	02/08/23 17:27	1
1X2X3X6X7X8-HxCDD	0.00000055	, XDq MB	0.000050	0.00000021	ug/L		02/06/23 05:11	02/08/23 17:27	1
1X2X3X7X8X-HxCDD	0.00000052	, XDq MB	0.000050	0.00000019	ug/L		02/06/23 05:11	02/08/23 17:27	1
1X2X3X4X7X8-HxCDF	0.00000050	, XDq MB 4	0.000050	0.00000015	ug/L		02/06/23 05:11	02/08/23 17:27	1
1X2X3X6X7X8-HxCDF	0.00000082	, XDq MB 4	0.000050	0.00000014	ug/L		02/06/23 05:11	02/08/23 17:27	1
1X2X3X7X8X-HxCDF	0.00000059	, XDq MB 4	0.000050	0.00000014	ug/L		02/06/23 05:11	02/08/23 17:27	1
2X3X4X6X7X8-HxCDF	0.0000002v	, XDq MB	0.000050	0.00000012	ug/L		02/06/23 05:11	02/08/23 17:27	1
1X2X3X4X6X7X8-HpCDD	0.0000011	, XDq MB	0.000050	0.00000013	ug/L		02/06/23 05:11	02/08/23 17:27	1
1X2X3X4X6X7X8-HpCDF	0.0000010	, XDq MB	0.000050	0.00000019	ug/L		02/06/23 05:11	02/08/23 17:27	1
1X2X3X4X7X8X-HpCDF	0.00000033	, XDq MB 4	0.000050	0.00000020	ug/L		02/06/23 05:11	02/08/23 17:27	1
OCDD	0.0000037	, XDq MB	0.00010	0.00000033	ug/L		02/06/23 05:11	02/08/23 17:27	1
OCDF	0.0000011	, XDq MB 4	0.00010	0.00000029	ug/L		02/06/23 05:11	02/08/23 17:27	1
Total TCDD	ND		0.000010	0.00000031	ug/L		02/06/23 05:11	02/08/23 17:27	1
Total TCDF	0.00000059	, XDq MB 4	0.000010	0.00000014	ug/L		02/06/23 05:11	02/08/23 17:27	1
Total PeCDD	0.0000003v	, XDq MB 4	0.000050	0.00000028	ug/L		02/06/23 05:11	02/08/23 17:27	1
Total PeCDF	0.0000010	, XDq MB 4	0.000050	0.00000013	ug/L		02/06/23 05:11	02/08/23 17:27	1
Total HxCDD	0.0000037	, XDq MB 4	0.000050	0.00000019	ug/L		02/06/23 05:11	02/08/23 17:27	1
Total HxCDF	0.0000019	, XDq MB 4	0.000050	0.00000012	ug/L		02/06/23 05:11	02/08/23 17:27	1
Total HpCDD	0.0000025	, XDq MB 4	0.000050	0.00000013	ug/L		02/06/23 05:11	02/08/23 17:27	1
Total HpCDF	0.0000018	, XDq MB 4	0.000050	0.00000019	ug/L		02/06/23 05:11	02/08/23 17:27	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*25 - 164*	*02/06/23 05:11*	*02/08/23 17:27*	*1*
13C-2,3,7,8-TCDF	*67*		*24 - 169*	*02/06/23 05:11*	*02/08/23 17:27*	*1*
13C-1,2,3,7,8-PeCDD	*68*		*25 - 181*	*02/06/23 05:11*	*02/08/23 17:27*	*1*
13C-1,2,3,7,8-PeCDF	*70*		*24 - 185*	*02/06/23 05:11*	*02/08/23 17:27*	*1*
13C-2,3,4,7,8-PeCDF	*67*		*21 - 178*	*02/06/23 05:11*	*02/08/23 17:27*	*1*
13C-1,2,3,4,7,8-HxCDD	*63*		*32 - 141*	*02/06/23 05:11*	*02/08/23 17:27*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 0v:30
Date Receiyed: 01/30/23 17:3v

Lab Sample ID: 570-125786-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDD	72		28 - 130	02/06/23 05:11	02/08/23 17:27	1
13C-1,2,3,4,7,8-HxCDF	59		26 - 152	02/06/23 05:11	02/08/23 17:27	1
13C-1,2,3,6,7,8-HxCDF	70		26 - 123	02/06/23 05:11	02/08/23 17:27	1
13C-1,2,3,7,8,9-HxCDF	77		29 - 147	02/06/23 05:11	02/08/23 17:27	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136	02/06/23 05:11	02/08/23 17:27	1
13C-1,2,3,4,6,7,8-HpCDD	71		23 - 140	02/06/23 05:11	02/08/23 17:27	1
13C-1,2,3,4,6,7,8-HpCDF	66		28 - 143	02/06/23 05:11	02/08/23 17:27	1
13C-1,2,3,4,7,8,9-HpCDF	74		26 - 138	02/06/23 05:11	02/08/23 17:27	1
13C-OCDD	72		17 - 157	02/06/23 05:11	02/08/23 17:27	1
13C-OCDF	72		17 - 157	02/06/23 05:11	02/08/23 17:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	83		35 - 197	02/06/23 05:11	02/08/23 17:27	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 09:80
Date Receiyed: 01/30/23 17:3v

Lab Sample ID: 570-125786-2
Matrix: Water

Analzte	Result	f ualiier	RL	EDL	Qnit	D	Prepared	AnalzUed	Dil Fac
2,3,7,8-TCDD	ND		0.0000096	0.00000027	ug/L		02/06/23 05:11	02/08/23 18:13	1
2,3,7,8-TCDF	ND		0.0000096	0.00000011	ug/L		02/06/23 05:11	02/08/23 18:13	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000019	ug/L		02/06/23 05:11	02/08/23 18:13	1
1X2X3X7X8-PeCDF	0.J0000030	, XDq MB 4	0.000048	0.00000013	ug/L		02/06/23 05:11	02/08/23 18:13	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000016	ug/L		02/06/23 05:11	02/08/23 18:13	1
1X2X3X6X7X8-HxCDD	0.J000021	, XDq MB 4	0.000048	0.00000018	ug/L		02/06/23 05:11	02/08/23 18:13	1
1X2X3X6X7X8-HxCDD	0.J0000053	, XDq MB	0.000048	0.00000017	ug/L		02/06/23 05:11	02/08/23 18:13	1
1X2X3X7X8X-HxCDD	0.J0000059	, XDq MB	0.000048	0.00000015	ug/L		02/06/23 05:11	02/08/23 18:13	1
1X2X3X7X8-HxCDF	0.J0000062	, XDq MB 4	0.000048	0.00000013	ug/L		02/06/23 05:11	02/08/23 18:13	1
1X2X3X6X7X8-HxCDF	0.J0000027	, XDq MB 4	0.000048	0.00000012	ug/L		02/06/23 05:11	02/08/23 18:13	1
1X2X3X7X8X-HxCDF	0.J000006v	, XDq MB	0.000048	0.00000010	ug/L		02/06/23 05:11	02/08/23 18:13	1
2X3X4X6X7X8-HxCDF	0.J0000027	, XDq MB 4	0.000048	0.00000096	ug/L		02/06/23 05:11	02/08/23 18:13	1
1X2X3X4X6X7X8-HpCDD	0.J000027	, XDq MB	0.000048	0.00000017	ug/L		02/06/23 05:11	02/08/23 18:13	1
1X2X3X4X6X7X8-HpCDF	0.J0000097	, XDq MB 4	0.000048	0.00000019	ug/L		02/06/23 05:11	02/08/23 18:13	1
1X2X3X4X7X8X-HpCDF	0.J0000035	, XDq MB 4	0.000048	0.00000019	ug/L		02/06/23 05:11	02/08/23 18:13	1
OCDD	0.J00012	, XDq MB	0.000096	0.00000031	ug/L		02/06/23 05:11	02/08/23 18:13	1
OCDF	0.J0000016	, XDq MB 4	0.000096	0.00000018	ug/L		02/06/23 05:11	02/08/23 18:13	1
Total TCDD	ND		0.0000096	0.00000027	ug/L		02/06/23 05:11	02/08/23 18:13	1
Total TCDF	0.J0000083	, XDq MB	0.0000096	0.00000011	ug/L		02/06/23 05:11	02/08/23 18:13	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 09:80
Date Receiyed: 01/30/23 17:3v

Lab Sample ID: 570-125786-2
Matrix: Water

Analzte	Result	f uali.ier	RL	EDL	Qnit	D	Prepared	AnalzUed	Dil Fac
Total PeCDD	0.0000032	, XDq MB 4	0.000048	0.00000019	ug/L		02/06/23 05:11	02/08/23 18:13	1
Total PeCDF	0.0000030	, XDq MB 4	0.000048	0.00000013	ug/L		02/06/23 05:11	02/08/23 18:13	1
Total HxCDD	0.0000037	, XDq MB 4	0.000048	0.00000015	ug/L		02/06/23 05:11	02/08/23 18:13	1
Total HxCDF	0.0000019	, XDq MB 4	0.000048	0.0000000096	ug/L		02/06/23 05:11	02/08/23 18:13	1
Total HpCDD	0.0000087	, XDq MB 4	0.000048	0.00000017	ug/L		02/06/23 05:11	02/08/23 18:13	1
Total HpCDF	0.0000016	, XDq MB 4	0.000048	0.00000019	ug/L		02/06/23 05:11	02/08/23 18:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*75*		*25 - 164*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-2,3,7,8-TCDF	*72*		*24 - 169*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-1,2,3,7,8-PeCDD	*72*		*25 - 181*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-1,2,3,7,8-PeCDF	*74*		*24 - 185*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-2,3,4,7,8-PeCDF	*68*		*21 - 178*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-1,2,3,4,7,8-HxCDD	*59*		*32 - 141*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-1,2,3,6,7,8-HxCDD	*71*		*28 - 130*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-1,2,3,4,7,8-HxCDF	*55*		*26 - 152*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-1,2,3,6,7,8-HxCDF	*68*		*26 - 123*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-1,2,3,7,8,9-HxCDF	*83*		*29 - 147*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-2,3,4,6,7,8-HxCDF	*81*		*28 - 136*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*76*		*23 - 140*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*64*		*28 - 143*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*78*		*26 - 138*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-OCDD	*79*		*17 - 157*	*02/06/23 05:11*	*02/08/23 18:13*	*1*
13C-OCDF	*77*		*17 - 157*	*02/06/23 05:11*	*02/08/23 18:13*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*83*		*35 - 197*	*02/06/23 05:11*	*02/08/23 18:13*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 0v:30
Date Receiyed: 01/30/23 17:3v

Lab Sample ID: 570-125786-1
Matrix: Water

Analzte	Result	f uali.ier	RL	EDL	Qnit	D	Prepared	AnalzUed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.00000037	ug/L		02/06/23 05:11	02/09/23 16:58	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*63*		*24 - 169*	*02/06/23 05:11*	*02/09/23 16:58*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*90*		*35 - 197*	*02/06/23 05:11*	*02/09/23 16:58*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-125746-1	EPBLLC_20230130	83
570-125746-1 - RA	EPBLLC_20230130	90
570-125746-2	EPBBC_20230130	83
MB 320-651919/1-A	Method Blank	87
MB 320-651919/1-A - RA	Method Blank	90

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-651919/2-A	Lab Control Sample	85
LCSD 320-651919/3-A	Lab Control Sample Dup	89

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
		Percent Isotope Dilution Recovery (Acceptance Limits)							
570-12574C-1	_j gRRI 9202E01E0	C3	C7	C8	70	C7	CE	72	53
570-12574C-1 - Md	_j gRRI 9202E01E0		CE						
570-12574C-2	_j ggl 9202E01E0	75	72	72	74	C8	53	71	55
6 g E20-C51313S1-d	6 nH,lor giyt k	C8	C5	C4	CC	C2	57	CE	5E
6 g E20-C51313S1-d - Md	6 nH,lor giyt k		55						

Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
		Percent Isotope Dilution Recovery (Acceptance Limits)							
570-12574C-1	_j gRRI 9202E01E0	70	77	78	71	CC	74	72	72
570-12574C-1 - Md	_j gRRI 9202E01E0								
570-12574C-2	_j ggl 9202E01E0	C8	8E	81	7C	C4	78	73	77
6 g E20-C51313S1-d	6 nH,lor giyt k	C2	74	72	C5	57	C7	CC	C4
6 g E20-C51313S1-d - Md	6 nH,lor giyt k								

Surrogate Legend

TI DD = 1EI -2.E.7.8-TI DD
TI DL = 1EI -2.E.7.8-TI DL
j nl DD = 1EI -1.2.E.7.8-j nl DD
j nl DL = 1EI -1.2.E.7.8-j nl DL
j nl L = 1EI -2.E.4.7.8-j nl DL
a xl DD = 1EI -1.2.E.4.7.8-a xl DD
a xDD = 1EI -1.2.E.C.7.8-a xl DD
a xl DL = 1EI -1.2.E.4.7.8-a xl DL
a xDL = 1EI -1.2.E.C.7.8-a xl DL
a xl L = 1EI -1.2.E.7.8.3-a xl DL
1EI a xl L = 1EI -2.E.4.C.7.8-a xl DL
a pl DD = 1EI -1.2.E.4.C.7.8-a pl DD
a pl DL = 1EI -1.2.E.4.C.7.8-a pl DL
a pl DL2 = 1EI -1.2.E.4.7.8.3-a pl DL
OI DD = 1EI -OI DD
OI DL = 1EI -OI DL

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
		Percent Isotope Dilution Recovery (Acceptance Limits)							
RI B E20-C51313S2-d	Ryb l ot Hoi Bympin	C3	C7	CE	C5	57	51	C0	47
RI BD E20-C51313SE-d	Ryb l ot Hoi Bympin Dup	74	72	72	75	C7	58	CC	50

Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
		Percent Isotope Dilution Recovery (Acceptance Limits)							
RI B E20-C51313S2-d	Ryb l ot Hoi Bympin	57	77	7E	C7	54	71	72	C3
RI BD E20-C51313SE-d	Ryb l ot Hoi Bympin Dup	C2	82	78	74	C0	73	84	81

Surrogate Legend

TI DD = 1EI -2.E.7.8-TI DD
TI DL = 1EI -2.E.7.8-TI DL
j nl DD = 1EI -1.2.E.7.8-j nl DD

Isotope Dilution Summary

- j nl DL = 1Ð -1.2.E.7.8-j nl DL
- j nl L = 1Ð -2.E.4.7.8-j nl DL
- a xl DD = 1Ð -1.2.E.4.7.8-a xl DD
- a xDD = 1Ð -1.2.E.C.7.8-a xl DD
- a xl DL = 1Ð -1.2.E.4.7.8-a xl DL
- a xDL = 1Ð -1.2.E.C.7.8-a xl DL
- a xl L = 1Ð -1.2.E.7.8.3-a xl DL
- 1Ð a xl L = 1Ð -2.E.4.C.7.8-a xl DL
- a pl DD = 1Ð -1.2.E.4.C.7.8-a pl DD
- a pl DL = 1Ð -1.2.E.4.C.7.8-a pl DL
- a pl DL2 = 1Ð -1.2.E.4.7.8.3-a pl DL
- Ol DD = 1Ð -Ol DD
- Ol DL = 1Ð -Ol DL

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-651919/1-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651919

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000032	ug/L		02/06/23 05:11	02/08/23 14:21	1
2,3,7,8-TCDF	0.000000363	J,DX	0.000010	0.00000015	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,7,8-PeCDD	0.000000447	J,DX	0.000050	0.00000027	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,7,8-PeCDF	0.000000684	J,DX	0.000050	0.00000017	ug/L		02/06/23 05:11	02/08/23 14:21	1
2,3,4,7,8-PeCDF	0.000000486	J,DX	0.000050	0.00000021	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,4,7,8-HxCDD	0.00000167	J,DX q	0.000050	0.00000026	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,6,7,8-HxCDD	0.000000541	J,DX q	0.000050	0.00000025	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,7,8,9-HxCDD	0.000000824	J,DX q	0.000050	0.00000023	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,4,7,8-HxCDF	0.000000740	J,DX q	0.000050	0.00000019	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,6,7,8-HxCDF	0.000000445	J,DX	0.000050	0.00000017	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,7,8,9-HxCDF	0.000000716	J,DX	0.000050	0.00000016	ug/L		02/06/23 05:11	02/08/23 14:21	1
2,3,4,6,7,8-HxCDF	0.000000418	J,DX	0.000050	0.00000014	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,4,6,7,8-HpCDD	0.00000131	J,DX q	0.000050	0.00000019	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,4,6,7,8-HpCDF	0.00000171	J,DX	0.000050	0.00000022	ug/L		02/06/23 05:11	02/08/23 14:21	1
1,2,3,4,7,8,9-HpCDF	0.000000934	J,DX	0.000050	0.00000022	ug/L		02/06/23 05:11	02/08/23 14:21	1
OCDD	0.00000304	J,DX q	0.00010	0.00000029	ug/L		02/06/23 05:11	02/08/23 14:21	1
OCDF	0.00000225	J,DX	0.00010	0.00000021	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total TCDD	ND		0.000010	0.00000032	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total TCDF	0.000000589	J,DX q	0.000010	0.00000015	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total PeCDD	0.000000876	J,DX q	0.000050	0.00000027	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total PeCDF	0.00000117	J,DX	0.000050	0.00000017	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total HxCDD	0.00000332	J,DX q	0.000050	0.00000023	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total HxCDF	0.00000268	J,DX q	0.000050	0.00000014	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total HpCDD	0.00000304	J,DX q	0.000050	0.00000019	ug/L		02/06/23 05:11	02/08/23 14:21	1
Total HpCDF	0.00000265	J,DX	0.000050	0.00000022	ug/L		02/06/23 05:11	02/08/23 14:21	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*68*		*25 - 164*	*02/06/23 05:11*	*02/08/23 14:21*	*1*
13C-2,3,7,8-TCDF	*65*		*24 - 169*	*02/06/23 05:11*	*02/08/23 14:21*	*1*
13C-1,2,3,7,8-PeCDD	*64*		*25 - 181*	*02/06/23 05:11*	*02/08/23 14:21*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-651919/1-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651919

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	66		24 - 185	02/06/23 05:11	02/08/23 14:21	1
13C-2,3,4,7,8-PeCDF	62		21 - 178	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,4,7,8-HxCDD	57		32 - 141	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,6,7,8-HxCDD	63		28 - 130	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,4,7,8-HxCDF	53		26 - 152	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,6,7,8-HxCDF	62		26 - 123	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,7,8,9-HxCDF	74		29 - 147	02/06/23 05:11	02/08/23 14:21	1
13C-2,3,4,6,7,8-HxCDF	72		28 - 136	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,4,6,7,8-HpCDD	65		23 - 140	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,4,6,7,8-HpCDF	57		28 - 143	02/06/23 05:11	02/08/23 14:21	1
13C-1,2,3,4,7,8,9-HpCDF	67		26 - 138	02/06/23 05:11	02/08/23 14:21	1
13C-OCDD	66		17 - 157	02/06/23 05:11	02/08/23 14:21	1
13C-OCDF	64		17 - 157	02/06/23 05:11	02/08/23 14:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	87		35 - 197	02/06/23 05:11	02/08/23 14:21	1

Lab Sample ID: LCS 320-651919/2-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651919

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000216		ug/L		108	67 - 158		
2,3,7,8-TCDF			0.000200	0.000235	MB	ug/L		118	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.00102	MB	ug/L		102	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.00105	MB	ug/L		105	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.00105	MB	ug/L		105	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.00101	MB	ug/L		101	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.00106	MB	ug/L		106	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.00136	MB	ug/L		136	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.00104	MB	ug/L		104	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.00106	MB	ug/L		106	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.00104	MB	ug/L		104	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.00105	MB	ug/L		105	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.00106	MB	ug/L		106	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.00108	MB	ug/L		108	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.00106	MB	ug/L		106	78 - 138		
OCDD			0.00200	0.00209	MB	ug/L		105	78 - 144		
OCDF			0.00200	0.00223	MB	ug/L		112	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	69		20 - 175
13C-2,3,7,8-TCDF	67		22 - 152
13C-1,2,3,7,8-PeCDD	63		21 - 227
13C-1,2,3,7,8-PeCDF	65		21 - 192
13C-2,3,4,7,8-PeCDF	57		13 - 328
13C-1,2,3,4,7,8-HxCDD	51		21 - 193
13C-1,2,3,6,7,8-HxCDD	60		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-651919/2-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 651919

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	47		19 - 202
13C-1,2,3,6,7,8-HxCDF	57		21 - 159
13C-1,2,3,7,8,9-HxCDF	77		17 - 205
13C-2,3,4,6,7,8-HxCDF	73		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	67		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	54		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	71		20 - 186
13C-OCDD	72		13 - 199
13C-OCDF	69		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-651919/3-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651919

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000214		ug/L		107	67 - 158	1	50
2,3,7,8-TCDF			0.000200	0.000231	MB	ug/L		115	75 - 158	2	50
1,2,3,7,8-PeCDD			0.00100	0.00104	MB	ug/L		104	70 - 142	2	50
1,2,3,7,8-PeCDF			0.00100	0.00103	MB	ug/L		103	80 - 134	2	50
2,3,4,7,8-PeCDF			0.00100	0.00105	MB	ug/L		105	68 - 160	0	50
1,2,3,4,7,8-HxCDD			0.00100	0.00105	MB	ug/L		105	70 - 164	3	50
1,2,3,6,7,8-HxCDD			0.00100	0.00104	MB	ug/L		104	76 - 134	2	50
1,2,3,7,8,9-HxCDD			0.00100	0.00128	MB	ug/L		128	64 - 162	6	50
1,2,3,4,7,8-HxCDF			0.00100	0.00107	MB	ug/L		107	72 - 134	3	50
1,2,3,6,7,8-HxCDF			0.00100	0.00105	MB	ug/L		105	84 - 130	1	50
1,2,3,7,8,9-HxCDF			0.00100	0.00105	MB	ug/L		105	78 - 130	1	50
2,3,4,6,7,8-HxCDF			0.00100	0.00104	MB	ug/L		104	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00106	MB	ug/L		106	70 - 140	0	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00107	MB	ug/L		107	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00107	MB	ug/L		107	78 - 138	0	50
OCDD			0.00200	0.00207	MB	ug/L		103	78 - 144	1	50
OCDF			0.00200	0.00220	MB	ug/L		110	63 - 170	1	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	74		20 - 175
13C-2,3,7,8-TCDF	72		22 - 152
13C-1,2,3,7,8-PeCDD	72		21 - 227
13C-1,2,3,7,8-PeCDF	75		21 - 192
13C-2,3,4,7,8-PeCDF	67		13 - 328
13C-1,2,3,4,7,8-HxCDD	58		21 - 193
13C-1,2,3,6,7,8-HxCDD	66		25 - 163
13C-1,2,3,4,7,8-HxCDF	50		19 - 202
13C-1,2,3,6,7,8-HxCDF	62		21 - 159
13C-1,2,3,7,8,9-HxCDF	82		17 - 205
13C-2,3,4,6,7,8-HxCDF	78		22 - 176

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-651919/3-A
Matrix: Water
Analysis Batch: 652545

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 651919

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	74		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	60		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	79		20 - 186
13C-OCDD	84		13 - 199
13C-OCDF	81		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	89		31 - 191

Method: 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Lab Sample ID: MB 320-651919/1-A
Matrix: Water
Analysis Batch: 652668

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 651919

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF - RA	ND		0.000010	0.00000057	ug/L		02/06/23 05:11	02/09/23 15:44	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF - RA	55		24 - 169	02/06/23 05:11	02/09/23 15:44	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD - RA	90		35 - 197	02/06/23 05:11	02/09/23 15:44	1

Specialty Organics

Prep Batch: 651919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1 - RA	EPBLLC_20230130	Total/NA	Water	1613B	
570-125746-1	EPBLLC_20230130	Total/NA	Water	1613B	
570-125746-2	EPBBC_20230130	Total/NA	Water	1613B	
MB 320-651919/1-A - RA	Method Blank	Total/NA	Water	1613B	
MB 320-651919/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-651919/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-651919/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 652545

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	1613B	651919
570-125746-2	EPBBC_20230130	Total/NA	Water	1613B	651919
MB 320-651919/1-A	Method Blank	Total/NA	Water	1613B	651919
LCS 320-651919/2-A	Lab Control Sample	Total/NA	Water	1613B	651919
LCSD 320-651919/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	651919

Analysis Batch: 652668

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1 - RA	EPBLLC_20230130	Total/NA	Water	1613B	651919
MB 320-651919/1-A - RA	Method Blank	Total/NA	Water	1613B	651919

Lab Chronicle

Client: Haley & Aldrich, Inc.
j ro/ectSite: goeinF BBLRIBMA and gp j

Job ID: 570-12579P-2

Client Sample ID: EPBLLC_20230130

Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
4otalST A	j re6	1P13g	MA		1009.E NR	20.0 mR	P51E1E	02S0PS23 05:11	LC	884 BAC
4otalST A	Analyuiu	1P13g	MA	1	1 mR	1 mR	P52PPs	02S0ES23 1P:5s	Dg	884 BAC
	InutrmNent ID: 11D2									
4otalST A	j re6	1P13g			1009.E NR	20.0 mR	P51E1E	02S0PS23 05:11	LC	884 BAC
4otalST A	Analyuiu	1P13g		1	1 BaN6le	1 BaN6le	P52595	02S0sS23 17:27	GMg	884 BAC
	InutrmNent ID: 12D5									

Client Sample ID: EPBBC_20230130

Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
4otalST A	j re6	1P13g			109P.P NR	20.0 mR	P51E1E	02S0PS23 05:11	LC	884 BAC
4otalST A	Analyuiu	1P13g		1	1 BaN6le	1 BaN6le	P52595	02S0sS23 1s:13	GMg	884 BAC
	InutrmNent ID: 12D5									

Laboratory References:

884 BAC f 8mro÷nu BacraNento, ss0 Miveruide j arkway, Weut BacraNento, CA E5P05, 48R(E1P)373-5P00

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-2

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-2

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-125746-1	EPBLLC_20230130	Water	01/30/23 09:30	01/30/23 17:39
570-125746-2	EPBBC_20230130	Water	01/30/23 08:40	01/30/23 17:39

125746

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 11/30/2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E905, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E905, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.8: B, Zn – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.8: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-1 L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly (HNO3)	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA (HCl)	2-1L Amber	1-500mL Poly (NaOH)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_20230130	1-30-23	0930	G	WM	21	N	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
~~EPBMC_~~			~~G~~	~~WM~~	~~21~~			~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	MW
EPBBC_20230130	1-30-23	0840	G	WM	21	N	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
~~EPBCC_~~																									MW
~~EPBLC_~~			G	WM																					MW

Preservation Used: 1= Ice, 2= HCl; 3= HZSO4; 4=HNO3; 5=NaOH; 6= Other ____

	1	1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich AP@haleyaldrich.com. Report Level: Data Package and provide MDL. All dissolved samples are to be filtered within 24 hours of receipt even if they are placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, 0.005 ug/L).

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by: M. Dallagh	Company: H&A	Date/Time: 1-30-2023 1230	Received by:
Relinquished by:	Company: EC	Date/Time: 1-30-23 1739	Received by: 1-30-23 1330
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: 11/30/23 1739

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

570-125746 Chain of Custody

16/16, 20/20, 13/13, 19/19 SCH

2/13/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-205688 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-125746-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/15/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_20230130 (570-125746-1)	1/30/23	09 30 Pacific		Water			X	X	2	
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2

Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

1/31/23 1241 EC

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s).	COC No: 570-205692 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-125746-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230130 (570-125746-1)	1/30/23	09.30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/31/23 1255				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No.: 570-205704 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-125746-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/2/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230130 (570-125746-1)	1/30/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/31/23 1304	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-205692.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-125746-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230130 (570-125746-1)	1/30/23	09:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPBBC_20230130 (570-125746-2)	1/30/23	08:40 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/31/23 1255			2/1/23 1030	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 4.3c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-125746-2

Login Number: 125746
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-125746-2

Login Number: 125746
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 02/01/23 02:05 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.3c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-125746-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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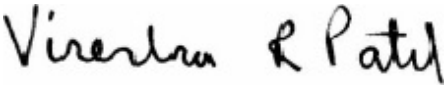
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-3

Qualifiers

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-125746-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-125746-3

Comments
No additional comments.

Receipt
The samples were received on 1/30/2023 5:39 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.3º C, 1.6º C, 1.9º C and 2.0º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-3

Client Sample ID: EPBLLC_20230130 — Lab Sample ID: 570-125746-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0020		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0020	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: EPBBC_20230130 — Lab Sample ID: 570-125746-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0041		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0031	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-3

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020		0.00050	0.000079	ug/L			02/02/23 18:23	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0041		0.00050	0.000079	ug/L			02/02/23 18:31	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-3

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBLLC_20230130
Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0020	MB	0.00050	0.000079	ug/L			02/02/23 18:27	1

Client Sample ID: EPBBC_20230130
Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0031	MB	0.00050	0.000079	ug/L			02/02/23 18:36	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-416997/19
Matrix: Water
Analysis Batch: 416997

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			02/02/23 12:06	1

Lab Sample ID: MB 580-416997/20
Matrix: Water
Analysis Batch: 416997

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			02/02/23 12:11	1

Lab Sample ID: MB 580-416997/23
Matrix: Water
Analysis Batch: 416997

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			02/02/23 12:23	1

Lab Sample ID: LCS 580-416997/29
Matrix: Water
Analysis Batch: 416997

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00495		ug/L		99	77 - 123		

Lab Sample ID: LCSD 580-416997/30
Matrix: Water
Analysis Batch: 416997

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00492		ug/L		98	77 - 123	1	24

Lab Sample ID: 580-122904-A-2 MS
Matrix: Water
Analysis Batch: 416997

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.0057		0.0100	0.0137		ug/L		80	71 - 125		

Lab Sample ID: 580-122904-A-2 MSD
Matrix: Water
Analysis Batch: 416997

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0057		0.0100	0.0143		ug/L		86	71 - 125	4	24

Lab Sample ID: 580-122913-A-3 MS
Matrix: Water
Analysis Batch: 416997

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.0023		0.00500	0.00721		ug/L		99	71 - 125		

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: 580-122913-A-3 MSD
Matrix: Water
Analysis Batch: 416997

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.0023		0.00500	0.00679		ug/L		90	71 - 125	6	24

Lab Sample ID: MB 580-416817/1-A
Matrix: Water
Analysis Batch: 416997

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000151	J,DX	0.00050	0.000079	ug/L			02/02/23 12:31	1

Metals

Filtration Batch: 416817

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	Filtration	
570-125746-2	EPBBC_20230130	Dissolved	Water	Filtration	
MB 580-416817/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 416997

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	1631E	416817
570-125746-1	EPBLLC_20230130	Total/NA	Water	1631E	
570-125746-2	EPBBC_20230130	Dissolved	Water	1631E	416817
570-125746-2	EPBBC_20230130	Total/NA	Water	1631E	
MB 580-416817/1-A	Method Blank	Dissolved	Water	1631E	416817
MB 580-416997/19	Method Blank	Total/NA	Water	1631E	
MB 580-416997/20	Method Blank	Total/NA	Water	1631E	
MB 580-416997/23	Method Blank	Total/NA	Water	1631E	
LCS 580-416997/29	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-416997/30	Lab Control Sample Dup	Total/NA	Water	1631E	
580-122904-A-2 MS	Matrix Spike	Total/NA	Water	1631E	
580-122904-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	
580-122913-A-3 MS	Matrix Spike	Total/NA	Water	1631E	
580-122913-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-3

Client Sample ID: EPBLLC_20230130

Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	416817	02/01/23 13:39	DRM	EET SEA
Dissolved	Analysis	1631E		1			416997	02/02/23 18:27	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			416997	02/02/23 18:23	COW	EET SEA
	Instrument ID: 2600-3									

Client Sample ID: EPBBC_20230130

Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	416817	02/01/23 13:39	DRM	EET SEA
Dissolved	Analysis	1631E		1			416997	02/02/23 18:36	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			416997	02/02/23 18:31	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-125746-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-3

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-125746-1	EPBLLC_20230130	Water	01/30/23 09:30	01/30/23 17:39
570-125746-2	EPBBC_20230130	Water	01/30/23 08:40	01/30/23 17:39

125746

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 11/30/2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E905, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E905, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.8: B, Zn – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.8: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-1 L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly (HNO3)	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA (HCl)	2-1L Amber	1-500mL Poly (NaOH)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_20230130	1-30-23	0930	G	WM	21	N	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
~~EPBMC_~~			~~G~~	~~WM~~	~~21~~			~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	NW
EPBBC_20230130	1-30-23	0840	G	WM	21	N	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
~~EPBCC_~~																									NW
~~EPBLC_~~			G	WM																					NW
Preservation Used: 1= Ice, 2= HCl; 3= HZSO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich AP@haleyaldrich.com. Report Level: Data Package and provide MDL. All dissolved samples are to be filtered within 24 hours of receipt even if they are placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, 0.005 ug/L).

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____			
Relinquished by: M. Dallagh	Company: H&A	Date/Time: 1-30-2023 1230	Received by:		Date/Time:
Relinquished by:	Company: EC	Date/Time: 1-30-23 1739	Received by:	1-30-23 1330	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	11/30/23 1739	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

570-125746 Chain of Custody

16/16, 20/20, 1.3/13, 19/19 SCH

2/6/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-205688 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-125746-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/15/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:	Project #: 44009815			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_20230130 (570-125746-1)	1/30/23	09 30 Pacific		Water			X	X	2	
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		1/31/23 1241	EC			
2	Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company
3	Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s).	COC No: 570-205692 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-125746-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230130 (570-125746-1)	1/30/23	09.30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/31/23 1255				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No.: 570-205704 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-125746-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/2/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/FIII_Geo_0 K-40 and Ceslum-137	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Ceslum-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230130 (570-125746-1)	1/30/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		1/31/23 1304	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-205688.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-125746-3
Address: 5755 8th Street East,	Due Date Requested: 2/15/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_20230130 (570-125746-1)	1/30/23	09:30 Pacific		Water			X	X	2	
EPBBC_20230130 (570-125746-2)	1/30/23	08:40 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements: 6293 0825 326

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	1/31/23 1241	EC		2/1/23 1010	ERGS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ◉ Yes ∆ No	Custody Seal No.: NA	Cooler Temperature(s) °C and Other Remarks: 0.7 Dig 2 0.9

Styrofoam

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-125746-3

Login Number: 125746
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-125746-3

Login Number: 125746
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 02/01/23 12:50 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/8/2023 11:48:22 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-125746-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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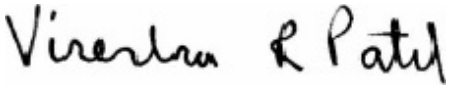
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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3/8/2023 11:48:22 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-125746-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-125746-4

Comments
No additional comments.

Receipt
The samples were received on 1/30/2023 5:39 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.3º C, 1.6º C, 1.9º C and 2.0º C.

RAD
Methods 900.0, 9310: Gross Alpha and Gross Beta batch 599625
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: EPBLLC_20230130 (570-125746-1), EPBBC_20230130 (570-125746-2), (280-171896-A-1-A) and (280-171896-A-1-D DU). Analytical results are reported with the detection limit achieved.

Methods 900.0, 9310: Gross Alpha and Gross Beta batch 599625
The sample duplicate (DUP) precision for Gross Beta was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because a reduction of the sample size was performed attributed to high residual mass.
(280-171896-A-1-D DU)

Methods 900.0, 9310: Gross Alpha and Gross Beta batch 599625
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230130 (570-125746-1), EPBBC_20230130 (570-125746-2), (LCS 160-599625/2-A), (LCSB 160-599625/3-A), (MB 160-599625/1-A), (280-171896-A-1-A), (280-171896-A-1-D DU), (280-171896-A-1-B MS) and (280-171896-A-1-C MSBT)

Method 900.0: Gross Alpha and Gross Beta batch 600547
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: EPBLLC_20230130 (570-125746-1), EPBBC_20230130 (570-125746-2), (880-24601-E-1-A) and (880-24601-E-1-D DU). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 600547
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230130 (570-125746-1), EPBBC_20230130 (570-125746-2), (LCS 160-600547/2-A), (LCSB 160-600547/3-A), (MB 160-600547/1-A), (880-24601-E-1-A), (880-24601-E-1-D DU), (880-24601-E-1-B MS) and (880-24601-E-1-C MSBT)

Method 901.1: Gamma Prep Batch 160-601388
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106

Job ID: 570-125746-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBLLC_20230130 (570-125746-1), EPBBC_20230130 (570-125746-2) and (570-125746-U-1-L DU)

Method 903.0: Radium-226 batch 599347
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBLLC_20230130 (570-125746-1), (LCS 160-599347/2-A), (MB 160-599347/1-A), (670-13908-E-1-A) and (670-13908-C-1-B DU)

Methods 903.0, 9315: Radium-226 prep batch 160-599777:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230130 (570-125746-1), EPBBC_20230130 (570-125746-2), (LCS 160-599777/2-A), (MB 160-599777/1-A), (160-48840-A-1-A) and (160-48840-B-1-B DU)

Method 903.0: Radium-226 prep batch 160-599631:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230130 (570-125746-2), (LCS 160-599631/2-A), (MB 160-599631/1-A), (500-229010-I-1-A) and (500-229010-J-1-A DU)

Method 904.0: Radium-228 prep batch 160-599363:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBLLC_20230130 (570-125746-1), (LCS 160-599363/2-A), (MB 160-599363/1-A), (670-13908-E-1-B) and (670-13908-C-1-C DU)

Method 904.0: Radium-228 batch 599633
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBBC_20230130 (570-125746-2), (LCS 160-599633/2-A), (MB 160-599633/1-A), (500-229010-I-1-B) and (500-229010-J-1-B DU)

Job ID: 570-125746-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Methods 904.0, 9320: Radium-228 batch 599779
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230130 (570-125746-1), EPBBC_20230130 (570-125746-2), (LCS 160-599779/2-A), (MB 160-599779/1-A), (160-48840-A-1-B) and (160-48840-B-1-C DU)

Method 905: Strontium-90 batch 599460
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230130 (570-125746-1), (LCS 160-599460/2-A), (LCSD 160-599460/3-A) and (MB 160-599460/1-A)

Methods 905, SR-03-RC: Strontium-90 prep batch 160-600473:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230130 (570-125746-2), (LCS 160-600473/2-A), (LCSD 160-600473/3-A) and (MB 160-600473/1-A)

Method 905: Strontium-90 prep batch 160-601703:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230130 (570-125746-1), EPBBC_20230130 (570-125746-2), (LCS 160-601703/2-A), (LCSD 160-601703/3-A) and (MB 160-601703/1-A)

Method 906.0: Tritium 599699
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBLLC_20230130 (570-125746-1), EPBBC_20230130 (570-125746-2), (LCS 160-599699/2-A), (MB 160-599699/1-A), (570-125746-S-2-B MS), (570-125930-D-5-A) and (570-125930-D-5-B DU)

Method A-01-R: Isotopic Uranium Batch 599667
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.EPBLLC_20230130 (570-125746-1), EPBBC_20230130 (570-125746-2), (LCS 160-599667/2-A), (MB 160-599667/1-A), (570-125839-J-1-B) and (570-125839-J-1-C DU)

Method ExtChrom: Uranium Prep Batch 160-599667:

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBLLC_20230130 (570-125746-1) and EPBBC_20230130 (570-125746-2).

Method PrecSep_0:

Method PrecSep_0:

Method PrecSep_0:

Method PrecSep-21:

Job ID: 570-125746-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method PrecSep-21:

Method PrecSep-21:

Method PrecSep-7: Strontium-90 Prep Batch 160-599460

The following sample was prepared at a reduced aliquot due to Matrix: EPBLLC_20230130 (570-125746-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-600327

The following samples were prepared at a reduced aliquot due to Matrix: EPBLLC_20230130 (570-125746-1) and EPBBC_20230130 (570-125746-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-600473

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230130 (570-125746-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 160-601703

The following samples were prepared at a reduced aliquot due to Matrix: EPBLLC_20230130 (570-125746-1) and EPBBC_20230130 (570-125746-2). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Client Sample ID: EPBLLC_20230130 — Lab Sample ID: 570-125746-1

No Detections.

Client Sample ID: EPBBC_20230130 — Lab Sample ID: 570-125746-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBLLC3202W01W0
Lab Sample ID: 570-125746-1
Date Collected: 01/W0/2W09:W0
Matri_: x ater
Date Received: 01/W0/2W17:W0

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**28.0**	**G**	18.7	19.0	3.00	27.4	pCi/L	02/08/23 08:17	02/10/23 19:08	1
Gross Beta	**22.7**	**G**	6.90	7.26	4.00	8.09	pCi/L	02/08/23 08:17	02/10/23 19:08	1

Client Sample ID: EPBBC3202W01W0
Lab Sample ID: 570-125746-2
Date Collected: 01/W0/2W08:40
Matri_: x ater
Date Received: 01/W0/2W17:W0

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	5.48	U G	4.74	4.78	3.00	7.20	pCi/L	02/08/23 08:17	02/10/23 19:08	1
Gross Beta	**6.86**		2.93	3.01	4.00	3.96	pCi/L	02/08/23 08:17	02/10/23 19:08	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBLLC3202W01W0
Date Collected: 01/W0/2W09:W0
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**29.2**	**G**	17.1	17.4	3.00	23.9	pCi/L	02/16/23 10:57	02/17/23 16:43	1
Gross Beta	**11.7**	**G**	5.86	5.98	4.00	8.10	pCi/L	02/16/23 10:57	02/17/23 16:43	1

Client Sample ID: EPBBC3202W01W0
Date Collected: 01/W0/2W08:40
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-2
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	2.35	U G	8.35	8.36	3.00	15.2	pCi/L	02/16/23 10:57	02/17/23 16:43	1
Gross Beta	**6.24**		2.82	2.89	4.00	3.90	pCi/L	02/16/23 10:57	02/17/23 16:43	1

Method: EPA 901.1 - Cesium 1W7 & Other Gamma Emitters (GS)

Client Sample ID: EPBLLC3202W01W0
Date Collected: 01/W0/2W09:W0
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.147	U	9.91	9.91	20.0	12.5	pCi/L	02/23/23 09:06	03/02/23 18:06	1
Potassium-40	31.6	U	110	110		130	pCi/L	02/23/23 09:06	03/02/23 18:06	1

Client Sample ID: EPBBC3202W01W0
Date Collected: 01/W0/2W08:40
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-2
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.20	U	11.4	11.4	20.0	14.0	pCi/L	02/23/23 09:06	03/03/23 05:59	1
Potassium-40	51.1	U	112	112		130	pCi/L	02/23/23 09:06	03/03/23 05:59	1

Method: EPA 901.1 - Cesium 1W7 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBLLC3202W01W0
Date Collected: 01/W0/2W09:W0
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.414	U	7.51	7.51	20.0	9.37	pCi/L	02/23/23 09:06	03/03/23 09:22	1
Potassium-40	-66.6	U	116	116		152	pCi/L	02/23/23 09:06	03/03/23 09:22	1

Client Sample ID: EPBBC3202W01W0
Date Collected: 01/W0/2W08:40
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-2
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	3.00	U	7.25	7.26	20.0	8.82	pCi/L	02/23/23 09:06	03/03/23 06:03	1
Potassium-40	-44.7	U	92.2	92.3		132	pCi/L	02/23/23 09:06	03/03/23 06:03	1

Method: EPA 90W0 - Radium-226 (GFPC)

Client Sample ID: EPBLLC3202W01W0
Date Collected: 01/W0/2W09:W0
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.228		0.122	0.124	1.00	0.162	pCi/L	02/06/23 09:47	02/28/23 15:26	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*30 - 110*	*02/06/23 09:47*	*02/28/23 15:26*	*1*

Client Sample ID: EPBBC3202W01W0
Date Collected: 01/W0/2W08:40
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-2
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.144		0.0975	0.0983	1.00	0.136	pCi/L	02/08/23 08:57	03/02/23 07:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.0*		*30 - 110*	*02/08/23 08:57*	*03/02/23 07:15*	*1*

Method: EPA 90W0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: EPBLLC3202W01W0
Date Collected: 01/W0/2W09:W0
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.267		0.118	0.120	1.00	0.128	pCi/L	02/09/23 09:26	03/03/23 08:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.1*		*30 - 110*	*02/09/23 09:26*	*03/03/23 08:31*	*1*

Client Sample ID: EPBBC3202W01W0
Date Collected: 01/W0/2W08:40
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-2
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.151		0.0945	0.0954	1.00	0.122	pCi/L	02/09/23 09:26	03/03/23 08:31	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.4*		*30 - 110*	*02/09/23 09:26*	*03/03/23 08:31*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: EPBLLC3202W01W0
Date Collected: 01/W0/2W09:W0
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.639	U	0.445	0.449	1.00	0.672	pCi/L	02/06/23 10:46	02/10/23 11:35	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.3*		*30 - 110*	*02/06/23 10:46*	*02/10/23 11:35*	*1*
Y Carrier	*88.2*		*30 - 110*	*02/06/23 10:46*	*02/10/23 11:35*	*1*

Client Sample ID: EPBBC3202W01W0
Date Collected: 01/W0/2W08:40
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-2
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**1.W5**		0.628	0.641	1.00	0.865	pCi/L	02/08/23 09:22	02/13/23 12:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.0*		*30 - 110*	*02/08/23 09:22*	*02/13/23 12:14*	*1*
Y Carrier	*76.3*		*30 - 110*	*02/08/23 09:22*	*02/13/23 12:14*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: EPBLLC3202W01W0
Date Collected: 01/W0/2W09:W0
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.766**		0.484	0.489	1.00	0.695	pCi/L	02/09/23 09:57	02/14/23 11:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*79.1*		*30 - 110*	*02/09/23 09:57*	*02/14/23 11:56*	*1*
Y Carrier	*83.7*		*30 - 110*	*02/09/23 09:57*	*02/14/23 11:56*	*1*

Client Sample ID: EPBBC3202W01W0
Date Collected: 01/W0/2W08:40
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-2
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0769	U	0.410	0.410	1.00	0.790	pCi/L	02/09/23 09:57	02/14/23 11:56	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*81.4*		*30 - 110*	*02/09/23 09:57*	*02/14/23 11:56*	*1*
Y Carrier	*85.6*		*30 - 110*	*02/09/23 09:57*	*02/14/23 11:56*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBLLC3202W01W0
Date Collected: 01/W0/2W09:W0
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.410	U	0.364	0.366	3.00	0.583	pCi/L	02/06/23 13:22	02/17/23 16:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*85.9*		*30 - 110*	*02/06/23 13:22*	*02/17/23 16:01*	*1*
Y Carrier	*88.6*		*30 - 110*	*02/06/23 13:22*	*02/17/23 16:01*	*1*

Client Sample ID: EPBBC3202W01W0
Date Collected: 01/W0/2W08:40
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-2
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.00461	U	0.429	0.429	3.00	0.776	pCi/L	02/15/23 12:32	02/27/23 16:00	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*84.9*		*30 - 110*	*02/15/23 12:32*	*02/27/23 16:00*	*1*
Y Carrier	*68.8*		*30 - 110*	*02/15/23 12:32*	*02/27/23 16:00*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBLLC3202W01W0
Date Collected: 01/W0/2W09:W0
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.0180	U	0.370	0.370	3.00	0.679	pCi/L	02/27/23 13:15	03/07/23 15:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*80.1*		*30 - 110*	*02/27/23 13:15*	*03/07/23 15:50*	*1*
Y Carrier	*75.9*		*30 - 110*	*02/27/23 13:15*	*03/07/23 15:50*	*1*

Client Sample ID: EPBBC3202W01W0
Date Collected: 01/W0/2W08:40
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-2
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.228	U	0.513	0.513	3.00	0.880	pCi/L	02/27/23 13:15	03/07/23 15:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*79.6*		*30 - 110*	*02/27/23 13:15*	*03/07/23 15:50*	*1*
Y Carrier	*71.4*		*30 - 110*	*02/27/23 13:15*	*03/07/23 15:50*	*1*

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPBLLC3202W01W0
Date Collected: 01/W0/2W09:W0
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-28.8	U	165	165	500	306	pCi/L	02/08/23 13:19	02/10/23 01:02	1

Client Sample ID: EPBBC3202W01W0
Date Collected: 01/W0/2W08:40
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-2
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	0.000	U	179	179	500	333	pCi/L	02/08/23 13:19	02/10/23 01:19	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBLLC3202W01W0
Lab Sample ID: 570-125746-1
Date Collected: 01/W0/2W09:W0
Matri_: x ater
Date Received: 01/W0/2W17:W0

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	21.4		1.89	2.25	1.00	0.302	pCi/L	02/08/23 11:16	02/23/23 13:00	1

Client Sample ID: EPBBC3202W01W0
Lab Sample ID: 570-125746-2
Date Collected: 01/W0/2W08:40
Matri_: x ater
Date Received: 01/W0/2W17:W0

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	7.50		1.07	1.15	1.00	0.324	pCi/L	02/08/23 11:16	02/23/23 13:00	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBLLC3202W01W0
Date Collected: 01/W0/2W09:W0
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	24.W		1.92	2.37	1.00	0.212	pCi/L	02/08/23 12:11	02/23/23 13:00	1

Client Sample ID: EPBBC3202W01W0
Date Collected: 01/W0/2W08:40
Date Received: 01/W0/2W17:W0

Lab Sample ID: 570-125746-2
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	7.42		1.08	1.16	1.00	0.251	pCi/L	02/08/23 12:11	02/23/23 13:01	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-125746-1	EPBLLC_20230130	92.3
570-125746-2	EPBBC_20230130	88.0
LCS 160-599347/2-A	Lab Control Sample	98.6
LCS 160-599631/2-A	Lab Control Sample	94.9
LCS 160-599777/2-A	Lab Control Sample	87.7
MB 160-599347/1-A	Method Blank	100
MB 160-599631/1-A	Method Blank	92.0
MB 160-599777/1-A	Method Blank	95.4

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water

Prep Type: Dissolved

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-125746-1	EPBLLC_20230130	79.1
570-125746-2	EPBBC_20230130	81.4

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-125746-1	EPBLLC_20230130	92.3	88.2
570-125746-2	EPBBC_20230130	88.0	76.3
LCS 160-599363/2-A	Lab Control Sample	98.6	87.1
LCS 160-599633/2-A	Lab Control Sample	94.9	80.4
LCS 160-599779/2-A	Lab Control Sample	87.7	84.1
MB 160-599363/1-A	Method Blank	100	87.9
MB 160-599633/1-A	Method Blank	92.0	82.2
MB 160-599779/1-A	Method Blank	95.4	87.9

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water

Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-125746-1	EPBLLC_20230130	79.1	83.7
570-125746-2	EPBBC_20230130	81.4	85.6

Tracer/Carrier Legend

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-125746-4
Project/Site: Boeing SSFL ISRA and BMP

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-125746-1	EPBLLC_20230130	85.9	88.6
570-125746-2	EPBBC_20230130	84.9	68.8
LCS 160-599460/2-A	Lab Control Sample	83.5	90.8
LCS 160-600473/2-A	Lab Control Sample	88.4	80.4
LCS 160-601703/2-A	Lab Control Sample	83.3	74.0
LCSD 160-599460/3-A	Lab Control Sample Dup	90.2	91.2
LCSD 160-600473/3-A	Lab Control Sample Dup	87.1	84.5
LCSD 160-601703/3-A	Lab Control Sample Dup	85.1	83.0
MB 160-599460/1-A	Method Blank	88.3	90.8
MB 160-600473/1-A	Method Blank	89.3	75.9
MB 160-601703/1-A	Method Blank	83.2	72.5

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-125746-1	EPBLLC_20230130	80.1	75.9
570-125746-2	EPBBC_20230130	79.6	71.4

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-599667/2-A	Lab Control Sample	79.6
MB 160-599667/1-A	Method Blank	91.1

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-599625/1-A
Matrix: Water
Analysis Batch: 600017

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599625

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	2.417		0.893	0.934	3.00	1.10	pCi/L	02/08/23 08:17	02/10/23 19:02	1
Gross Beta	2.161		0.732	0.763	4.00	0.951	pCi/L	02/08/23 08:17	02/10/23 19:02	1

Lab Sample ID: LCS 160-599625/2-A
Matrix: Water
Analysis Batch: 600017

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599625

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.14		7.55	3.00	2.10	pCi/L	101	75 - 125

Lab Sample ID: LCSB 160-599625/3-A
Matrix: Water
Analysis Batch: 600017

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599625

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	54.98		6.02	4.00	0.770	pCi/L	75	75 - 125

Lab Sample ID: MB 160-600547/1-A
Matrix: Water
Analysis Batch: 600725

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 600547

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.08863	U	0.414	0.414	3.00	0.792	pCi/L	02/16/23 10:57	02/17/23 16:46	1
Gross Beta	0.7163	U	0.534	0.539	4.00	0.834	pCi/L	02/16/23 10:57	02/17/23 16:46	1

Lab Sample ID: LCS 160-600547/2-A
Matrix: Water
Analysis Batch: 600725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 600547

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	43.64		6.68	3.00	2.25	pCi/L	86	75 - 125

Lab Sample ID: LCSB 160-600547/3-A
Matrix: Water
Analysis Batch: 600725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 600547

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.7	74.66		7.99	4.00	0.800	pCi/L	101	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-601388/1-A
Matrix: Water
Analysis Batch: 602173

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 601388

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-5.312	U	13.3	13.3	20.0	10.7	pCi/L	02/23/23 09:06	03/02/23 20:11	1
Potassium-40	-36.44	U	92.7	92.8		125	pCi/L	02/23/23 09:06	03/02/23 20:11	1

Lab Sample ID: LCS 160-601388/2-A
Matrix: Water
Analysis Batch: 602169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 601388

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Americium-241			135000	149400		17800		304	pCi/L	111	75 - 125		
Cesium-137			40900	39950		4760	20.0	111	pCi/L	98	75 - 125		
Cobalt-60			18000	17720		2110		63.9	pCi/L	99	75 - 125		

Lab Sample ID: 570-125746-1 DU
Matrix: Water
Analysis Batch: 602250

Client Sample ID: EPBLLC_20230130
Prep Type: Total/NA
Prep Batch: 601388

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Cesium-137	-0.147	U		0.9257	U	4.70	20.0	6.06	pCi/L			0.07	1
Potassium-40	31.6	U		24.08	U	66.9		108	pCi/L			0.04	1

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-599347/1-A
Matrix: Water
Analysis Batch: 601857

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599347

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02027	U	0.0409	0.0409	1.00	0.0746	pCi/L	02/06/23 09:47	02/28/23 15:25	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*100*		*30 - 110*	*02/06/23 09:47*	*02/28/23 15:25*	*1*

Lab Sample ID: LCS 160-599347/2-A
Matrix: Water
Analysis Batch: 601819

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599347

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	11.05		1.12	1.00	0.0765	pCi/L	97	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*98.6*		*30 - 110*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-599631/1-A
Matrix: Water
Analysis Batch: 602181

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599631

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03018	U	0.0449	0.0449	1.00	0.0771	pCi/L	02/08/23 08:57	03/02/23 07:07	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*92.0*		*30 - 110*	*02/08/23 08:57*	*03/02/23 07:07*	*1*

Lab Sample ID: LCS 160-599631/2-A
Matrix: Water
Analysis Batch: 602181

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599631

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	11.07		1.13	1.00	0.0829	pCi/L	98	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*94.9*		*30 - 110*

Lab Sample ID: MB 160-599777/1-A
Matrix: Water
Analysis Batch: 602334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599777

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.001220	U	0.0339	0.0339	1.00	0.0748	pCi/L	02/09/23 09:26	03/03/23 08:31	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.4*		*30 - 110*	*02/09/23 09:26*	*03/03/23 08:31*	*1*

Lab Sample ID: LCS 160-599777/2-A
Matrix: Water
Analysis Batch: 602334

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599777

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	11.45		1.17	1.00	0.0795	pCi/L	101	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.7*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-599363/1-A
Matrix: Water
Analysis Batch: 600015

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599363

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3615	U	0.283	0.284	1.00	0.434	pCi/L	02/06/23 10:46	02/10/23 11:34	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	100		30 - 110	02/06/23 10:46	02/10/23 11:34	1
Y Carrier	87.9		30 - 110	02/06/23 10:46	02/10/23 11:34	1

Lab Sample ID: LCS 160-599363/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 600015 — **Prep Batch: 599363**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.20	8.783		1.19	1.00	0.555	pCi/L	107	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	98.6		30 - 110
Y Carrier	87.1		30 - 110

Lab Sample ID: MB 160-599633/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 600139 — **Prep Batch: 599633**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4165	U	0.321	0.323	1.00	0.490	pCi/L	02/08/23 09:22	02/13/23 12:03	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		30 - 110	02/08/23 09:22	02/13/23 12:03	1
Y Carrier	82.2		30 - 110	02/08/23 09:22	02/13/23 12:03	1

Lab Sample ID: LCS 160-599633/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 600139 — **Prep Batch: 599633**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.20	9.812		1.31	1.00	0.498	pCi/L	120	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	94.9		30 - 110
Y Carrier	80.4		30 - 110

Lab Sample ID: MB 160-599779/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 600303 — **Prep Batch: 599779**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2043	U	0.291	0.292	1.00	0.491	pCi/L	02/09/23 09:57	02/14/23 11:55	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.4		30 - 110	02/09/23 09:57	02/14/23 11:55	1
Y Carrier	87.9		30 - 110	02/09/23 09:57	02/14/23 11:55	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-599779/2-A
Matrix: Water
Analysis Batch: 600303

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599779

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.19	9.775		1.32	1.00	0.457	pCi/L	119	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*87.7*		*30 - 110*
Y Carrier	*84.1*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-599460/1-A
Matrix: Water
Analysis Batch: 600728

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599460

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1615	U	0.202	0.202	3.00	0.334	pCi/L	02/06/23 13:22	02/17/23 16:00	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*88.3*		*30 - 110*	*02/06/23 13:22*	*02/17/23 16:00*	*1*
Y Carrier	*90.8*		*30 - 110*	*02/06/23 13:22*	*02/17/23 16:00*	*1*

Lab Sample ID: LCS 160-599460/2-A
Matrix: Water
Analysis Batch: 600728

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599460

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Strontium-90	7.37	7.338		0.812	3.00	0.369	pCi/L	100	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*83.5*		*30 - 110*
Y Carrier	*90.8*		*30 - 110*

Lab Sample ID: LCSD 160-599460/3-A
Matrix: Water
Analysis Batch: 600727

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 599460

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90	7.37	7.072		0.765	3.00	0.287	pCi/L	96	75 - 125	0.17	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*90.2*		*30 - 110*
Y Carrier	*91.2*		*30 - 110*

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: MB 160-600473/1-A
Matrix: Water
Analysis Batch: 601722

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 600473

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.2660	U	0.215	0.216	3.00	0.340	pCi/L	02/15/23 12:32	02/27/23 15:56	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*89.3*		*30 - 110*	*02/15/23 12:32*	*02/27/23 15:56*	*1*
Y Carrier	*75.9*		*30 - 110*	*02/15/23 12:32*	*02/27/23 15:56*	*1*

Lab Sample ID: LCS 160-600473/2-A
Matrix: Water
Analysis Batch: 601722

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 600473

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.36	7.214		0.809	3.00	0.290	pCi/L	98	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*88.4*		*30 - 110*
Y Carrier	*80.4*		*30 - 110*

Lab Sample ID: LCSD 160-600473/3-A
Matrix: Water
Analysis Batch: 601722

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 600473

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.36	7.818		0.859	3.00	0.335	pCi/L	106	75 - 125	0.36	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*87.1*		*30 - 110*
Y Carrier	*84.5*		*30 - 110*

Lab Sample ID: MB 160-601703/1-A
Matrix: Water
Analysis Batch: 602702

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 601703

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.02049	U	0.189	0.189	3.00	0.342	pCi/L	02/27/23 13:15	03/07/23 15:49	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*83.2*		*30 - 110*	*02/27/23 13:15*	*03/07/23 15:49*	*1*
Y Carrier	*72.5*		*30 - 110*	*02/27/23 13:15*	*03/07/23 15:49*	*1*

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: LCS 160-601703/2-A
Matrix: Water
Analysis Batch: 602702

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 601703

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.36	7.519		0.875	3.00	0.400	pCi/L	102	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*83.3*		*30 - 110*
Y Carrier	*74.0*		*30 - 110*

Lab Sample ID: LCSD 160-601703/3-A
Matrix: Water
Analysis Batch: 602702

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 601703

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.36	7.226		0.813	3.00	0.286	pCi/L	98	75 - 125	0.17	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.1*		*30 - 110*
Y Carrier	*83.0*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-599699/1-A
Matrix: Water
Analysis Batch: 600150

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599699

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-31.08	U	168	168	500	314	pCi/L	02/08/23 13:19	02/09/23 23:19	1

Lab Sample ID: LCS 160-599699/2-A
Matrix: Water
Analysis Batch: 600150

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599699

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2110	1939		387	500	324	pCi/L	92	75 - 125		

Lab Sample ID: 570-125746-2 MS
Matrix: Water
Analysis Batch: 600150

Client Sample ID: EPBBC_20230130
Prep Type: Total/NA
Prep Batch: 599699

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium	0.000	U	2150	1817		372	500	320	pCi/L	85	60 - 140		

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-599667/1-A
Matrix: Water
Analysis Batch: 601420

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 599667

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1885		0.150	0.150	1.00	0.173	pCi/L	02/08/23 11:16	02/23/23 13:00	1
Total Uranium	0.1885		0.150	0.150	1.00	0.173	pCi/L	02/08/23 11:16	02/23/23 13:00	1

Lab Sample ID: LCS 160-599667/2-A
Matrix: Water
Analysis Batch: 601483

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 599667

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.45		1.48	1.00	0.151	pCi/L	98	75 - 125		
Uranium-238			13.0	13.17		1.55	1.00	0.164	pCi/L	101	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*79.6*		*30 - 110*

Rad

Prep Batch: 599347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	PrecSep-21	
MB 160-599347/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-599347/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 599363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	PrecSep_0	
MB 160-599363/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-599363/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 599460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	PrecSep-7	
MB 160-599460/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-599460/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-599460/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Filtration Batch: 599517

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	Filtration	
570-125746-1	EPBLLC_20230130	Dissolved	Water	Filtration	
570-125746-1	EPBLLC_20230130	Dissolved	Water	Filtration	
570-125746-2	EPBBC_20230130	Dissolved	Water	Filtration	
570-125746-2	EPBBC_20230130	Dissolved	Water	Filtration	

Prep Batch: 599625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	Evaporation	
570-125746-2	EPBBC_20230130	Total/NA	Water	Evaporation	
MB 160-599625/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-599625/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-599625/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 599631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-2	EPBBC_20230130	Total/NA	Water	PrecSep-21	
MB 160-599631/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-599631/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 599633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-2	EPBBC_20230130	Total/NA	Water	PrecSep_0	
MB 160-599633/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-599633/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 599667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	ExtChrom	599517
570-125746-1	EPBLLC_20230130	Total/NA	Water	ExtChrom	
570-125746-2	EPBBC_20230130	Dissolved	Water	ExtChrom	599517
570-125746-2	EPBBC_20230130	Total/NA	Water	ExtChrom	

Rad (Continued)

Prep Batch: 599667 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-599667/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-599667/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 599699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Total/NA	Water	LSC_Dist_Susp	
570-125746-2	EPBBC_20230130	Total/NA	Water	LSC_Dist_Susp	
MB 160-599699/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-599699/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	
570-125746-2 MS	EPBBC_20230130	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 599777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	PrecSep-21	599517
570-125746-2	EPBBC_20230130	Dissolved	Water	PrecSep-21	599517
MB 160-599777/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-599777/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 599779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	PrecSep_0	599517
570-125746-2	EPBBC_20230130	Dissolved	Water	PrecSep_0	599517
MB 160-599779/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-599779/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 600473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-2	EPBBC_20230130	Total/NA	Water	PrecSep-7	
MB 160-600473/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-600473/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-600473/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 600547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	Evaporation	599517
570-125746-2	EPBBC_20230130	Dissolved	Water	Evaporation	599517
MB 160-600547/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-600547/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-600547/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 601388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	Fill_Geo-0	599517
570-125746-1	EPBLLC_20230130	Total/NA	Water	Fill_Geo-0	
570-125746-2	EPBBC_20230130	Dissolved	Water	Fill_Geo-0	599517
570-125746-2	EPBBC_20230130	Total/NA	Water	Fill_Geo-0	
MB 160-601388/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-601388/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-125746-1 DU	EPBLLC_20230130	Total/NA	Water	Fill_Geo-0	

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Rad

Prep Batch: 601703

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-125746-1	EPBLLC_20230130	Dissolved	Water	PrecSep-7	599517
570-125746-2	EPBBC_20230130	Dissolved	Water	PrecSep-7	599517
MB 160-601703/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-601703/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-601703/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Client Sample ID: EPBLLC_20230130

Date Collected: 01/30/23 09:30
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			3800 mL	3800 mL	599517	02/07/23 12:10	SRE	EET SL
Dissolved	Prep	Evaporation			22.62 mL	1.0 g	600547	02/16/23 10:57	MST	EET SL
Dissolved	Analysis	900.0		1			600728	02/17/23 16:43	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			19.79 mL	1.0 g	599625	02/08/23 08:17	MST	EET SL
Total/NA	Analysis	900.0		1			600015	02/10/23 19:08	SCB	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1900 mL	1900 mL	599517	02/07/23 12:15	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	601388	02/23/23 09:06	SRE	EET SL
Dissolved	Analysis	901.1		1			602250	03/03/23 09:22	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	601388	02/23/23 09:06	SRE	EET SL
Total/NA	Analysis	901.1		1			602169	03/02/23 18:06	EMH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1900 mL	1900 mL	599517	02/07/23 12:15	SRE	EET SL
Dissolved	Prep	PrecSep-21			751.73 mL	1.0 g	599777	02/09/23 09:26	DJP	EET SL
Dissolved	Analysis	903.0		1			602334	03/03/23 08:31	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			752.47 mL	1.0 g	599347	02/06/23 09:47	DJP	EET SL
Total/NA	Analysis	903.0		1			601819	02/28/23 15:26	SCB	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1900 mL	1900 mL	599517	02/07/23 12:15	SRE	EET SL
Dissolved	Prep	PrecSep_0			751.73 mL	1.0 g	599779	02/09/23 09:57	DJP	EET SL
Dissolved	Analysis	904.0		1			600303	02/14/23 11:56	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			752.47 mL	1.0 g	599363	02/06/23 10:46	DJP	EET SL
Total/NA	Analysis	904.0		1			600015	02/10/23 11:35	SCB	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	599517	02/07/23 12:10	SRE	EET SL
Dissolved	Prep	PrecSep-7			504.24 mL	1.0 g	601703	02/27/23 13:15	DJP	EET SL
Dissolved	Analysis	905		1			602702	03/07/23 15:50	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			504.85 mL	1.0 g	599460	02/06/23 13:22	DJP	EET SL
Total/NA	Analysis	905		1			600727	02/17/23 16:01	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			104.22 mL	1.0 g	599699	02/08/23 13:19	SEH	EET SL
Total/NA	Analysis	906.0		1			600150	02/10/23 01:02	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	599517	02/07/23 12:15	SRE	EET SL
Dissolved	Prep	ExtChrom			301.83 mL	1.0 mL	599667	02/08/23 12:11	MAL	EET SL
Dissolved	Analysis	A-01-R		1			601488	02/23/23 13:00	EJS	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			296.83 mL	1.0 mL	599667	02/08/23 11:16	MAL	EET SL
Total/NA	Analysis	A-01-R		1			601491	02/23/23 13:00	EJS	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Client Sample ID: EPBBC_20230130

Date Collected: 01/30/23 08:40
Date Received: 01/30/23 17:39

Lab Sample ID: 570-125746-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			3800 mL	3800 mL	599517	02/07/23 12:15	SRE	EET SL
Dissolved	Prep	Evaporation			42.98 mL	1.0 g	600547	02/16/23 10:57	MST	EET SL
Dissolved	Analysis	900.0		1			600728	02/17/23 16:43	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			40.77 mL	1.0 g	599625	02/08/23 08:17	MST	EET SL
Total/NA	Analysis	900.0		1			600015	02/10/23 19:08	SCB	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	599517	02/07/23 12:15	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	601388	02/23/23 09:06	SRE	EET SL
Dissolved	Analysis	901.1		1			602250	03/03/23 06:03	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	601388	02/23/23 09:06	SRE	EET SL
Total/NA	Analysis	901.1		1			602246	03/03/23 05:59	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	599517	02/07/23 12:15	SRE	EET SL
Dissolved	Prep	PrecSep-21			745.68 mL	1.0 g	599777	02/09/23 09:26	DJP	EET SL
Dissolved	Analysis	903.0		1			602334	03/03/23 08:31	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			744.15 mL	1.0 g	599631	02/08/23 08:57	DJP	EET SL
Total/NA	Analysis	903.0		1			602180	03/02/23 07:15	EMH	EET SL
	Instrument ID: GFPCPURPLE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	599517	02/07/23 12:15	SRE	EET SL
Dissolved	Prep	PrecSep_0			745.68 mL	1.0 g	599779	02/09/23 09:57	DJP	EET SL
Dissolved	Analysis	904.0		1			600303	02/14/23 11:56	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			744.15 mL	1.0 g	599633	02/08/23 09:22	DJP	EET SL
Total/NA	Analysis	904.0		1			600138	02/13/23 12:14	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	599517	02/07/23 12:15	SRE	EET SL
Dissolved	Prep	PrecSep-7			498.49 mL	1.0 g	601703	02/27/23 13:15	DJP	EET SL
Dissolved	Analysis	905		1			602702	03/07/23 15:50	SCB	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			506.96 mL	1.0 g	600473	02/15/23 12:32	DJP	EET SL
Total/NA	Analysis	905		1			601722	02/27/23 16:00	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	LSC_Dist_Susp			97.62 mL	1.0 g	599699	02/08/23 13:19	SEH	EET SL
Total/NA	Analysis	906.0		1			600150	02/10/23 01:19	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	599517	02/07/23 12:10	SRE	EET SL
Dissolved	Prep	ExtChrom			302.11 mL	1.0 mL	599667	02/08/23 12:11	MAL	EET SL
Dissolved	Analysis	A-01-R		1			601493	02/23/23 13:01	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			303.45 mL	1.0 mL	599667	02/08/23 11:16	MAL	EET SL
Total/NA	Analysis	A-01-R		1			601422	02/23/23 13:00	EJS	EET SL
	Instrument ID: ALPHAVISION									

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-125746-4
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	04-01-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	03-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-24
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-125746-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-125746-1	EPBLLC_20230130	Water	01/30/23 09:30	01/30/23 17:39
570-125746-2	EPBBC_20230130	Water	01/30/23 08:40	01/30/23 17:39

125746

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 11/30/2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E905, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E905, E904, E905) – (Total Recoverable)	SO4, Fluoride, Nitrate-N, Nitrite-N (E300)	Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable(Method 218.6)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.8: B, Zn – (Total Dissolved)	Method 200.8: Ag, As, Ba, Be, Cd, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl; Method 200.8: B, Zn – (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trichloroethene (E624.1)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	Sample Specific Notes:
								2-1L Amber	1-1L Poly	1-1L Poly	2.5 gal cube	2.5 gal cube	1-250mL Poly	1-250mL Poly	1-1 L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly (HNO3)	1-250mL Clear Glass w HCl, double bagged	1-250mL Clear Glass, double bagged	3-40mL VOA (HCl)	2-1L Amber	1-500mL Poly (NaOH)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_20230130	1-30-23	0930	G	WM	21	N	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
~~EPBMC_~~			~~G~~	~~WM~~	~~21~~			~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	~~x~~	NW
EPBBC_20230130	1-30-23	0840	G	WM	21	N	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
~~EPBCC_~~																									
~~EPBLC_~~			G	WM																					NW
																									NW
Preservation Used: 1= Ice, 2= HCl; 3= HZSO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bottle to Haley & Aldrich AP@haleyaldrich.com Report Level: Data Package and Provide MDL. All dissolved samples are to be filtered within 24 hours of receipt even if they are placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, 0.005 ug/L).

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____		
Relinquished by: M. Dallagh	Company: H&A	Date/Time: 1-30-2023 1730	Received by:	Date/Time:
Relinquished by:	Company: EC	Date/Time: 1-30-23 1739	Received by:	Date/Time: 1-30-23 1330
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time: 11/30/23 1739

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

570-125746 Chain of Custody

16/16, 20/20, 1.3/13, 19/19 SCH

3/8/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No: 570-205688 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-125746-3
Address: 5755 8th Street East, ,	Due Date Requested: 2/15/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O AsNaO2, P - Na2O4S, Q Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_20230130 (570-125746-1)	1/30/23	09 30 Pacific		Water			X	X	2	
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		1/31/23 1241	EC			
2	Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company
3	Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin, CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s).	COC No: 570-205692 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-125746-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230130 (570-125746-1)	1/30/23	09.30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	1/31/23 1255				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s):	COC No.: 570-205704 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-125746-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/2/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	903.0/PreoSep_21 Radium-226	904.0/PreoSep_0 Radium-228	905_Sr90/PreoSep_7 Strontium-90	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230130 (570-125746-1)	1/30/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER, use prep date from preservation
EPBBC_20230130 (570-125746-2)	1/30/23	08 40 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER use prep date from preservation

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date	Time	Method of Shipment:

Relinquished by:	Date/Time: 1/31/23 1304	Company EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

3/8/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-205704.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-125746-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/2/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 44009815			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad (MOD) Gross Alpha Only-Dissolved	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/PrecSep_21 Radium-226	903.0/PrecSep_0 Radium-228	905_Sr90/PrecSep_7 Strontium-90	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230130 (570-125746-1)	1/30/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
EPBBC_20230130 (570-125746-2)	1/30/23	08:40 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: FEDEX	Date/Time: 1/31/23 1304	Company EC	Received by: FEDEX	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: Briana Sharkey-Gonzales	Date/Time: 1035 2/3/23	Company EJASTL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/8/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-125746-4

Login Number: 125746
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-125746-4

Login Number: 125746
List Number: 4
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 02/03/23 12:59 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/16/2023 8:03:39 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129005-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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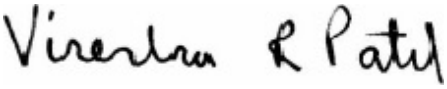
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Qualifiers

GC/MS mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Sep i mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits
LR	LCS/LCSD recovery below method control limits
MB	Analyte present in the method blank

HPLC/IC

Qualifier	Qualifier DesAriction
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier DesAriction
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chep istry

Qualifier	Qualifier DesAriction
BU	Analyzed out of holding time
BV	Sample received after holding time expired

Glossary

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present

Glossary (Continued)

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129005-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129005-1

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.5º C and 2.2º C.

Receipt Exceptions

The following sample was received outside of holding time for 300.0 NO2, NO3, Chromium VI 218.6, Settleable Solids SM2540F, BOD SM5210B, MBAS SM5540C, TurbiditySM2540C: BGBMP0003_20230225 (570-129005-1).

GC/MS VOA
Method 624.1: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 570-307642 recovered outside control limits for the following analyte: Ethanol Laboratory control sample / laboratory control sample duplicate (LCS/LCSD) percent recovery is in control for affected analytes.

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: TB_20230225-1 (570-129005-2). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-307642.

Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-307594.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-307149 and analytical batch 570-307279 recovered outside control limits for the following analytes: 2,4-Dinitrotoluene, 4,6-Dinitro-2-methylphenol, Di-n-octyl phthalate and Di-n-butyl phthalate. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-307608 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: BGBMP0003_20230225 (570-129005-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following sample was received and analyzed outside of holding time: BGBMP0003_20230225 (570-129005-1).

Method 218.6: The following samples were received, filtered, preserved and analyzed outside of holding time: BGBMP0003_20230225 (570-129005-1) and (570-129045-T-1-A).

Method 300.0: The following sample was received outside of holding time: BGBMP0003_20230225 (570-129005-1).

Job ID: 570-129005-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-307628 and analytical batch 570-307918 contained Chromium and Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-308039 and analytical batch 570-308100 were outside control limits for Antimony. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 200.8: The method blank for preparation batch 570-308039 and analytical batch 570-308100 contained Chromium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: BGBMP0003_20230225 (570-129005-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: BGBMP0003_20230225 (570-129005-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2130B: The following sample was received outside of holding time: BGBMP0003_20230225 (570-129005-1).

Method SM 2540F: The following sample was received outside of holding time: BGBMP0003_20230225 (570-129005-1).

Method SM 2540F: Insufficient sample volume was available to perform sample duplicate (DUP) associated with analytical batch 570-307843.

Method SM5210B: The following sample was received outside of holding time: BGBMP0003_20230225 (570-129005-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-308085.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Client Sample ID: BGBMP0003_20230225 — Lab Sample ID: 570-129005-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[b]fluoranthene	0.13	J,DX MB	0.20	0.11	ug/L	1		625.1 SIM	Total/NA
Dibenz(a,h)anthracene	0.16	J,DX	0.20	0.16	ug/L	1		625.1 SIM	Total/NA
Chloride	1.6		1.0	0.36	mg/L	1		300.0	Total/NA
Nitrite as N	0.049	J,DX BU BV	0.10	0.043	mg/L	1		300.0	Total/NA
Fluoride	0.060	J,DX	0.10	0.046	mg/L	1		300.0	Total/NA
Nitrate as N	0.17	BU BV	0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	1.6		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	0.22		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	41	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	41	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Aluminum	800		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	0.60	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	18		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	1.6	J,DX MB	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	2.3		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	890	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	16		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	2.4		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	0.69	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Zinc	4.8	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Cobalt	0.40	J,DX	1.0	0.14	ug/L	1		200.8	Total Recoverable
Aluminum	290	BU	15	8.6	ug/L	1		200.8	Dissolved
Arsenic	0.47	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	12	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.56	J,DX BU MB	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	1.8	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	220	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	2.3	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.5	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Lead	0.15	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Antimony	1.4	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Turbidity	13	BU BV	0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	60		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	71		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	19		1.7	1.4	mg/L	1		SM 2540D	Total/NA
Carbon, Total Organic	14		4.0	2.1	mg/L	8		SM 5310D	Total/NA

Client Sample ID: TB_20230225-1 — Lab Sample ID: 570-129005-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 15:20	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 15:20	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 15:20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 15:20	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 15:20	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 15:20	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 15:20	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 15:20	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 15:20	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 15:20	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 15:20	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 15:20	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 15:20	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 15:20	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 15:20	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 15:20	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 15:20	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 15:20	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 15:20	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 15:20	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 15:20	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 15:20	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 15:20	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 15:20	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 15:20	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 15:20	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 15:20	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 15:20	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 15:20	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 15:20	1
Acetone	ND		20	16	ug/L			02/28/23 15:20	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 15:20	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 15:20	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 15:20	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 15:20	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 15:20	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 15:20	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 15:20	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 15:20	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 15:20	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 15:20	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 15:20	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 15:20	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 15:20	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 15:20	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 15:20	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 15:20	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 15:20	1
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 15:20	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 15:20	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 15:20	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 15:20	1
Ethanol	ND	BA	100	65	ug/L			02/28/23 15:20	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 15:20	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 15:20	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 15:20	1
Isopropanol	ND		250	120	ug/L			02/28/23 15:20	1
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 15:20	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 15:20	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 15:20	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 15:20	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 15:20	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 15:20	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 15:20	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 15:20	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 15:20	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 15:20	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 15:20	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 15:20	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 15:20	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 15:20	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 15:20	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 15:20	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 15:20	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 15:20	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 15:20	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 15:20	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 15:20	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 15:20	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 15:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*60 - 140*		*02/28/23 15:20*	*1*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*		*02/28/23 15:20*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*		*02/28/23 15:20*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*02/28/23 15:20*	*1*

Client Sample ID: TB_20230225-1
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 14:58	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 14:58	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 14:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 14:58	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 14:58	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 14:58	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 14:58	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 14:58	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB_20230225-1
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 14:58	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 14:58	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 14:58	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 14:58	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 14:58	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 14:58	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 14:58	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 14:58	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 14:58	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 14:58	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 14:58	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 14:58	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 14:58	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 14:58	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 14:58	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 14:58	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 14:58	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 14:58	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 14:58	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 14:58	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 14:58	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 14:58	1
Acetone	ND		20	16	ug/L			02/28/23 14:58	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 14:58	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 14:58	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 14:58	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 14:58	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 14:58	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 14:58	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 14:58	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 14:58	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 14:58	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 14:58	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 14:58	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 14:58	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 14:58	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 14:58	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 14:58	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 14:58	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 14:58	1
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 14:58	1
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 14:58	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 14:58	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 14:58	1
Ethanol	ND	BA	100	65	ug/L			02/28/23 14:58	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 14:58	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 14:58	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 14:58	1
Isopropanol	ND		250	120	ug/L			02/28/23 14:58	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB_20230225-1
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 14:58	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 14:58	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 14:58	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 14:58	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 14:58	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 14:58	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 14:58	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 14:58	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 14:58	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 14:58	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 14:58	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 14:58	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 14:58	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 14:58	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 14:58	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 14:58	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 14:58	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 14:58	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 14:58	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 14:58	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 14:58	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 14:58	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 14:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*60 - 140*		*02/28/23 14:58*	*1*
4-Bromofluorobenzene (Surr)	*92*		*60 - 140*		*02/28/23 14:58*	*1*
Dibromofluoromethane (Surr)	*97*		*60 - 140*		*02/28/23 14:58*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*02/28/23 14:58*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			02/28/23 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*110*		*67 - 133*		*02/28/23 17:36*	*1*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND	LR	0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:13	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:13	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		02/28/23 05:19	02/28/23 16:13	1
1,3-Dichlorobenzene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:13	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		02/28/23 05:19	02/28/23 16:13	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		02/28/23 05:19	02/28/23 16:13	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		02/28/23 05:19	02/28/23 16:13	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:13	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		02/28/23 05:19	02/28/23 16:13	1
2,4-Dinitrotoluene	ND	LQ	0.20	0.12	ug/L		02/28/23 05:19	02/28/23 16:13	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		02/28/23 05:19	02/28/23 16:13	1
2-Chloronaphthalene	ND	BA	0.20	0.14	ug/L		02/28/23 05:19	02/28/23 16:13	1
2-Chlorophenol	ND		0.20	0.096	ug/L		02/28/23 05:19	02/28/23 16:13	1
2-Nitrophenol	ND		5.0	3.5	ug/L		02/28/23 05:19	02/28/23 16:13	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		02/28/23 05:19	02/28/23 16:13	1
4,6-Dinitro-2-methylphenol	ND	LQ	5.0	4.5	ug/L		02/28/23 05:19	02/28/23 16:13	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		02/28/23 05:19	02/28/23 16:13	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		02/28/23 05:19	02/28/23 16:13	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		02/28/23 05:19	02/28/23 16:13	1
4-Nitrophenol	ND		5.0	3.4	ug/L		02/28/23 05:19	02/28/23 16:13	1
Acenaphthene	ND		0.20	0.098	ug/L		02/28/23 05:19	02/28/23 16:13	1
Acenaphthylene	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:13	1
Anthracene	ND		0.20	0.084	ug/L		02/28/23 05:19	02/28/23 16:13	1
Benzidine	ND	BA	5.0	2.7	ug/L		02/28/23 05:19	02/28/23 16:13	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		02/28/23 05:19	02/28/23 16:13	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		02/28/23 05:19	02/28/23 16:13	1
Benzo[b]fluoranthene	**0.13**	**J,DX MB**	0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:13	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:13	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:13	1
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:13	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:13	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		02/28/23 05:19	02/28/23 16:13	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		02/28/23 05:19	02/28/23 16:13	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		02/28/23 05:19	02/28/23 16:13	1
Chrysene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:13	1
Dibenz(a,h)anthracene	**0.16**	**J,DX**	0.20	0.16	ug/L		02/28/23 05:19	02/28/23 16:13	1
Diethyl phthalate	ND		2.0	0.18	ug/L		02/28/23 05:19	02/28/23 16:13	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		02/28/23 05:19	02/28/23 16:13	1
Di-n-butyl phthalate	ND	LQ	2.0	1.8	ug/L		02/28/23 05:19	02/28/23 16:13	1
Di-n-octyl phthalate	ND	LQ	3.0	0.54	ug/L		02/28/23 05:19	02/28/23 16:13	1
Fluoranthene	ND		0.20	0.10	ug/L		02/28/23 05:19	02/28/23 16:13	1
Fluorene	ND		0.20	0.095	ug/L		02/28/23 05:19	02/28/23 16:13	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:13	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		02/28/23 05:19	02/28/23 16:13	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		02/28/23 05:19	02/28/23 16:13	1
Hexachloroethane	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:13	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:13	1
Isophorone	ND		0.20	0.099	ug/L		02/28/23 05:19	02/28/23 16:13	1
Naphthalene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:13	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	ND		0.20	0.14	ug/L		02/28/23 05:19	02/28/23 16:13	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		02/28/23 05:19	02/28/23 16:13	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		02/28/23 05:19	02/28/23 16:13	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:13	1
Pentachlorophenol	ND		1.0	0.84	ug/L		02/28/23 05:19	02/28/23 16:13	1
Phenanthrene	ND		0.20	0.16	ug/L		02/28/23 05:19	02/28/23 16:13	1
Phenol	ND		1.0	0.52	ug/L		02/28/23 05:19	02/28/23 16:13	1
Pyrene	ND		0.20	0.086	ug/L		02/28/23 05:19	02/28/23 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*72*		*28 - 127*	*02/28/23 05:19*	*02/28/23 16:13*	*1*
2-Fluorobiphenyl (Surr)	*55*		*31 - 120*	*02/28/23 05:19*	*02/28/23 16:13*	*1*
2-Fluorophenol	*32*		*17 - 120*	*02/28/23 05:19*	*02/28/23 16:13*	*1*
Nitrobenzene-d5	*63*		*27 - 120*	*02/28/23 05:19*	*02/28/23 16:13*	*1*
Phenol-d6 (Surr)	*22*		*10 - 120*	*02/28/23 05:19*	*02/28/23 16:13*	*1*
p-Terphenyl-d14 (Surr)	*72*		*45 - 120*	*02/28/23 05:19*	*02/28/23 16:13*	*1*

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/01/23 01:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*116*		*20 - 144*		*03/01/23 01:41*	*1*

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: BGBMP0003_20230225
Lab Sample ID: 570-129005-1
Date Collected: 02/25/23 10:30
Matrix: Water
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.051	0.036	mg/L		03/03/23 17:08	03/13/23 15:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*96*		*53 - 151*	*03/03/23 17:08*	*03/13/23 15:46*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			02/28/23 03:18	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND	BU BV	0.20	0.019	ug/L			02/28/23 06:18	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.6		1.0	0.36	mg/L			02/28/23 06:08	1
Nitrite as N	0.049	J,DX BU BV	0.10	0.043	mg/L			02/28/23 06:08	1
Fluoride	0.060	J,DX	0.10	0.046	mg/L			02/28/23 06:08	1
Nitrate as N	0.17	BU BV	0.10	0.020	mg/L			02/28/23 06:08	1
Sulfate	1.6		1.0	0.24	mg/L			02/28/23 06:08	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/28/23 21:53	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.22		0.10	0.020	mg/L			03/03/23 14:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	41	J,DX	500	3.5	ug/L		02/28/23 08:01	02/28/23 20:17	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	41	J,DX BU	500	3.5	ug/L			02/28/23 23:51	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**800**		15	8.6	ug/L		02/28/23 10:21	02/28/23 14:24	1
Silver	ND		1.0	0.23	ug/L		02/28/23 10:21	02/28/23 14:24	1
Arsenic	**0.60**	**J,DX**	1.0	0.16	ug/L		02/28/23 10:21	02/28/23 14:24	1
Barium	**18**		1.0	0.17	ug/L		02/28/23 10:21	02/28/23 14:24	1
Beryllium	ND		0.50	0.26	ug/L		02/28/23 10:21	02/28/23 14:24	1
Cadmium	ND		1.0	0.13	ug/L		02/28/23 10:21	02/28/23 14:24	1
Chromium	**1.6**	**J,DX MB**	2.0	0.14	ug/L		02/28/23 10:21	02/28/23 14:24	1
Copper	**2.3**		2.0	0.32	ug/L		02/28/23 10:21	02/28/23 14:24	1
Iron	**890**	**MB**	20	3.7	ug/L		02/28/23 10:21	02/28/23 14:24	1
Manganese	**16**		1.0	0.41	ug/L		02/28/23 10:21	02/28/23 14:24	1
Nickel	**2.4**		2.0	0.17	ug/L		02/28/23 10:21	02/28/23 14:24	1
Lead	**0.69**	**J,DX**	1.0	0.12	ug/L		02/28/23 10:21	02/28/23 14:24	1
Antimony	ND		2.0	0.36	ug/L		02/28/23 10:21	02/28/23 14:24	1
Zinc	**4.8**	**J,DX**	20	2.8	ug/L		02/28/23 10:21	02/28/23 14:24	1
Selenium	ND		2.0	0.52	ug/L		02/28/23 10:21	02/28/23 14:24	1
Thallium	ND		1.0	0.11	ug/L		02/28/23 10:21	02/28/23 14:24	1
Cobalt	**0.40**	**J,DX**	1.0	0.14	ug/L		02/28/23 10:21	02/28/23 14:24	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: BGBMP0003_20230225
Lab Sample ID: 570-129005-1
Date Collected: 02/25/23 10:30
Matrix: Water
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**290**	**BU**	15	8.6	ug/L			03/01/23 14:33	1
Silver	ND	BU	1.0	0.23	ug/L			03/01/23 14:33	1
Arsenic	**0.47**	**J,DX BU**	1.0	0.16	ug/L			03/01/23 14:33	1
Barium	**12**	**BU**	1.0	0.17	ug/L			03/01/23 14:33	1
Beryllium	ND	BU	0.50	0.26	ug/L			03/01/23 14:33	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/01/23 14:33	1
Chromium	**0.56**	**J,DX BU MB**	2.0	0.14	ug/L			03/01/23 14:33	1
Copper	**1.8**	**J,DX BU**	2.0	0.32	ug/L			03/01/23 14:33	1
Iron	**220**	**BU**	20	3.7	ug/L			03/01/23 14:33	1
Manganese	**2.3**	**BU**	1.0	0.41	ug/L			03/01/23 14:33	1
Nickel	**1.5**	**J,DX BU**	2.0	0.17	ug/L			03/01/23 14:33	1
Lead	**0.15**	**J,DX BU**	1.0	0.12	ug/L			03/01/23 14:33	1
Antimony	**1.4**	**J,DX BU**	2.0	0.36	ug/L			03/01/23 14:33	1
Zinc	ND	BU	20	2.8	ug/L			03/01/23 14:33	1
Selenium	ND	BU	2.0	0.52	ug/L			03/01/23 14:33	1
Cobalt	ND	BU	1.0	0.14	ug/L			03/01/23 14:33	1
Thallium	ND	BU	1.0	0.11	ug/L			03/01/23 14:33	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

General Chemistry

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		1.1	0.56	mg/L		03/01/23 14:04	03/02/23 12:27	1
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			03/06/23 11:03	1
Ammonia (EPA 350.1)	ND		0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:34	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/03/23 20:26	1
Turbidity (SM 2130B)	**13**	**BU BV**	0.05	0.05	NTU			02/28/23 20:55	1
Total Dissolved Solids (SM 2540C)	**71**		10	8.7	mg/L			03/02/23 16:19	1
Total Suspended Solids (SM 2540D)	**19**		1.7	1.4	mg/L			03/03/23 18:43	1
Carbon, Total Organic (SM 5310D)	**14**		4.0	2.1	mg/L			03/09/23 03:27	8
MBAS (SM 5540C)	ND	BU BV	0.20	0.050	mg/L		02/28/23 20:15	02/28/23 22:17	1
Biochemical Oxygen Demand (SM5210B)	ND	BU BV	2.0	1.0	mg/L			02/27/23 22:26	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**60**		1.0	1.0	umhos/cm			03/09/23 20:33	1
Settleable Solids (SM 2540F)	ND	BU BV	0.10	0.10	mL/L			02/27/23 20:30	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

General Chemistry - Dissolved

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			03/06/23 11:03	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			03/14/23 14:23	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/14/23 14:23	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			03/14/23 14:23	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/14/23 14:23	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/14/23 14:23	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			03/14/23 14:23	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			03/14/23 14:23	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/14/23 14:23	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			03/14/23 14:23	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	02/25/23
Date Received:	02/27/23
Work Order No:	570-129005
Date Analyzed:	03/14/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
BGBMP0003_20230225		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

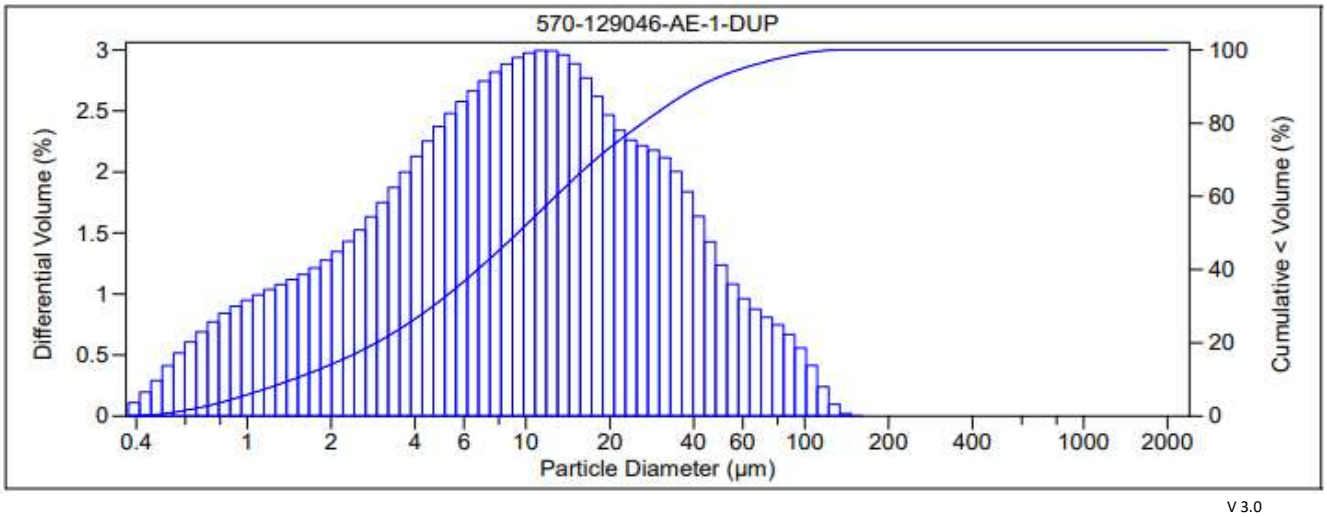
Haley & Aldrich, Inc.

Date Sampled:	02/26/23
Date Received:	02/27/23
Work Order No:	570-129046
Date Analyzed:	03/14/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230226		NA	0.017

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.09	4.50	69.41	26.00	95.41



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

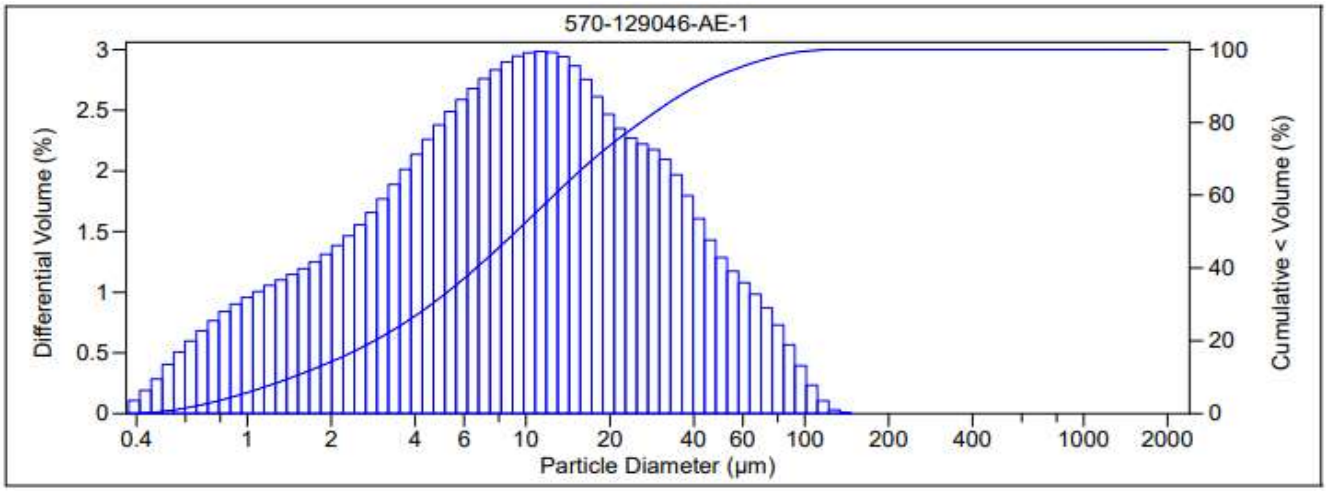
Haley & Aldrich, Inc.

Date Sampled:	02/26/23
Date Received:	02/27/23
Work Order No:	570-129046
Date Analyzed:	03/14/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

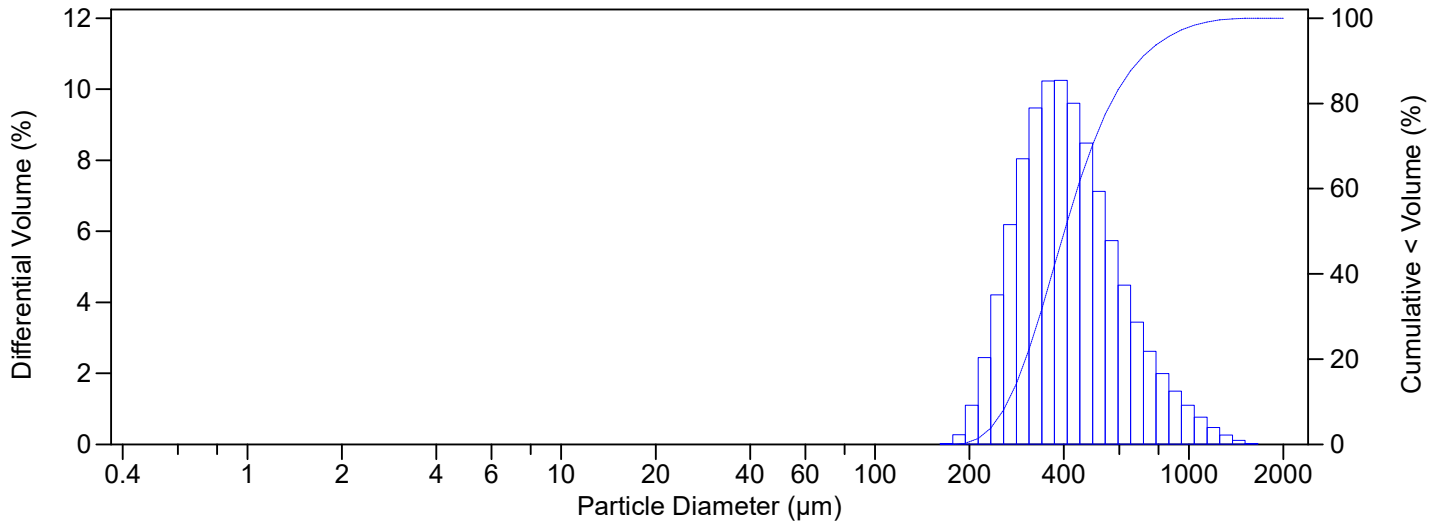
Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230226		NA	0.016

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.03	4.07	69.58	26.32	95.90



V 3.0

File name:	C:\LS13320\STD SAND_14 Mar 2023_15.23.15.$ls		
	STD SAND_14 Mar 2023_15.23.15.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	6		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.73%		
LS 13 320	Aqueous Liquid Module		
Start time:	15:22 14 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_14 Mar 2023_15.23.15.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	448.8 µm	S.D.:	189.4 µm
Median:	401.6 µm	Variance:	35886 µm^2
Mean/Median ratio:	1.117	Skewness:	1.667 Right skewed
Mode:	391.0 µm	Kurtosis:	3.705 Leptokurtic

d_{10}: 264.8 µm d_{50}: 401.6 µm d_{90}: 696.1 µm

Folk and Ward Statistics (Phi)

Mean:	1.28	Median:	1.32	Deviation:	0.54
Skewness:	-0.14	Kurtosis:	1.02		

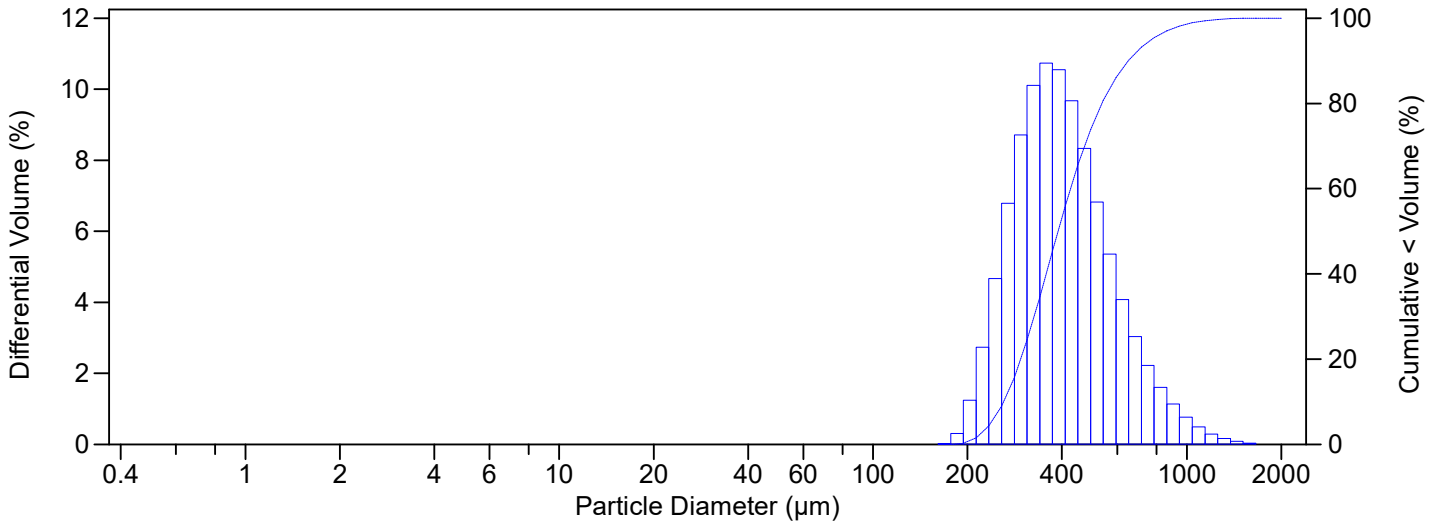
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
240.4 µm	288.1 µm	318.3 µm	366.7 µm	401.6 µm	525.3 µm	605.4 µm	835.4 µm

Particle Diameter µm	STD SAND _14 Mar 2023_15.23 .15.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.78
250	64.5
500	26.6
1000	2.14
2000	

STD SAND_14 Mar 2023_15.23.15.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.48
0.412	0	22.73	0	1255	0.27
0.452	0	24.95	0	1377	0.12
0.496	0	27.39	0	1512	0.026
0.545	0	30.07	0	1660	0.0014
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.017		
3.206	0	176.9	0.27		
3.519	0	194.2	1.10		
3.863	0	213.2	2.45		
4.241	0	234.1	4.21		
4.656	0	256.9	6.19		
5.111	0	282.1	8.05		
5.611	0	309.6	9.47		
6.159	0	339.9	10.2		
6.761	0	373.1	10.3		
7.422	0	409.6	9.61		
8.148	0	449.7	8.48		
8.944	0	493.6	7.12		
9.819	0	541.9	5.74		
10.78	0	594.9	4.48		
11.83	0	653.0	3.44		
12.99	0	716.9	2.62		
14.26	0	786.9	2.00		
15.65	0	863.9	1.50		
17.18	0	948.3	1.10		
18.86	0	1041	0.76		

File name:	C:\LS13320\STD SAND_14 Mar 2023_15.49.46.$ls		
	STD SAND_14 Mar 2023_15.49.46.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	8		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.67%		
LS 13 320	Aqueous Liquid Module		
Start time:	15:48 14 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	11%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_14 Mar 2023_15.49.46.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	430.5 µm	S.D.:	174.0 µm
Median:	389.3 µm	Variance:	30293 µm^2
Mean/Median ratio:	1.106	Skewness:	1.746 Right skewed
Mode:	356.1 µm	Kurtosis:	4.555 Leptokurtic

d_{10}: 260.7 µm d_{50}: 389.3 µm d_{90}: 650.8 µm

Folk and Ward Statistics (Phi)

Mean:	1.33	Median:	1.36	Deviation:	0.51
Skewness:	-0.13	Kurtosis:	1.01		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
237.4 µm	282.8 µm	311.2 µm	356.6 µm	389.3 µm	501.4 µm	574.3 µm	773.8 µm

Particle Diameter µm	STD SAND _14 Mar 2023_15.49 .46.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.56
250	67.2
500	23.8
1000	1.41
2000	

STD SAND_14 Mar 2023_15.49.46.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.29
0.412	0	22.73	0	1255	0.16
0.452	0	24.95	0	1377	0.089
0.496	0	27.39	0	1512	0.031
0.545	0	30.07	0	1660	0.0027
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.019		
3.206	0	176.9	0.31		
3.519	0	194.2	1.24		
3.863	0	213.2	2.74		
4.241	0	234.1	4.67		
4.656	0	256.9	6.79		
5.111	0	282.1	8.72		
5.611	0	309.6	10.1		
6.159	0	339.9	10.7		
6.761	0	373.1	10.6		
7.422	0	409.6	9.67		
8.148	0	449.7	8.34		
8.944	0	493.6	6.82		
9.819	0	541.9	5.36		
10.78	0	594.9	4.08		
11.83	0	653.0	3.04		
12.99	0	716.9	2.23		
14.26	0	786.9	1.61		
15.65	0	863.9	1.13		
17.18	0	948.3	0.77		
18.86	0	1041	0.49		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-129005-1	BGBMP0003_20230225	87	97	93	100
570-129005-2	TB_20230225-1	82	92	97	99
LCS 570-307642/1003	Lab Control Sample	94	98	95	100
LCSD 570-307642/4	Lab Control Sample Dup	94	98	96	98
MB 570-307642/6	Method Blank	90	95	96	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		14DCBTN
Lab Sample ID	Client Sample ID	(67-133)
570-129005-1	BGBMP0003_20230225	110
LCS 570-307594/4	Lab Control Sample	95
LCSD 570-307594/5	Lab Control Sample Dup	99
MB 570-307594/7	Method Blank	101

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-129005-1	BGBMP0003_20230225	72	55	32	63	22	72
LCS 570-307149/2-A	Lab Control Sample	107	84	48	76	34	106
LCSD 570-307149/3-A	Lab Control Sample Dup	95	69	44	66	31	86
MB 570-307149/1-A	Method Blank	81	60	42	68	29	78

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(20-144)
570-129005-1	BGBMP0003_20230225	116

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)										
Lab Sample ID	Client Sample ID	BFB1 (20-144)										
LCS 570-307841/31	Lab Control Sample	119										
LCSD 570-307841/32	Lab Control Sample Dup	118										
MB 570-307841/33	Method Blank	119										

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)										
Lab Sample ID	Client Sample ID	OTCSN1 (53-151)										
570-129005-1	BGBMP0003_20230225	96										
LCS 570-308878/2-A	Lab Control Sample	99										
LCSD 570-308878/3-A	Lab Control Sample Dup	110										
MB 570-308878/1-A	Method Blank	105										

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-307642/6
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 12:54	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 12:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 12:54	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 12:54	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 12:54	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 12:54	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 12:54	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 12:54	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 12:54	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 12:54	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 12:54	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 12:54	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 12:54	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 12:54	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 12:54	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 12:54	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 12:54	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 12:54	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 12:54	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 12:54	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 12:54	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 12:54	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 12:54	1
Acetone	ND		20	16	ug/L			02/28/23 12:54	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 12:54	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 12:54	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 12:54	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 12:54	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 12:54	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 12:54	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 12:54	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 12:54	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 12:54	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 12:54	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 12:54	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 12:54	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-307642/6
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 12:54	1
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 12:54	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Ethanol	ND		100	65	ug/L			02/28/23 12:54	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 12:54	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 12:54	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Isopropanol	ND		250	120	ug/L			02/28/23 12:54	1
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 12:54	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 12:54	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 12:54	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 12:54	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 12:54	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 12:54	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 12:54	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 12:54	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 12:54	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 12:54	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 12:54	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 12:54	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 12:54	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 12:54	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 12:54	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 12:54	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 12:54	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 12:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*60 - 140*		*02/28/23 12:54*	*1*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*02/28/23 12:54*	*1*
Dibromofluoromethane (Surr)	*96*		*60 - 140*		*02/28/23 12:54*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*02/28/23 12:54*	*1*

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.5		ug/L		105	60 - 140
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.1		ug/L		101	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.5		ug/L		115	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloroethane	10.0	10.4		ug/L		104	70 - 130
1,1-Dichloroethene	10.0	10.8		ug/L		108	50 - 150
1,1-Dichloropropene	10.0	11.1		ug/L		111	60 - 140
1,2,3-Trichlorobenzene	10.0	11.1		ug/L		111	60 - 140
1,2,3-Trichloropropane	10.0	9.85		ug/L		99	60 - 140
1,2,4-Trichlorobenzene	10.0	10.9		ug/L		109	60 - 140
1,2,4-Trimethylbenzene	10.0	10.3		ug/L		103	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	9.21		ug/L		92	60 - 140
1,2-Dibromoethane	10.0	10.6		ug/L		106	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	11.0		ug/L		110	60 - 140
1,2-Dichlorobenzene	10.0	10.7		ug/L		107	65 - 135
1,2-Dichloroethane	10.0	9.48		ug/L		95	70 - 130
1,2-Dichloropropane	10.0	10.5		ug/L		105	35 - 165
1,3,5-Trimethylbenzene	10.0	10.8		ug/L		108	60 - 140
1,3-Dichlorobenzene	10.0	11.0		ug/L		110	70 - 130
1,3-Dichloropropane	10.0	10.8		ug/L		108	60 - 140
1,4-Dichlorobenzene	10.0	10.8		ug/L		108	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	11.2		ug/L		112	60 - 140
2,2-Dichloropropane	10.0	11.3		ug/L		113	60 - 140
2-Butanone (MEK)	10.0	9.16		ug/L		92	60 - 140
2-Chloroethyl vinyl ether	10.0	8.35		ug/L		83	1 - 225
2-Chlorotoluene	10.0	10.4		ug/L		104	60 - 140
2-Hexanone	10.0	9.57		ug/L		96	60 - 140
4-Chlorotoluene	10.0	10.3		ug/L		103	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	9.75		ug/L		98	60 - 140
Acetone	10.0	ND		ug/L		110	60 - 140
Acrolein	20.0	19.6		ug/L		98	60 - 140
Acrylonitrile	10.0	9.84		ug/L		98	60 - 140
Benzene	10.0	10.9		ug/L		109	65 - 135
Bromobenzene	10.0	10.9		ug/L		109	60 - 140
Bromochloromethane	10.0	10.8		ug/L		108	60 - 140
Bromodichloromethane	10.0	10.4		ug/L		104	65 - 135
Bromoform	10.0	11.1		ug/L		111	70 - 130
Bromomethane	10.0	9.20		ug/L		92	15 - 185
Carbon disulfide	10.0	11.7		ug/L		117	60 - 140
Carbon tetrachloride	10.0	10.7		ug/L		107	70 - 130
Chlorobenzene	10.0	10.9		ug/L		109	65 - 135
Chloroethane	10.0	11.4		ug/L		114	40 - 160
Chloroform	10.0	9.95		ug/L		99	70 - 135
Chloromethane	10.0	8.96		ug/L		90	1 - 205
cis-1,2-Dichloroethene	10.0	10.7		ug/L		107	60 - 140
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	25 - 175
Cyclohexane	10.0	11.5		ug/L		115	60 - 140
Dibromochloromethane	10.0	10.8		ug/L		108	70 - 135
Dibromomethane	10.0	10.2		ug/L		102	60 - 140
Dichlorodifluoromethane	10.0	10.6		ug/L		106	60 - 140
Di-isopropyl ether (DIPE)	10.0	10.3		ug/L		103	60 - 140
Ethanol	100	128		ug/L		128	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	10.4		ug/L		104	60 - 140
Ethylbenzene	10.0	10.9		ug/L		109	60 - 140
Hexachloro-1,3-butadiene	10.0	11.0		ug/L		110	60 - 140
Isopropanol	50.0	ND		ug/L		97	60 - 140
Isopropylbenzene	10.0	11.3		ug/L		113	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	10.6		ug/L		106	60 - 140
Methylene Chloride	10.0	10.1		ug/L		101	60 - 140
Naphthalene	10.0	10.7		ug/L		107	60 - 140
n-Butylbenzene	10.0	11.3		ug/L		113	60 - 140
N-Propylbenzene	10.0	11.3		ug/L		113	60 - 140
o-Xylene	10.0	10.7		ug/L		107	60 - 140
m,p-Xylene	20.0	22.0		ug/L		110	60 - 140
p-Isopropyltoluene	10.0	11.0		ug/L		110	60 - 140
sec-Butylbenzene	10.0	11.2		ug/L		112	60 - 140
Styrene	10.0	11.0		ug/L		110	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	10.2		ug/L		102	60 - 140
tert-Butyl alcohol (TBA)	50.0	57.4		ug/L		115	60 - 140
tert-Butylbenzene	10.0	11.1		ug/L		111	60 - 140
Tetrachloroethene	10.0	11.5		ug/L		115	70 - 130
Tetrahydrofuran	10.0	9.15	J,DX	ug/L		92	60 - 140
Toluene	10.0	10.8		ug/L		108	70 - 130
trans-1,2-Dichloroethene	10.0	11.2		ug/L		112	70 - 130
trans-1,3-Dichloropropene	10.0	10.5		ug/L		105	50 - 150
Trichloroethene	10.0	10.6		ug/L		106	65 - 135
Trichlorofluoromethane	10.0	10.9		ug/L		109	50 - 150
Vinyl acetate	10.0	9.59		ug/L		96	60 - 140
Vinyl chloride	10.0	11.2		ug/L		112	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*60 - 140*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Dibromofluoromethane (Surr)	*95*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.7		ug/L		107	60 - 140	2	30
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	70 - 130	1	36
1,1,2,2-Tetrachloroethane	10.0	9.96		ug/L		100	60 - 140	2	61
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.8		ug/L		118	60 - 140	3	30
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	70 - 130	1	45
1,1-Dichloroethane	10.0	10.7		ug/L		107	70 - 130	3	40
1,1-Dichloroethene	10.0	10.8		ug/L		108	50 - 150	0	32
1,1-Dichloropropene	10.0	11.2		ug/L		112	60 - 140	1	30
1,2,3-Trichlorobenzene	10.0	10.6		ug/L		106	60 - 140	4	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichloropropane			10.0	10.1		ug/L		101	60 - 140	3	30
1,2,4-Trichlorobenzene			10.0	10.7		ug/L		107	60 - 140	2	30
1,2,4-Trimethylbenzene			10.0	10.3		ug/L		103	60 - 140	0	30
1,2-Dibromo-3-Chloropropane			10.0	9.70		ug/L		97	60 - 140	5	30
1,2-Dibromoethane			10.0	10.7		ug/L		107	60 - 140	1	30
1,2-Dichloro-1,1,2-trifluoroethane			10.0	11.4		ug/L		114	60 - 140	3	30
1,2-Dichlorobenzene			10.0	10.2		ug/L		102	65 - 135	4	57
1,2-Dichloroethane			10.0	9.66		ug/L		97	70 - 130	2	49
1,2-Dichloropropane			10.0	10.3		ug/L		103	35 - 165	2	55
1,3,5-Trimethylbenzene			10.0	11.1		ug/L		111	60 - 140	3	30
1,3-Dichlorobenzene			10.0	10.8		ug/L		108	70 - 130	2	43
1,3-Dichloropropane			10.0	10.6		ug/L		106	60 - 140	2	30
1,4-Dichlorobenzene			10.0	10.7		ug/L		107	65 - 135	0	57
2,2-Dichloro-1,1,1-trifluoroethane			10.0	10.9		ug/L		109	60 - 140	2	30
2,2-Dichloropropane			10.0	11.4		ug/L		114	60 - 140	1	30
2-Butanone (MEK)			10.0	8.23		ug/L		82	60 - 140	11	30
2-Chloroethyl vinyl ether			10.0	8.67		ug/L		87	1 - 225	4	71
2-Chlorotoluene			10.0	10.9		ug/L		109	60 - 140	4	30
2-Hexanone			10.0	9.54		ug/L		95	60 - 140	0	30
4-Chlorotoluene			10.0	10.3		ug/L		103	60 - 140	0	30
4-Methyl-2-pentanone (MIBK)			10.0	10.2		ug/L		102	60 - 140	5	30
Acetone			10.0	ND		ug/L		108	60 - 140	2	30
Acrolein			20.0	19.6		ug/L		98	60 - 140	0	60
Acrylonitrile			10.0	10.0		ug/L		100	60 - 140	2	60
Benzene			10.0	11.0		ug/L		110	65 - 135	1	61
Bromobenzene			10.0	11.1		ug/L		111	60 - 140	2	30
Bromochloromethane			10.0	11.2		ug/L		112	60 - 140	3	30
Bromodichloromethane			10.0	10.4		ug/L		104	65 - 135	0	56
Bromoform			10.0	10.5		ug/L		105	70 - 130	6	42
Bromomethane			10.0	8.84		ug/L		88	15 - 185	4	61
Carbon disulfide			10.0	11.3		ug/L		113	60 - 140	3	30
Carbon tetrachloride			10.0	10.6		ug/L		106	70 - 130	0	41
Chlorobenzene			10.0	11.0		ug/L		110	65 - 135	1	53
Chloroethane			10.0	11.5		ug/L		115	40 - 160	1	78
Chloroform			10.0	10.1		ug/L		101	70 - 135	2	30
Chloromethane			10.0	9.80		ug/L		98	1 - 205	9	60
cis-1,2-Dichloroethene			10.0	10.8		ug/L		108	60 - 140	1	30
cis-1,3-Dichloropropene			10.0	10.8		ug/L		108	25 - 175	1	58
Cyclohexane			10.0	12.1		ug/L		121	60 - 140	5	30
Dibromochloromethane			10.0	10.6		ug/L		106	70 - 135	2	50
Dibromomethane			10.0	10.2		ug/L		102	60 - 140	0	30
Dichlorodifluoromethane			10.0	11.0		ug/L		110	60 - 140	4	30
Di-isopropyl ether (DIPE)			10.0	10.3		ug/L		103	60 - 140	0	30
Ethanol			100	89.0	J,DX BA	ug/L		89	60 - 140	36	30
Ethyl-t-butyl ether (ETBE)			10.0	10.8		ug/L		108	60 - 140	3	30
Ethylbenzene			10.0	11.0		ug/L		110	60 - 140	0	63
Hexachloro-1,3-butadiene			10.0	11.1		ug/L		111	60 - 140	1	30
Isopropanol			50.0	ND		ug/L		102	60 - 140	5	30
Isopropylbenzene			10.0	11.2		ug/L		112	60 - 140	1	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	10.5		ug/L		105	60 - 140	0	30
Methylene Chloride	10.0	10.1		ug/L		101	60 - 140	0	28
Naphthalene	10.0	10.7		ug/L		107	60 - 140	0	30
n-Butylbenzene	10.0	11.4		ug/L		114	60 - 140	1	30
N-Propylbenzene	10.0	11.5		ug/L		115	60 - 140	1	30
o-Xylene	10.0	10.7		ug/L		107	60 - 140	0	30
m,p-Xylene	20.0	22.2		ug/L		111	60 - 140	1	30
p-Isopropyltoluene	10.0	10.9		ug/L		109	60 - 140	1	30
sec-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	2	30
Styrene	10.0	11.2		ug/L		112	60 - 140	1	30
Tert-amyl-methyl ether (TAME)	10.0	10.2		ug/L		102	60 - 140	0	30
tert-Butyl alcohol (TBA)	50.0	50.9		ug/L		102	60 - 140	12	30
tert-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	1	30
Tetrachloroethene	10.0	11.7		ug/L		117	70 - 130	2	39
Tetrahydrofuran	10.0	9.39	J,DX	ug/L		94	60 - 140	3	30
Toluene	10.0	10.6		ug/L		106	70 - 130	2	41
trans-1,2-Dichloroethene	10.0	11.5		ug/L		115	70 - 130	2	45
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	50 - 150	3	86
Trichloroethene	10.0	10.7		ug/L		107	65 - 135	1	48
Trichlorofluoromethane	10.0	10.9		ug/L		109	50 - 150	0	84
Vinyl acetate	10.0	9.94		ug/L		99	60 - 140	4	30
Vinyl chloride	10.0	11.6		ug/L		116	5 - 195	4	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*60 - 140*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Dibromofluoromethane (Surr)	*96*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-307594/7
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			02/28/23 12:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*101*		*67 - 133*		*02/28/23 12:05*	*1*

Lab Sample ID: LCS 570-307594/4
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	18.4		ug/L		92	75 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307594/4
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*95*		*67 - 133*

Lab Sample ID: LCSD 570-307594/5
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	18.7		ug/L		93	75 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*99*		*67 - 133*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-307149/1-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Chlorophenol	ND		0.20	0.096	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Nitrophenol	ND		5.0	3.5	ug/L		02/27/23 05:32	02/27/23 17:25	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		02/27/23 05:32	02/27/23 17:25	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Nitrophenol	ND		5.0	3.4	ug/L		02/27/23 05:32	02/27/23 17:25	1
Acenaphthene	ND		0.20	0.098	ug/L		02/27/23 05:32	02/27/23 17:25	1
Acenaphthylene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Anthracene	ND		0.20	0.084	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzidine	ND		5.0	2.7	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[b]fluoranthene	0.123	J,DX	0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-307149/1-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		02/27/23 05:32	02/27/23 17:25	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		02/27/23 05:32	02/27/23 17:25	1
Chrysene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		02/27/23 05:32	02/27/23 17:25	1
Diethyl phthalate	ND		2.0	0.18	ug/L		02/27/23 05:32	02/27/23 17:25	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		02/27/23 05:32	02/27/23 17:25	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		02/27/23 05:32	02/27/23 17:25	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		02/27/23 05:32	02/27/23 17:25	1
Fluoranthene	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
Fluorene	ND		0.20	0.095	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachloroethane	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Isophorone	ND		0.20	0.099	ug/L		02/27/23 05:32	02/27/23 17:25	1
Naphthalene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Nitrobenzene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Pentachlorophenol	ND		1.0	0.84	ug/L		02/27/23 05:32	02/27/23 17:25	1
Phenanthrene	ND		0.20	0.16	ug/L		02/27/23 05:32	02/27/23 17:25	1
Phenol	ND		1.0	0.52	ug/L		02/27/23 05:32	02/27/23 17:25	1
Pyrene	ND		0.20	0.086	ug/L		02/27/23 05:32	02/27/23 17:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*81*		*28 - 127*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorobiphenyl (Surr)	*60*		*31 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorophenol	*42*		*17 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Phenol-d6 (Surr)	*29*		*10 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
p-Terphenyl-d14 (Surr)	*78*		*45 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	12.1		ug/L		61	57 - 130
1,2-Dichlorobenzene	20.0	13.7		ug/L		69	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	18.7		ug/L		93	60 - 115
1,3-Dichlorobenzene	20.0	12.6		ug/L		63	37 - 120
1,4-Dichlorobenzene	20.0	13.1		ug/L		66	39 - 120
2,4,6-Trichlorophenol	20.0	21.3		ug/L		107	52 - 129

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dichlorophenol	20.0	17.6		ug/L		88	53 - 122
2,4-Dimethylphenol	20.0	17.3		ug/L		86	42 - 120
2,4-Dinitrophenol	20.0	21.2		ug/L		106	1 - 173
2,4-Dinitrotoluene	20.0	25.8	LQ	ug/L		129	48 - 127
2,6-Dinitrotoluene	20.0	25.4		ug/L		127	68 - 137
2-Chloronaphthalene	20.0	16.4		ug/L		82	65 - 120
2-Chlorophenol	20.0	16.6		ug/L		83	36 - 120
2-Nitrophenol	20.0	20.2		ug/L		101	45 - 167
3,3'-Dichlorobenzidine	20.0	22.3		ug/L		111	8 - 213
4,6-Dinitro-2-methylphenol	20.0	27.5	LQ	ug/L		138	53 - 130
4-Bromophenyl phenyl ether	20.0	17.8		ug/L		89	65 - 120
4-Chloro-3-methylphenol	20.0	20.1		ug/L		101	41 - 128
4-Chlorophenyl phenyl ether	20.0	18.4		ug/L		92	38 - 145
4-Nitrophenol	20.0	12.6		ug/L		63	13 - 129
Acenaphthene	20.0	17.9		ug/L		89	60 - 132
Acenaphthylene	20.0	21.3		ug/L		107	54 - 126
Anthracene	20.0	21.0		ug/L		105	43 - 120
Benzidine	20.0	9.42		ug/L		47	20 - 164
Benzo[a]anthracene	20.0	23.4		ug/L		117	42 - 133
Benzo[a]pyrene	20.0	25.1		ug/L		126	32 - 148
Benzo[b]fluoranthene	20.0	23.5		ug/L		117	42 - 140
Benzo[g,h,i]perylene	20.0	23.9		ug/L		120	1 - 195
Benzo[k]fluoranthene	20.0	24.9		ug/L		124	25 - 146
bis (2-chloroisopropyl) ether	20.0	16.6		ug/L		83	63 - 139
Bis(2-chloroethoxy)methane	20.0	14.9		ug/L		75	49 - 165
Bis(2-chloroethyl)ether	20.0	16.1		ug/L		80	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	25.7		ug/L		128	29 - 137
Butyl benzyl phthalate	20.0	25.3		ug/L		126	1 - 140
Chrysene	20.0	22.3		ug/L		111	44 - 140
Dibenz(a,h)anthracene	20.0	22.4		ug/L		112	1 - 200
Diethyl phthalate	20.0	22.9		ug/L		115	1 - 120
Dimethyl phthalate	20.0	22.7		ug/L		113	1 - 120
Di-n-butyl phthalate	20.0	24.2	LQ	ug/L		121	8 - 120
Di-n-octyl phthalate	20.0	28.5	LQ	ug/L		142	19 - 132
Fluoranthene	20.0	22.7		ug/L		114	43 - 121
Fluorene	20.0	19.1		ug/L		95	70 - 120
Hexachlorobenzene	20.0	17.8		ug/L		89	8 - 142
Hexachlorobutadiene	20.0	11.9		ug/L		59	38 - 120
Hexachlorocyclopentadiene	20.0	22.1		ug/L		110	43 - 145
Hexachloroethane	20.0	13.1		ug/L		66	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	22.4		ug/L		112	1 - 151
Isophorone	20.0	17.4		ug/L		87	47 - 180
Naphthalene	20.0	12.5		ug/L		62	36 - 120
Nitrobenzene	20.0	16.2		ug/L		81	54 - 158
N-Nitrosodimethylamine	20.0	9.35		ug/L		47	20 - 120
N-Nitrosodi-n-propylamine	20.0	17.7		ug/L		88	14 - 198
N-Nitrosodiphenylamine	20.0	21.4		ug/L		107	65 - 133
Pentachlorophenol	20.0	14.9		ug/L		74	38 - 152
Phenanthrene	20.0	19.3		ug/L		96	65 - 120

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Phenol			20.0	7.24		ug/L		36	17 - 120		
Pyrene			20.0	21.0		ug/L		105	70 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*107*		*28 - 127*
2-Fluorobiphenyl (Surr)	*84*		*31 - 120*
2-Fluorophenol	*48*		*17 - 120*
Nitrobenzene-d5	*76*		*27 - 120*
Phenol-d6 (Surr)	*34*		*10 - 120*
p-Terphenyl-d14 (Surr)	*106*		*45 - 120*

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene			20.0	10.8	LR	ug/L		54	57 - 130	12	30
1,2-Dichlorobenzene			20.0	12.4		ug/L		62	40 - 120	10	20
1,2-Diphenylhydrazine(as Azobenzene)			20.0	16.4		ug/L		82	60 - 115	13	30
1,3-Dichlorobenzene			20.0	11.8		ug/L		59	37 - 120	7	20
1,4-Dichlorobenzene			20.0	12.2		ug/L		61	39 - 120	7	20
2,4,6-Trichlorophenol			20.0	17.5		ug/L		88	52 - 129	20	35
2,4-Dichlorophenol			20.0	15.3		ug/L		76	53 - 122	14	30
2,4-Dimethylphenol			20.0	15.3		ug/L		76	42 - 120	12	35
2,4-Dinitrophenol			20.0	16.7		ug/L		84	1 - 173	23	79
2,4-Dinitrotoluene			20.0	21.5		ug/L		107	48 - 127	18	25
2,6-Dinitrotoluene			20.0	21.0		ug/L		105	68 - 137	19	29
2-Chloronaphthalene			20.0	13.9	BA	ug/L		69	65 - 120	17	15
2-Chlorophenol			20.0	15.2		ug/L		76	36 - 120	9	37
2-Nitrophenol			20.0	18.1		ug/L		91	45 - 167	11	33
3,3'-Dichlorobenzidine			20.0	19.0		ug/L		95	8 - 213	16	65
4,6-Dinitro-2-methylphenol			20.0	24.6		ug/L		123	53 - 130	11	122
4-Bromophenyl phenyl ether			20.0	15.9		ug/L		80	65 - 120	11	26
4-Chloro-3-methylphenol			20.0	16.9		ug/L		84	41 - 128	18	44
4-Chlorophenyl phenyl ether			20.0	15.3		ug/L		76	38 - 145	18	36
4-Nitrophenol			20.0	10.3		ug/L		51	13 - 129	20	79
Acenaphthene			20.0	15.0		ug/L		75	60 - 132	17	29
Acenaphthylene			20.0	17.9		ug/L		89	54 - 126	17	45
Anthracene			20.0	18.3		ug/L		91	43 - 120	14	40
Benzidine			20.0	6.51	BA	ug/L		33	20 - 164	37	30
Benzo[a]anthracene			20.0	19.2		ug/L		96	42 - 133	20	32
Benzo[a]pyrene			20.0	20.7		ug/L		103	32 - 148	19	43
Benzo[b]fluoranthene			20.0	19.6		ug/L		98	42 - 140	18	43
Benzo[g,h,i]perylene			20.0	20.9		ug/L		105	1 - 195	13	61
Benzo[k]fluoranthene			20.0	20.8		ug/L		104	25 - 146	18	38
bis (2-chloroisopropyl) ether			20.0	15.2		ug/L		76	63 - 139	9	46
Bis(2-chloroethoxy)methane			20.0	12.9		ug/L		65	49 - 165	14	32
Bis(2-chloroethyl)ether			20.0	14.1		ug/L		71	43 - 126	13	65

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate			20.0	22.7		ug/L		114	29 - 137	12	50
Butyl benzyl phthalate			20.0	22.0		ug/L		110	1 - 140	14	36
Chrysene			20.0	18.6		ug/L		93	44 - 140	18	53
Dibenz(a,h)anthracene			20.0	19.4		ug/L		97	1 - 200	14	75
Diethyl phthalate			20.0	19.1		ug/L		96	1 - 120	18	60
Dimethyl phthalate			20.0	18.6		ug/L		93	1 - 120	20	110
Di-n-butyl phthalate			20.0	20.5		ug/L		103	8 - 120	16	28
Di-n-octyl phthalate			20.0	26.1		ug/L		131	19 - 132	9	42
Fluoranthene			20.0	18.9		ug/L		95	43 - 121	18	40
Fluorene			20.0	16.1		ug/L		80	70 - 120	17	23
Hexachlorobenzene			20.0	15.4		ug/L		77	8 - 142	15	33
Hexachlorobutadiene			20.0	10.6		ug/L		53	38 - 120	11	38
Hexachlorocyclopentadiene			20.0	18.5		ug/L		92	43 - 145	18	22
Hexachloroethane			20.0	12.0		ug/L		60	55 - 120	9	32
Indeno[1,2,3-cd]pyrene			20.0	19.5		ug/L		97	1 - 151	14	60
Isophorone			20.0	15.1		ug/L		75	47 - 180	14	56
Naphthalene			20.0	11.5		ug/L		57	36 - 120	9	39
Nitrobenzene			20.0	14.2		ug/L		71	54 - 158	13	37
N-Nitrosodimethylamine			20.0	9.77		ug/L		49	20 - 120	4	21
N-Nitrosodi-n-propylamine			20.0	15.6		ug/L		78	14 - 198	12	52
N-Nitrosodiphenylamine			20.0	19.0		ug/L		95	65 - 133	12	20
Pentachlorophenol			20.0	12.6		ug/L		63	38 - 152	16	52
Phenanthrene			20.0	16.7		ug/L		83	65 - 120	15	24
Phenol			20.0	6.65		ug/L		33	17 - 120	8	39
Pyrene			20.0	16.9		ug/L		84	70 - 120	22	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*95*		*28 - 127*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*
2-Fluorophenol	*44*		*17 - 120*
Nitrobenzene-d5	*66*		*27 - 120*
Phenol-d6 (Surr)	*31*		*10 - 120*
p-Terphenyl-d14 (Surr)	*86*		*45 - 120*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-307841/33
Matrix: Water
Analysis Batch: 307841

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			02/28/23 23:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*20 - 144*		*02/28/23 23:06*	*1*

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCS 570-307841/31
Matrix: Water
Analysis Batch: 307841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	2120		ug/L		110	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*119*		*20 - 144*

Lab Sample ID: LCSD 570-307841/32
Matrix: Water
Analysis Batch: 307841

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	2090		ug/L		109	71 - 120	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*118*		*20 - 144*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-308878/1-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/03/23 17:08	03/05/23 03:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*105*		*53 - 151*	*03/03/23 17:08*	*03/05/23 03:27*	*1*

Lab Sample ID: LCS 570-308878/2-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308878

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			4.00	3.67		mg/L		92	65 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*99*		*53 - 151*

Lab Sample ID: LCSD 570-308878/3-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308878

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			4.00	3.89		mg/L		97	65 - 129	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*110*		*53 - 151*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-307526/4
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			02/28/23 02:19	1

Lab Sample ID: LCS 570-307526/5
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	50.5		ug/L		101	95 - 107

Lab Sample ID: LCSD 570-307526/6
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	50.4		ug/L		101	95 - 107	0	20

Lab Sample ID: MB 570-307529/1-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			02/28/23 05:18	1

Lab Sample ID: LCS 570-307529/2-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	50.4		ug/L		101	95 - 107

Lab Sample ID: LCSD 570-307529/3-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	50.7		ug/L		101	95 - 107	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-307534/5
Matrix: Water
Analysis Batch: 307534

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			02/28/23 04:07	1
Nitrate as N	ND		0.10	0.020	mg/L			02/28/23 04:07	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 570-307534/6
Matrix: Water
Analysis Batch: 307534

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.59		mg/L		103	90 - 110
Nitrate as N	5.00	5.05		mg/L		101	90 - 110

Lab Sample ID: LCSD 570-307534/7
Matrix: Water
Analysis Batch: 307534

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.59		mg/L		103	90 - 110	0	15
Nitrate as N	5.00	5.02		mg/L		100	90 - 110	0	15

Lab Sample ID: MB 570-307535/5
Matrix: Water
Analysis Batch: 307535

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			02/28/23 04:07	1
Fluoride	ND		0.10	0.046	mg/L			02/28/23 04:07	1
Sulfate	ND		1.0	0.24	mg/L			02/28/23 04:07	1

Lab Sample ID: LCS 570-307535/6
Matrix: Water
Analysis Batch: 307535

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.2		mg/L		100	90 - 110
Fluoride	2.50	2.60		mg/L		104	90 - 110
Sulfate	50.0	49.7		mg/L		99	90 - 110

Lab Sample ID: LCSD 570-307535/7
Matrix: Water
Analysis Batch: 307535

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	50.2		mg/L		100	90 - 110	0	15
Fluoride	2.50	2.65		mg/L		106	90 - 110	2	15
Sulfate	50.0	49.6		mg/L		99	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-307808/7
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/28/23 19:27	1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCS 570-307808/8
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.2		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-307808/9
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.1		ug/L		96	85 - 115	0	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-307563/1-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		02/28/23 08:01	02/28/23 19:24	1

Lab Sample ID: LCS 570-307563/2-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	489	J,DX	ug/L		98	85 - 115

Lab Sample ID: LCSD 570-307563/3-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	492	J,DX	ug/L		98	85 - 115	1	20

Lab Sample ID: MB 570-307724/1-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			02/28/23 23:34	1

Lab Sample ID: LCS 570-307724/2-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	434	J,DX	ug/L		87	85 - 115

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 570-307724/3-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	431	J,DX	ug/L		86	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-307628/1-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		02/28/23 10:21	02/28/23 13:23	1
Silver	ND		1.0	0.23	ug/L		02/28/23 10:21	02/28/23 13:23	1
Arsenic	ND		1.0	0.16	ug/L		02/28/23 10:21	02/28/23 13:23	1
Barium	ND		1.0	0.17	ug/L		02/28/23 10:21	02/28/23 13:23	1
Beryllium	ND		0.50	0.26	ug/L		02/28/23 10:21	02/28/23 13:23	1
Cadmium	ND		1.0	0.13	ug/L		02/28/23 10:21	02/28/23 13:23	1
Chromium	0.267	J,DX	2.0	0.14	ug/L		02/28/23 10:21	02/28/23 13:23	1
Copper	ND		2.0	0.32	ug/L		02/28/23 10:21	02/28/23 13:23	1
Iron	5.33	J,DX	20	3.7	ug/L		02/28/23 10:21	02/28/23 13:23	1
Manganese	ND		1.0	0.41	ug/L		02/28/23 10:21	02/28/23 13:23	1
Nickel	ND		2.0	0.17	ug/L		02/28/23 10:21	02/28/23 13:23	1
Lead	ND		1.0	0.12	ug/L		02/28/23 10:21	02/28/23 13:23	1
Antimony	ND		2.0	0.36	ug/L		02/28/23 10:21	02/28/23 13:23	1
Zinc	ND		20	2.8	ug/L		02/28/23 10:21	02/28/23 13:23	1
Selenium	ND		2.0	0.52	ug/L		02/28/23 10:21	02/28/23 13:23	1
Cobalt	ND		1.0	0.14	ug/L		02/28/23 10:21	02/28/23 13:23	1
Thallium	ND		1.0	0.11	ug/L		02/28/23 10:21	02/28/23 13:23	1

Lab Sample ID: LCS 570-307628/2-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum			80.0	77.7		ug/L		97	85 - 115
Silver			80.0	75.4		ug/L		94	85 - 115
Arsenic			80.0	76.7		ug/L		96	85 - 115
Barium			80.0	76.7		ug/L		96	85 - 115
Beryllium			80.0	76.3		ug/L		95	85 - 115
Cadmium			80.0	76.1		ug/L		95	85 - 115
Chromium			80.0	75.5		ug/L		94	85 - 115
Copper			80.0	74.3		ug/L		93	85 - 115
Iron			800	770		ug/L		96	85 - 115
Manganese			80.0	77.4		ug/L		97	85 - 115
Nickel			80.0	75.1		ug/L		94	85 - 115
Lead			80.0	76.9		ug/L		96	85 - 115
Antimony			80.0	77.4		ug/L		97	85 - 115
Zinc			80.0	75.3		ug/L		94	85 - 115
Selenium			80.0	79.2		ug/L		99	85 - 115
Cobalt			80.0	74.2		ug/L		93	85 - 115
Thallium			80.0	75.7		ug/L		95	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-307628/3-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum			80.0	80.2		ug/L		100	85 - 115	3	20
Silver			80.0	77.2		ug/L		96	85 - 115	2	20
Arsenic			80.0	77.7		ug/L		97	85 - 115	1	20
Barium			80.0	78.0		ug/L		98	85 - 115	2	20
Beryllium			80.0	74.5		ug/L		93	85 - 115	2	20
Cadmium			80.0	78.0		ug/L		97	85 - 115	2	20
Chromium			80.0	77.9		ug/L		97	85 - 115	3	20
Copper			80.0	76.4		ug/L		96	85 - 115	3	20
Iron			800	798		ug/L		100	85 - 115	4	20
Manganese			80.0	80.1		ug/L		100	85 - 115	3	20
Nickel			80.0	77.6		ug/L		97	85 - 115	3	20
Lead			80.0	78.1		ug/L		98	85 - 115	2	20
Antimony			80.0	81.2		ug/L		102	85 - 115	5	20
Zinc			80.0	77.4		ug/L		97	85 - 115	3	20
Selenium			80.0	81.9		ug/L		102	85 - 115	3	20
Cobalt			80.0	76.9		ug/L		96	85 - 115	4	20
Thallium			80.0	78.3		ug/L		98	85 - 115	3	20

Lab Sample ID: MB 570-308039/1-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			03/01/23 14:16	1
Silver	ND		1.0	0.23	ug/L			03/01/23 14:16	1
Arsenic	ND		1.0	0.16	ug/L			03/01/23 14:16	1
Barium	ND		1.0	0.17	ug/L			03/01/23 14:16	1
Beryllium	ND		0.50	0.26	ug/L			03/01/23 14:16	1
Cadmium	ND		1.0	0.13	ug/L			03/01/23 14:16	1
Chromium	0.163	J,DX	2.0	0.14	ug/L			03/01/23 14:16	1
Copper	ND		2.0	0.32	ug/L			03/01/23 14:16	1
Iron	ND		20	3.7	ug/L			03/01/23 14:16	1
Manganese	ND		1.0	0.41	ug/L			03/01/23 14:16	1
Nickel	ND		2.0	0.17	ug/L			03/01/23 14:16	1
Lead	ND		1.0	0.12	ug/L			03/01/23 14:16	1
Antimony	ND		2.0	0.36	ug/L			03/01/23 14:16	1
Zinc	ND		20	2.8	ug/L			03/01/23 14:16	1
Selenium	ND		2.0	0.52	ug/L			03/01/23 14:16	1
Cobalt	ND		1.0	0.14	ug/L			03/01/23 14:16	1
Thallium	ND		1.0	0.11	ug/L			03/01/23 14:16	1

Lab Sample ID: LCS 570-308039/2-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum			80.0	79.4		ug/L		99	85 - 115		
Silver			80.0	79.7		ug/L		100	85 - 115		
Arsenic			80.0	79.7		ug/L		100	85 - 115		

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-308039/2-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	80.0	79.3		ug/L		99	85 - 115
Beryllium	80.0	79.5		ug/L		99	85 - 115
Cadmium	80.0	80.0		ug/L		100	85 - 115
Chromium	80.0	80.1		ug/L		100	85 - 115
Copper	80.0	77.6		ug/L		97	85 - 115
Iron	800	814		ug/L		102	85 - 115
Manganese	80.0	81.3		ug/L		102	85 - 115
Nickel	80.0	78.1		ug/L		98	85 - 115
Lead	80.0	80.3		ug/L		100	85 - 115
Antimony	80.0	79.8		ug/L		100	85 - 115
Zinc	80.0	78.5		ug/L		98	85 - 115
Selenium	80.0	82.2		ug/L		103	85 - 115
Cobalt	80.0	78.7		ug/L		98	85 - 115
Thallium	80.0	80.5		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-308039/3-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	81.3		ug/L		102	85 - 115	2	20
Silver	80.0	79.8		ug/L		100	85 - 115	0	20
Arsenic	80.0	80.6		ug/L		101	85 - 115	1	20
Barium	80.0	79.2		ug/L		99	85 - 115	0	20
Beryllium	80.0	83.7		ug/L		105	85 - 115	5	20
Cadmium	80.0	80.5		ug/L		101	85 - 115	1	20
Chromium	80.0	80.0		ug/L		100	85 - 115	0	20
Copper	80.0	78.2		ug/L		98	85 - 115	1	20
Iron	800	814		ug/L		102	85 - 115	0	20
Manganese	80.0	81.5		ug/L		102	85 - 115	0	20
Nickel	80.0	78.2		ug/L		98	85 - 115	0	20
Lead	80.0	80.5		ug/L		101	85 - 115	0	20
Antimony	80.0	82.8		ug/L		103	85 - 115	4	20
Zinc	80.0	81.1		ug/L		101	85 - 115	3	20
Selenium	80.0	83.1		ug/L		104	85 - 115	1	20
Cobalt	80.0	78.8		ug/L		99	85 - 115	0	20
Thallium	80.0	80.5		ug/L		101	85 - 115	0	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-308085/1-A
Matrix: Water
Analysis Batch: 308437

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/01/23 14:04	03/02/23 12:27	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 570-308085/2-A
Matrix: Water
Analysis Batch: 308437

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308085

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	36.6		mg/L		92	78 - 114

Lab Sample ID: LCSD 570-308085/3-A
Matrix: Water
Analysis Batch: 308437

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308085

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	37.1		mg/L		93	78 - 114	1	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-309909/5-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:21	1

Lab Sample ID: LCS 570-309909/6-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309909

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.483		mg/L		97	90 - 110

Lab Sample ID: LCSD 570-309909/7-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309909

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.488		mg/L		98	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309199/12
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/03/23 20:26	1

Lab Sample ID: LCS 570-309199/13
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	229		ug/L		92	90 - 110

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: LCSD 570-309199/15
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	231		ug/L		92	90 - 110	1	20

Lab Sample ID: MRL 570-309199/11
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	5.41		ug/L		108	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-307852/1
Matrix: Water
Analysis Batch: 307852

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		100.6	99.0 - 101.0

Lab Sample ID: LCSSRM 570-307852/2
Matrix: Water
Analysis Batch: 307852

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-307852/3
Matrix: Water
Analysis Batch: 307852

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-310457/9
Matrix: Water
Analysis Batch: 310457

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/09/23 18:04	1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-308507/1
Matrix: Water
Analysis Batch: 308507

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/02/23 16:18	1

Lab Sample ID: LCS 570-308507/2
Matrix: Water
Analysis Batch: 308507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	944		mg/L		94	84 - 108		

Lab Sample ID: LCSD 570-308507/3
Matrix: Water
Analysis Batch: 308507

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	992		mg/L		99	84 - 108	5	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-308912/1
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/03/23 18:43	1

Lab Sample ID: LCS 570-308912/2
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	96.0		mg/L		96	77 - 116		

Lab Sample ID: LCSD 570-308912/3
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.0		mg/L		96	77 - 116	0	10

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-310352/39
Matrix: Water
Analysis Batch: 310352

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			03/08/23 23:44	1

Method: SM 5310D - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 570-310352/40
Matrix: Water
Analysis Batch: 310352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon, Total Organic	5.03	5.11		mg/L		102	85 - 115

Lab Sample ID: LCSD 570-310352/41
Matrix: Water
Analysis Batch: 310352

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic	5.03	5.07		mg/L		101	85 - 115	1	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-308018/5-A
Matrix: Water
Analysis Batch: 307873

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		02/28/23 20:15	02/28/23 22:11	1

Lab Sample ID: LCS 570-308018/6-A
Matrix: Water
Analysis Batch: 307873

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	0.500	0.524		mg/L		105	83 - 122

Lab Sample ID: LCSD 570-308018/7-A
Matrix: Water
Analysis Batch: 307873

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308018

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.500	0.537		mg/L		107	83 - 122	2	10

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-309219/2
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			02/27/23 11:01	1

Lab Sample ID: LCS 570-309219/4
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	201		mg/L		101	84.6 - 115.4

GC/MS VOA

Analysis Batch: 307594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	8260B SIM	
MB 570-307594/7	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-307594/4	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-307594/5	Lab Control Sample Dup	Total/NA	Water	8260B SIM	

Analysis Batch: 307642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	624.1	
570-129005-2	TB_20230225-1	Total/NA	Water	624.1	
MB 570-307642/6	Method Blank	Total/NA	Water	624.1	
LCS 570-307642/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-307642/4	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 307149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	625	
MB 570-307149/1-A	Method Blank	Total/NA	Water	625	
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 307279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-307149/1-A	Method Blank	Total/NA	Water	625.1 SIM	307149
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	307149
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	307149

Analysis Batch: 307608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	625.1 SIM	307149

GC VOA

Analysis Batch: 307841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	8015B	
MB 570-307841/33	Method Blank	Total/NA	Water	8015B	
LCS 570-307841/31	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-307841/32	Lab Control Sample Dup	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 308878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	3510C	
MB 570-308878/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-308878/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-308878/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA

Analysis Batch: 309032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308878/1-A	Method Blank	Total/NA	Water	8015B	308878
LCS 570-308878/2-A	Lab Control Sample	Total/NA	Water	8015B	308878
LCSD 570-308878/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	308878

Analysis Batch: 311027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	8015B	308878

HPLC/IC

Analysis Batch: 307526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	218.6	307529
570-129005-1	BGBMP0003_20230225	Total/NA	Water	218.6	
MB 570-307526/4	Method Blank	Total/NA	Water	218.6	
MB 570-307529/1-A	Method Blank	Dissolved	Water	218.6	307529
LCS 570-307526/5	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-307529/2-A	Lab Control Sample	Dissolved	Water	218.6	307529
LCSD 570-307526/6	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-307529/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	307529

Filtration Batch: 307529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	Filtration	
MB 570-307529/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-307529/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-307529/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 307534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	300.0	
MB 570-307534/5	Method Blank	Total/NA	Water	300.0	
LCS 570-307534/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307534/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 307535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	300.0	
MB 570-307535/5	Method Blank	Total/NA	Water	300.0	
LCS 570-307535/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307535/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 307808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	314.0	
MB 570-307808/7	Method Blank	Total/NA	Water	314.0	
LCS 570-307808/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-307808/9	Lab Control Sample Dup	Total/NA	Water	314.0	

HPLC/IC

Analysis Batch: 308826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	NO2NO3 Calc	

Metals

Prep Batch: 307563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total Recoverable	Water	200.7	
MB 570-307563/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-307563/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-307563/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	

Prep Batch: 307628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total Recoverable	Water	200.8	
MB 570-307628/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-307628/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-307628/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Filtration Batch: 307724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	Filtration	
MB 570-307724/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-307724/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-307724/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 307737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-307628/1-A	Method Blank	Total Recoverable	Water	200.8	307628
LCS 570-307628/2-A	Lab Control Sample	Total Recoverable	Water	200.8	307628
LCSD 570-307628/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	307628

Analysis Batch: 307880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total Recoverable	Water	200.7 Rev 4.4	307563
MB 570-307563/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	307563
LCS 570-307563/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	307563
LCSD 570-307563/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	307563

Analysis Batch: 307917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	200.7 Rev 4.4	307724
MB 570-307724/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	307724
LCS 570-307724/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	307724
LCSD 570-307724/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	307724

Analysis Batch: 307918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total Recoverable	Water	200.8	307628

Metals

Filtration Batch: 308039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	Filtration	
MB 570-308039/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 308100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	200.8	308039
MB 570-308039/1-A	Method Blank	Dissolved	Water	200.8	308039
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	200.8	308039
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	308039

General Chemistry

Analysis Batch: 307843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	SM 2540F	

Analysis Batch: 307852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	SM 2130B	
LCSSRM 570-307852/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-307852/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-307852/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 307873

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	SM 5540C	308018
MB 570-308018/5-A	Method Blank	Total/NA	Water	SM 5540C	308018
LCS 570-308018/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	308018
LCSD 570-308018/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	308018

Prep Batch: 308018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	SM 5540C	
MB 570-308018/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-308018/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-308018/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Prep Batch: 308085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	1664A	
MB 570-308085/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-308085/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-308085/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 308437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	1664A	308085
MB 570-308085/1-A	Method Blank	Total/NA	Water	1664A	308085
LCS 570-308085/2-A	Lab Control Sample	Total/NA	Water	1664A	308085

General Chemistry (Continued)

Analysis Batch: 308437 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-308085/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	308085

Analysis Batch: 308507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	SM 2540C	
MB 570-308507/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-308507/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-308507/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 308912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	SM 2540D	
MB 570-308912/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-308912/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-308912/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 309199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	Kelada 01	
MB 570-309199/12	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309199/13	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309199/15	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-309199/11	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 309200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	218.6 CR3	
570-129005-1	BGBMP0003_20230225	Total/NA	Water	218.6 CR3	

Analysis Batch: 309219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	SM5210B	
USB 570-309219/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-309219/4	Lab Control Sample	Total/NA	Water	SM5210B	

Prep Batch: 309909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	Distill/Ammonia	
MB 570-309909/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 309958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	350.1	309909
MB 570-309909/5-A	Method Blank	Total/NA	Water	350.1	309909
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	350.1	309909
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	309909

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

General Chemistry

Analysis Batch: 310352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	SM 5310D	
MB 570-310352/39	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-310352/40	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-310352/41	Lab Control Sample Dup	Total/NA	Water	SM 5310D	

Analysis Batch: 310457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	SM 2510B	
MB 570-310457/9	Method Blank	Total/NA	Water	SM 2510B	

Geotechnical

Analysis Batch: 311510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	D4464	
LCS 570-311510/6	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-311510/8	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Client Sample ID: BGBMP0003_20230225

Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	307642	02/28/23 15:20	KHF2	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	307594	02/28/23 17:36	G6NI	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			1000.2 mL	2 mL	307149	02/28/23 05:19	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	307608	02/28/23 16:13	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	307841	03/01/23 01:41	A9VE	EET CAL 4
	Instrument ID: GC73									
Total/NA	Prep	3510C			247.3 mL	2.5 mL	308878	03/03/23 17:08	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	311027	03/13/23 15:46	N5Y3	EET CAL 4
	Instrument ID: GC69A									
Dissolved	Filtration	Filtration			100 mL	100 mL	307529	02/28/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	307526	02/28/23 06:18	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	307526	02/28/23 03:18	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	307534	02/28/23 06:08	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	307535	02/28/23 06:08	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	307808	02/28/23 21:53	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			308826	03/03/23 14:06	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Dissolved	Filtration	Filtration			50 mL	50 mL	307724	02/28/23 13:46	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			307917	02/28/23 23:51	K1UV	EET CAL 4
	Instrument ID: ICP10									
Total Recoverable	Prep	200.7			50 mL	50 mL	307563	02/28/23 08:01	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			307880	02/28/23 20:17	P1R	EET CAL 4
	Instrument ID: ICP10									
Dissolved	Filtration	Filtration			50 mL	50 mL	308039	03/01/23 12:58	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			308100	03/01/23 14:33	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	307628	02/28/23 10:21	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			307918	02/28/23 14:24	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	1664A			911 mL	1000 mL	308085	03/01/23 14:04	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			308437	03/02/23 12:27	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Dissolved	Analysis	218.6 CR3		1			309200	03/06/23 11:03	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	218.6 CR3		1			309200	03/06/23 11:03	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Client Sample ID: BGBMP0003_20230225

Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	309909	03/08/23 09:40	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	309958	03/08/23 11:34	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309199	03/03/23 20:26	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			307852	02/28/23 20:55	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			310457	03/09/23 20:33	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	308507	03/02/23 16:19	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	580 mL	1000 mL	308912	03/03/23 18:43	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	307843	02/27/23 20:30	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 5310D		8	40 mL	40 mL	310352	03/09/23 03:27	UAPD	EET CAL 4
	Instrument ID: TOC12									
Total/NA	Prep	SM 5540C			100 mL	100 mL	308018	02/28/23 20:15	ZVB7	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	307873	02/28/23 22:17	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	SM5210B		1			309219	02/27/23 22:26	U7UR	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	D4464		1			311510	03/14/23 14:23	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB_20230225-1

Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	307642	02/28/23 14:58	KHF2	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

1664A = EPA-821-98-002
ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129005-1	BGBMP0003_20230225	Water	02/25/23 10:30	02/27/23 18:00
570-129005-2	TB_20230225-1	Water	02/25/23 10:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129005

570-129005 Chain of Custody

Chain of Custody Record for
...ley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
BGBMP0003_20230225	2-25-2023	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230225-1	2-25-2023	1030	TB	WM	3	N	N														x				
																									Field Readings
																									Meter Serial # EDBPJOWX
																									Time of Readings 1030
																									DO (mg/L) 20.41
																									pH 8.15
																									Temp (°C/°F) 44.9
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-25-2023 / 1110
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI ~~#4409815~~ 5701145595
Please mail data to km filer@haleyaldrich.com and post to Total Access Build H... & Aldrich a AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: H&A	Date/Time: 2-27-23 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by: EC	Date/Time: 2-27-23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2, 1.6/15 SC12

SAP COC 2019/2020 VERSION 3

3/16/2023

129005

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Work lab to Hold CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E360.2)	Priority Pollutants-Pesticides+PCBs (E608) Work lab to Hold CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC to Hold CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Work Lab to Hold CA	Chlorpyrifos, Diazinon (E625.2) Work lab to Hold CA	Asbestos (E100.2)	
								1-1L Poly	1 500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
1 BGBMP0003_20230225	2-25-2023	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3 TB_20230225-2	2-25-2023	1030	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] Months

Special Instructions/QC Requirements & Comments: ECI #~~44003916~~ 570145795
Please email data to kmiller@haleyald rich com nd post to Total Access Bill to Haley & Al rich at AP@hale aldr ch co Report Level I Dat Package and pro de EDD d ssc ved samples are to be filtered w thin 24 hours of rece pt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H.A	Date/Time: 2-27-23/1120	Receiv	2/27/23 1120 EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Receiv	EC	Date/Time: 2-27-23 18:00
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

3/16/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129005-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		02/28/23 10 18	EC			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-208625

Containers

Count	Container Type	Preservative
1	Amber Glass 1 liter - unpreserved	None
2	Plastic 2 5 Gallon	None

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s):	COC No. 570-208683 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin California	Page: Page 1 of 1
Company: EMSL Analytical Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-7
Address: 520 Mission Street,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100 2)/ Asbestos 100 2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1333				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

3/16/2023

ICOC No:
570-208683

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100 2)/ Asbestos 100 2	Level IV package needed

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No.: 570-208684 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129005-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1340				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/16/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208465.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230225-2 (570-129005-3)	2/25/23	10:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3-1-23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - T026 T027

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129005-1

Login Number: 129005
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/4/2023 12:57:36 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129005-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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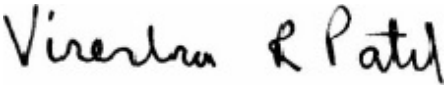
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129005-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129005-2

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.5º C and 2.2º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-2

Client Sample ID: BGBMP0003_20230225 — Lab Sample ID: 570-129005-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.020		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.017		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.020		0.00050	0.000079	ug/L			03/02/23 13:58	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.017		0.00050	0.000079	ug/L			03/02/23 15:01	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-419455/13
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:07	1

Lab Sample ID: MB 580-419455/14
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:11	1

Lab Sample ID: MB 580-419455/15
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:15	1

Lab Sample ID: LCS 580-419455/16
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00484		ug/L		97	77 - 123		

Lab Sample ID: LCSD 580-419455/17
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00474		ug/L		95	77 - 123	2	24

Lab Sample ID: 570-129005-1 MS
Matrix: Water
Analysis Batch: 419455

Client Sample ID: BGBMP0003_20230225
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.020		0.0300	0.0488		ug/L		97	71 - 125		

Lab Sample ID: 570-129005-1 MSD
Matrix: Water
Analysis Batch: 419455

Client Sample ID: BGBMP0003_20230225
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.020		0.0300	0.0475		ug/L		92	71 - 125	3	24

Lab Sample ID: MB 580-419236/1-A
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 16:08	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-2

Metals

Filtration Batch: 419236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	Filtration	
MB 580-419236/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 419455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	1631E	419236
570-129005-1	BGBMP0003_20230225	Total/NA	Water	1631E	
MB 580-419236/1-A	Method Blank	Dissolved	Water	1631E	419236
MB 580-419455/13	Method Blank	Total/NA	Water	1631E	
MB 580-419455/14	Method Blank	Total/NA	Water	1631E	
MB 580-419455/15	Method Blank	Total/NA	Water	1631E	
LCS 580-419455/16	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-419455/17	Lab Control Sample Dup	Total/NA	Water	1631E	
570-129005-1 MS	BGBMP0003_20230225	Total/NA	Water	1631E	
570-129005-1 MSD	BGBMP0003_20230225	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-2

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	419236	03/01/23 13:20	DRM	EET SEA
Dissolved	Analysis	1631E		1			419455	03/02/23 15:01	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			419455	03/02/23 13:58	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129005-2
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129005-1	BGBMP0003_20230225	Water	02/25/23 10:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129005

570-129005 Chain of Custody

Chain of Custody Record for
ley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
BGBMP0003_20230225	2-25-2023	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230225-1	2-25-2023	1030	TB	WM	3	N	N														x				
																									Field Readings
																									Meter Serial # EDBPJOWX
																									Time of Readings 1030
																									DO (mg/L) 20.41
																									pH 8.15
																									Temp (°C/°F) 44.9
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-25-2023 / 1110
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI ~~#4409815~~ 5701145595
Please mail data to km iller@haleyaldrich.com and post to Total Access Bill to Ha & Aldrich a AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: H&A	Date/Time: 2-27-23 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by: EC	Date/Time: 2-27-23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2, 1.6/15 SC12

SAP COC 2019/2020 VERSION 3

129005

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Work lab to Hold CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Work lab to Hold CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC to be sub-cont	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Work Lab to Hold CA	Chlorpyrifos, Diazinon (E625.2) Work lab to Hold CA	Asbestos (E100.2)	
								1-1L Poly	1 500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
1 BGBMP0003_20230225	2-25-2023	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3 TB_20230225-2	2-25-2023	1030	TB	WM	3	N	N				X															

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____

								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] Months

Special Instructions/QC Requirements & Comments: ECI #~~44003916~~ 570145795
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level I Data Package and provide EDD Dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.					
Relinquished by:	Company: H.A	Date/Time: 2-27-23/1120	Receiv	2/27/23	1120	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Receiv	EC		Date/Time: 2-27-23 18:00
Relinquished by:	Company:	Date/Time:	Receiv			Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

3/4/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129005-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved		Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X		3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	02/28/23 1018	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-208625

Containers

Count	Container Type	Preservative
1	Amber Glass 1 liter - unpreserved	None
2	Plastic 2 5 Gallon	None

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s):	COC No. 570-208683 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin California	Page: Page 1 of 1
Company: EMSL Analytical Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-7
Address: 520 Mission Street,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100 2)/ Asbestos 100 2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 2/28/23 1333	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

3/4/2023

ICOC No:
570-208683

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100 2)/ Asbestos 100 2	Level IV package needed

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No.: 570-208684 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129005-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1340				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/4/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208465.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230225-2 (570-129005-3)	2/25/23	10:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3-1-23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - TD26 TD278

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208684.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129005-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:	Project #: 57014595			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements: 6325 8453 6947

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 2/28/23 1340	Company	Received by:	Date/Time: 3.1.23 9:45	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.: NA	Cooler Temperature(s) °C and Other Remarks: -0.1 D2 C1

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129005-2

Login Number: 129005
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129005-2

Login Number: 129005
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/01/23 01:18 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129005-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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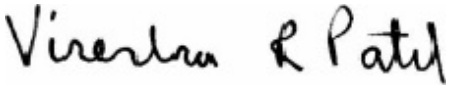
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/11/2023 12:42:08 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129005-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129005-3

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.5º C and 2.2º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-3

Method	Method Description	Protocol	Laboratory
Subcontract	Quant-Tray - E. Coli - level 4 required	None	Enthalpy

Protocol References:

None = None

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129005-1	BGBMP0003_20230225	Water	02/25/23 10:30	02/27/23 18:00

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 480480
Report Level: IV
Report Date: 03/08/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Location: Boeing SSFL ISRA and BMP - Project #57014595

Authorized for release by:

Quynhgiao Le

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Lab Job #: 480480
Location: Boeing SSFL ISRA and BMP - Project #57014595
Date Received: 02/27/23

Sample ID	Lab ID	Collected	Matrix
BGMP0003_20230225 (570-129005-1)	480480-001	02/25/23 10:30	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	480480
	Location:	Boeing SSFL ISRA and BMP - Project #57014595
	Date Received:	02/27/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 02/27/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

480480

Chain of Custody Record

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

eurofins
Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208463.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-129005-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 3/10/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X		X	
BGMP00003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 2-27-23 1721	Company: EA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: ▲ Yes ▲ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins

Project: Boeing SSFL ISRA and BMP

Date Received: 2/27/23

Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: _____ #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: _____ #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?		✓	
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✓
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?	✓		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Client Was given wrong Pinted COC , We have orginal and also sample just no Relinquished Signature

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 2-27-23

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 480480 **Project#:** STANDARD

Client: Eurofins Calscience Tustin **Location:** Boeing SSFL ISRA and BMP - Project...

Field ID:	BGMP0003_20230225 (570-129005-1)	**Batch#:**	308595	**Analyzed:**	02/28/23 14:42
Lab ID:	480480-001	**Sampled:**	02/25/23 10:30	**Prep:**	
Matrix:	Water	**Received:**	02/27/23	**Analysis:**	SM 9223Bb
DiIn Fac:	1.000	**Prepared:**	02/27/23 18:19	**Analyst:**	VLC

480480-001 Analyte	Result	RL	Units	Qual
Coliform, E. Coli	**55**	1.0	MPN/100ml	H

Legend

H: Holding time was exceeded

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: JA Prep Date/Time: 2/27/23 1819 QC Batch ID: 309595 Batch Page 1 of 1

Read Analyst: VC Read Date/Time 2/28/23 1442

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: FV330 Pipette Lot #: A104222

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 2/1/23 Bottle Lot #: DV006V Comparator Lot #: A0148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 1040 35.1 Incubator Out, Temp/Time: 35.2°C 1441

Fecal Coliform: Water Bath ID: NA Water Bath In, Temp/Time: NA Water Bath Out, Temp/Time: NA

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		480480-001	1X	48	48	1611.2	1000	30	7	55.4	55					EC-01
		↓ ↓	10X	49	29	579.4	5800	7	0	7.5	75					↓ 10X
		↓ ↓	100X	33	3	56.5	5600	1	0	1.0	100					↓ 100X
		480481-001	1X	49	48	>2419.6	72400	48	16	228.2	230					EP-01
		↓ ↓	10X	49	42	1299.7	13,000	13	0	14.0	150					↓ 10X
		↓ ↓	100X	45	11	89.6	14,000	1	0	1.0	100					↓ 100X
Page 16 of 26		480482-001	1X	49	48	>2419.6	>2400	27	3	42.0	42					EU-01
		↓ ↓	10X	49	32	686.7	6900	7	0	7.5	75					↓ 10X
		↓ ↓	100X	32	5	57.3	5700	0	0	<1	<100					↓ 100X
		480483-001	1X	49	48	>2419.6	>2400	27	7	48.1	48					CA-01
		↓ ↓	10X	49	34	770.1	7700	4	0	4.1	41					↓ 10X
		↓ ↓	100X	39	10	93.4	9,300	1	8	1.0	100					↓ 100X
								JA	3/5/23							ok to run past hold
Quality Control		**Culture ID**														per PM 3/2/23
Positive +/+ (E. Coli)		2/26/23		49	48	>2419.6	>2400	49	48	>2419.6	>2400					
Positive +/- (K. Pneumonia)		↓		49 JA 3/5/23	48 JA 3/5/23	>2419.6	>2400	0	0	<1	<1					
Negative -/- (P. Aeruginosa)		↓		0	0	<1	<1	0	0	<1	<1					

Data Entered By: 3/5/23 Data Reviewed By:

Enthalpy Analytical, Orange, Logbook # BK1064

SM 9223B-b, Quanti-tray, Rev 4, 11/25/2022

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129005

570-129005 Chain of Custody

Chain of Custody Record for
...ley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-In Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number: 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
BGBMP0003_20230225	2-25-2023	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230225-1	2-25-2023	1030	TB	WM	3	N	N														x				
																									Field Readings
																									Meter Serial #: EDBPJOWX
																									Time of Readings: 1030
																									DO (mg/L): 20.41
																									pH: 8.15
																									Temp (°C/°F): 44.9
																									TRC (mg/L): 0.00
																									Checked by:
																									Date/Time: 2-25-2023 / 1110
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI ~~#4409815~~ 5701145595
Please mail data to km filer@haleyaldrich.com and post to Total Access Build to H& Aldrich a AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: H&A	Date/Time: 2-27-23 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by: EC	Date/Time: 2-27-23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2, 1.6/15 SC12

SAP COC 2019/2020 VERSION 3

4/11/2023

129005

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Walk-in Client Lab Sampling	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E360.2)	Priority Pollutants-Pesticides+PCBs (E608) Walk-in Client Lab Sampling	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Batch Sample	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DW-WC-0077) Walk-in Client Lab Sampling	Chlorpyrifos, Diazinon (E625.2) Walk-in Client Lab Sampling	Asbestos (E100.2)	
								1-1L Poly	1 500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
1 BGBMP0003_20230225	2-25-2023	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3 TB_20230225-2	2-25-2023	1030	TB	WM	3	N	N				X															

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____

								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] Months

Special Instructions/QC Requirements & Comments: ECI #~~44003916~~ 570145795
Please email data to kmiller@haleyald rich com nd post to Total Access Bill to Haley & Al rich at AP@hale aldr ch co Report Level I Dat Package and pro de EDD d ssc ved samples are to be filtered w thin 24 hours of rece pt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H.A	Date/Time: 2-27-23/1120	Receiv	2/27/23 EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Receiv	EC	Date/Time: 2-27-23 18:00
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

4/11/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129005-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved		Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X		3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	02/28/23 1018	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-208625

Containers

Count	Container Type	Preservative
1	Amber Glass 1 liter - unpreserved	None
2	Plastic 2 5 Gallon	None

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s):	COC No. 570-208683 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin California	Page: Page 1 of 1
Company: EMSL Analytical Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-7
Address: 520 Mission Street,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes

A HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100 2)/ Asbestos 100 2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 2/28/23 1333	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208683

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100 2)/ Asbestos 100 2	Level IV package needed

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No.: 570-208684 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129005-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1340				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208465.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230225-2 (570-129005-3)	2/25/23	10:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 3-1-2023 15:40	Company EC	Received by:	Date/Time: 3-1-23 15:40	Company Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - 7026 7027

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129005-3

Login Number: 129005
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129005-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

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Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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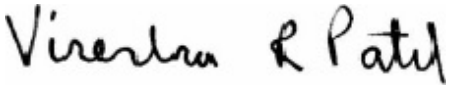

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Authorized for release by
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-4

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129005-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129005-4

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.5º C and 2.2º C.

Receipt Exceptions

The following sample was received outside of holding time for 300.0 NO2, NO3, Chromium VI 218.6, Settleable Solids SM2540F, BOD SM5210B, MBAS SM5540C, TurbiditySM2540C: BGBMP0003_20230225 (570-129005-1).

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: BGBMP0003_20230225 (570-129005-1), (CCV 320-661962/17), (LCS 320-658956/2-A), (LCSD 320-658956/3-A) and (MB 320-658956/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-4

Client Sample ID: BGBMP0003_20230225

Lab Sample ID: 570-129005-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000013	J,DX	0.000049	0.000000059	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000014	J,DX q MB	0.000049	0.000000023	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000010	J,DX q MB	0.000049	0.000000027	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000040	J,DX MB	0.000049	0.000000054	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000022	J,DX MB	0.000049	0.000000052	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000022	J,DX q MB	0.000049	0.000000049	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000023	J,DX MB	0.000049	0.000000094	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000023	J,DX MB	0.000049	0.000000092	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000020	J,DX q MB	0.000049	0.000000087	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000024	J,DX MB	0.000049	0.000000078	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000042	J,DX MB	0.000049	0.000000041	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000039	J,DX MB	0.000049	0.00000014	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000031	J,DX MB	0.000049	0.00000015	ug/L	1		1613B	Total/NA
OCDD	0.000026	J,DX MB	0.000098	0.00000023	ug/L	1		1613B	Total/NA
OCDF	0.0000081	J,DX MB	0.000098	0.000000082	ug/L	1		1613B	Total/NA
Total PeCDD	0.0000013	J,DX	0.000049	0.000000059	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000025	J,DX q MB	0.000049	0.000000023	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000083	J,DX q MB	0.000049	0.000000049	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000090	J,DX q MB	0.000049	0.000000078	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000061	J,DX MB	0.000049	0.000000041	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000070	J,DX MB	0.000049	0.00000014	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: BGBMP0003W20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 1y:00

Lab Sample ID: 570-129005-1
Matrix: _ ater

Analzte	Result	f uali.ier	RL	EDL	Qnit	D	Prepared	AnalzUed	Dil Fac
2,3,7,8-TCDD	ND		0.0000098	0.00000048	ug/L		03/08/23 04:28	03/20/23 07:34	1
2,3,7,8-TCDF	ND		0.0000098	0.00000094	ug/L		03/08/23 04:28	03/20/23 07:34	1
1,2,3,7,y-PeCDD	**040000013**	**J,DX**	0.000049	0.00000059	ug/L		03/08/23 04:28	03/20/23 07:34	1
1,2,3,7,y-PeCDF	**040000018**	**J,DX q MB**	0.000049	0.00000023	ug/L		03/08/23 04:28	03/20/23 07:34	1
2,3,8,7,y-PeCDF	**040000010**	**J,DX q MB**	0.000049	0.00000027	ug/L		03/08/23 04:28	03/20/23 07:34	1
1,2,3,8,7,y-HxCDD	**040000080**	**J,DX MB**	0.000049	0.00000054	ug/L		03/08/23 04:28	03/20/23 07:34	1
1,2,3,6,7,y-HxCDD	**040000022**	**J,DX MB**	0.000049	0.00000052	ug/L		03/08/23 04:28	03/20/23 07:34	1
1,2,3,7,y,9-HxCDD	**040000022**	**J,DX q MB**	0.000049	0.00000049	ug/L		03/08/23 04:28	03/20/23 07:34	1
1,2,3,8,7,y-HxCDF	**040000023**	**J,DX MB**	0.000049	0.00000094	ug/L		03/08/23 04:28	03/20/23 07:34	1
1,2,3,6,7,y-HxCDF	**040000023**	**J,DX MB**	0.000049	0.00000092	ug/L		03/08/23 04:28	03/20/23 07:34	1
1,2,3,7,y,9-HxCDF	**040000020**	**J,DX q MB**	0.000049	0.00000087	ug/L		03/08/23 04:28	03/20/23 07:34	1
2,3,8,6,7,y-HxCDF	**040000028**	**J,DX MB**	0.000049	0.00000078	ug/L		03/08/23 04:28	03/20/23 07:34	1
1,2,3,8,6,7,y-HpCDD	**040000082**	**J,DX MB**	0.000049	0.00000041	ug/L		03/08/23 04:28	03/20/23 07:34	1
1,2,3,8,6,7,y-HpCDF	**040000039**	**J,DX MB**	0.000049	0.0000001 4	ug/L		03/08/23 04:28	03/20/23 07:34	1
1,2,3,8,7,y,9-HpCDF	**040000031**	**J,DX MB**	0.000049	0.0000001 5	ug/L		03/08/23 04:28	03/20/23 07:34	1
OCDD	**04000026**	**J,DX MB**	0.000098	0.0000002 3	ug/L		03/08/23 04:28	03/20/23 07:34	1
OCDF	**040000y1**	**J,DX MB**	0.000098	0.00000082	ug/L		03/08/23 04:28	03/20/23 07:34	1
Total TCDD	ND		0.0000098	0.00000048	ug/L		03/08/23 04:28	03/20/23 07:34	1
Total TCDF	ND		0.0000098	0.00000094	ug/L		03/08/23 04:28	03/20/23 07:34	1
Total PeCDD	**040000013**	**J,DX**	0.000049	0.00000059	ug/L		03/08/23 04:28	03/20/23 07:34	1
Total PeCDF	**040000025**	**J,DX q MB**	0.000049	0.00000023	ug/L		03/08/23 04:28	03/20/23 07:34	1
Total HxCDD	**040000y3**	**J,DX q MB**	0.000049	0.00000049	ug/L		03/08/23 04:28	03/20/23 07:34	1
Total HxCDF	**040000090**	**J,DX q MB**	0.000049	0.00000078	ug/L		03/08/23 04:28	03/20/23 07:34	1
Total HpCDD	**040000061**	**J,DX MB**	0.000049	0.00000041	ug/L		03/08/23 04:28	03/20/23 07:34	1
Total HpCDF	**040000070**	**J,DX MB**	0.000049	0.0000001 4	ug/L		03/08/23 04:28	03/20/23 07:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*73*		*20 - 156*	*43/48/23 46:28*	*43/24/23 47:36*	*1*
13C-2,3,7,8-TCDF	*56*		*26 - 159*	*43/48/23 46:28*	*43/24/23 47:36*	*1*
13C-1,2,3,7,8-PeCDD	*81*		*20 - 181*	*43/48/23 46:28*	*43/24/23 47:36*	*1*
13C-1,2,3,7,8-PeCDF	*71*		*26 - 180*	*43/48/23 46:28*	*43/24/23 47:36*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: BGBMP0003W20230225
Lab Sample ID: 570-129005-1
Date Collected: 02/25/23 10:30
Matrix: _ ater
Date Received: 02/27/23 1y:00

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,6,7,8-PeCDF	55		21 - 178	43/48/23 46:28	43/24/23 47:36	1
13C-1,2,3,6,7,8-HxCDD	71		32 - 161	43/48/23 46:28	43/24/23 47:36	1
13C-1,2,3,5,7,8-HxCDD	72		28 - 134	43/48/23 46:28	43/24/23 47:36	1
13C-1,2,3,6,7,8-HxCDF	56		25 - 102	43/48/23 46:28	43/24/23 47:36	1
13C-1,2,3,5,7,8-HxCDF	57		25 - 123	43/48/23 46:28	43/24/23 47:36	1
13C-1,2,3,7,8,9-HxCDF	74		29 - 167	43/48/23 46:28	43/24/23 47:36	1
13C-2,3,6,5,7,8-HxCDF	71		28 - 135	43/48/23 46:28	43/24/23 47:36	1
13C-1,2,3,6,5,7,8-HpCDD	76		23 - 164	43/48/23 46:28	43/24/23 47:36	1
13C-1,2,3,6,5,7,8-HpCDF	09		28 - 163	43/48/23 46:28	43/24/23 47:36	1
13C-1,2,3,6,7,8,9-HpCDF	55		25 - 138	43/48/23 46:28	43/24/23 47:36	1
13C-OCDD	07		17 - 107	43/48/23 46:28	43/24/23 47:36	1
13C-OCDF	05		17 - 107	43/48/23 46:28	43/24/23 47:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	94		30 - 197	43/48/23 46:28	43/24/23 47:36	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-129005-1	BGBMP0003_20230225	90
MB 320-658956/1-A	Method Blank	89

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-658956/2-A	Lab Control Sample	91
LCSD 320-658956/3-A	Lab Control Sample Dup	89

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-129005-1	BGBMP0003_20230225	73	64	81	71	66	71	72	64
MB 320-658956/1-A	Method Blank	77	68	83	73	72	79	77	71

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-129005-1	BGBMP0003_20230225	67	70	71	74	59	66	57	56
MB 320-658956/1-A	Method Blank	72	71	71	80	64	73	66	62

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-658956/2-A	Lab Control Sample	72	64	78	72	69	71	73	66
LCSD 320-658956/3-A	Lab Control Sample Dup	75	67	83	75	70	72	74	68

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-658956/2-A	Lab Control Sample	66	67	70	75	61	65	59	56
LCSD 320-658956/3-A	Lab Control Sample Dup	68	70	71	82	64	71	67	63

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129005-4
Project/Site: Boeing SSFL ISRA and BMP

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-658956/1-A
Matrix: Water
Analysis Batch: 661962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 658956

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000005u	6g/L		03/08/23 09:28	03/20/23 09:21	1
2,3,7,8-TCDF	ND		0.000010	0.00000040	6g/L		03/08/23 09:28	03/20/23 09:21	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000094	6g/L		03/08/23 09:28	03/20/23 09:21	1
1,2,3,7,8-PeCDF	0.00000130	J,DX	0.000050	0.0000009u	6g/L		03/08/23 09:28	03/20/23 09:21	1
2,3,9,7,8-PeCDF	0.000000770	J,DX q	0.000050	0.00000051	6g/L		03/08/23 09:28	03/20/23 09:21	1
1,2,3,9,7,8-HxCDD	0.00000272	J,DX	0.000050	0.00000070	6g/L		03/08/23 09:28	03/20/23 09:21	1
1,2,3,u,7,8-HxCDD	0.00000148	J,DX	0.000050	0.00000079	6g/L		03/08/23 09:28	03/20/23 09:21	1
1,2,3,7,8,4-HxCDD	0.00000135	J,DX	0.000050	0.0000000uu	6g/L		03/08/23 09:28	03/20/23 09:21	1
1,2,3,9,7,8-HxCDF	0.00000152	J,DX	0.000050	0.0000000u4	6g/L		03/08/23 09:28	03/20/23 09:21	1
1,2,3,u,7,8-HxCDF	0.000001u7	J,DX q	0.000050	0.00000070	6g/L		03/08/23 09:28	03/20/23 09:21	1
1,2,3,7,8,4-HxCDF	0.00000177	J,DX	0.000050	0.00000070	6g/L		03/08/23 09:28	03/20/23 09:21	1
2,3,9,u,7,8-HxCDF	0.00000150	J,DX	0.000050	0.0000000u7	6g/L		03/08/23 09:28	03/20/23 09:21	1
1,2,3,9,u,7,8-HpCDD	0.00000398	J,DX	0.000050	0.00000039	6g/L		03/08/23 09:28	03/20/23 09:21	1
1,2,3,9,u,7,8-HpCDF	0.000002u7	J,DX	0.000050	0.0000000u8u	6g/L		03/08/23 09:28	03/20/23 09:21	1
1,2,3,9,7,8,4-HpCDF	0.00000210	J,DX q	0.000050	0.0000000u8u	6g/L		03/08/23 09:28	03/20/23 09:21	1
OCDD	0.0000205	J,DX q	0.00010	0.00000014	6g/L		03/08/23 09:28	03/20/23 09:21	1
OCDF	0.00000u22	J,DX	0.00010	0.0000001u	6g/L		03/08/23 09:28	03/20/23 09:21	1
Total TCDD	ND		0.000010	0.00000005u	6g/L		03/08/23 09:28	03/20/23 09:21	1
Total TCDF	ND		0.000010	0.00000040	6g/L		03/08/23 09:28	03/20/23 09:21	1
Total PeCDD	ND		0.000050	0.00000094	6g/L		03/08/23 09:28	03/20/23 09:21	1
Total PeCDF	0.00000207	J,DX q	0.000050	0.0000009u	6g/L		03/08/23 09:28	03/20/23 09:21	1
Total HxCDD	0.00000u09	J,DX	0.000050	0.0000000uu	6g/L		03/08/23 09:28	03/20/23 09:21	1
Total HxCDF	0.00000u97	J,DX q	0.000050	0.0000000u7	6g/L		03/08/23 09:28	03/20/23 09:21	1
Total HpCDD	0.000005u1	J,DX	0.000050	0.00000039	6g/L		03/08/23 09:28	03/20/23 09:21	1
Total HpCDF	0.00000977	J,DX q	0.000050	0.0000000u8u	6g/L		03/08/23 09:28	03/20/23 09:21	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*20 - 156*	*43/48/23 46:28*	*43/24/23 46:21*	*1*
13C-2,3,7,8-TCDF	*58*		*26 - 159*	*43/48/23 46:28*	*43/24/23 46:21*	*1*
13C-1,2,3,7,8-PeCDD	*83*		*20 - 181*	*43/48/23 46:28*	*43/24/23 46:21*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-658956/1-A
Matrix: Water
Analysis Batch: 661962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 658956

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	73		26 - 180	43/48/23 46:28	43/24/23 46:21	1
13C-2,3,6,7,8-PeCDF	72		21 - 178	43/48/23 46:28	43/24/23 46:21	1
13C-1,2,3,6,7,8-HxCDD	79		32 - 161	43/48/23 46:28	43/24/23 46:21	1
13C-1,2,3,5,7,8-HxCDD	77		28 - 134	43/48/23 46:28	43/24/23 46:21	1
13C-1,2,3,6,7,8-HxCDF	71		25 - 102	43/48/23 46:28	43/24/23 46:21	1
13C-1,2,3,5,7,8-HxCDF	72		25 - 123	43/48/23 46:28	43/24/23 46:21	1
13C-1,2,3,7,8,9-HxCDF	71		29 - 167	43/48/23 46:28	43/24/23 46:21	1
13C-2,3,6,5,7,8-HxCDF	71		28 - 135	43/48/23 46:28	43/24/23 46:21	1
13C-1,2,3,6,5,7,8-HpCDD	84		23 - 164	43/48/23 46:28	43/24/23 46:21	1
13C-1,2,3,6,5,7,8-HpCDF	56		28 - 163	43/48/23 46:28	43/24/23 46:21	1
13C-1,2,3,6,7,8,9-HpCDF	73		25 - 138	43/48/23 46:28	43/24/23 46:21	1
13C-OCDD	55		17 - 107	43/48/23 46:28	43/24/23 46:21	1
13C-OCDF	52		17 - 107	43/48/23 46:28	43/24/23 46:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	89		30 - 197	43/48/23 46:28	43/24/23 46:21	1

Lab Sample ID: LCS 320-658956/2-A
Matrix: Water
Analysis Batch: 661962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 658956

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000178		6g/L		84	u7 - 158		
2,3,7,8-TCDF			0.000200	0.000141		6g/L		45	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000899		6g/L		89	70 - 192		
1,2,3,7,8-PeCDF			0.00100	0.000820		6g/L		82	80 - 139		
2,3,9,7,8-PeCDF			0.00100	0.000825		6g/L		83	u8 - 1u0		
1,2,3,9,7,8-HxCDD			0.00100	0.000833		6g/L		83	70 - 1u9		
1,2,3,u,7,8-HxCDD			0.00100	0.000898		6g/L		85	7u - 139		
1,2,3,7,8,4-HxCDD			0.00100	0.000898		6g/L		85	u9 - 1u2		
1,2,3,9,7,8-HxCDF			0.00100	0.0008u8		6g/L		87	72 - 139		
1,2,3,u,7,8-HxCDF			0.00100	0.0008u3		6g/L		8u	89 - 130		
1,2,3,7,8,4-HxCDF			0.00100	0.0008u0		6g/L		8u	78 - 130		
2,3,9,u,7,8-HxCDF			0.00100	0.000852		6g/L		85	70 - 15u		
1,2,3,9,u,7,8-HpCDD			0.00100	0.0007u4		6g/L		77	70 - 190		
1,2,3,9,u,7,8-HpCDF			0.00100	0.000898		6g/L		85	82 - 122		
1,2,3,9,7,8,4-HpCDF			0.00100	0.000892		6g/L		89	78 - 138		
OCDD			0.00200	0.00170		6g/L		85	78 - 199		
OCDF			0.00200	0.00178		6g/L		84	u3 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	72		24 - 170
13C-2,3,7,8-TCDF	56		22 - 102
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	72		21 - 192
13C-2,3,6,7,8-PeCDF	59		13 - 328
13C-1,2,3,6,7,8-HxCDD	71		21 - 193
13C-1,2,3,5,7,8-HxCDD	73		20 - 153

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-658956/2-A
Matrix: Water
Analysis Batch: 661962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 658956

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	55		19 - 242
13C-1,2,3,5,7,8-HxCDF	55		21 - 109
13C-1,2,3,7,8,9-HxCDF	57		17 - 240
13C-2,3,6,5,7,8-HxCDF	74		22 - 175
13C-1,2,3,6,5,7,8-HpCDD	70		25 - 155
13C-1,2,3,6,5,7,8-HpCDF	51		21 - 108
13C-1,2,3,6,7,8,9-HpCDF	50		24 - 185
13C-OCDD	09		13 - 199
13C-OCDF	05		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl6-2,3,7,8-TCDD	91		31 - 191

Lab Sample ID: LCSD 320-658956/3-A
Matrix: Water
Analysis Batch: 661962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 658956

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000182		6g/L		41	u7 - 158	2	50
2,3,7,8-TCDF			0.000200	0.000200		6g/L		100	75 - 158	5	50
1,2,3,7,8-PeCDD			0.00100	0.000881		6g/L		88	70 - 192	9	50
1,2,3,7,8-PeCDF			0.00100	0.000850		6g/L		85	80 - 139	9	50
2,3,9,7,8-PeCDF			0.00100	0.000871		6g/L		87	u8 - 1u0	5	50
1,2,3,9,7,8-HxCDD			0.00100	0.000851		6g/L		85	70 - 1u9	2	50
1,2,3,u,7,8-HxCDD			0.00100	0.00087u		6g/L		88	7u - 139	3	50
1,2,3,7,8,4-HxCDD			0.00100	0.00040u		6g/L		41	u9 - 1u2	7	50
1,2,3,9,7,8-HxCDF			0.00100	0.000889		6g/L		88	72 - 139	2	50
1,2,3,u,7,8-HxCDF			0.00100	0.000409		6g/L		40	89 - 130	5	50
1,2,3,7,8,4-HxCDF			0.00100	0.000847		6g/L		40	78 - 130	9	50
2,3,9,u,7,8-HxCDF			0.00100	0.00040u		6g/L		41	70 - 15u	u	50
1,2,3,9,u,7,8-HpCDD			0.00100	0.000819		6g/L		81	70 - 190	u	50
1,2,3,9,u,7,8-HpCDF			0.00100	0.000410		6g/L		41	82 - 122	7	50
1,2,3,9,7,8,4-HpCDF			0.00100	0.00087u		6g/L		88	78 - 138	9	50
OCDD			0.00200	0.00178		6g/L		84	78 - 199	9	50
OCDF			0.00200	0.00187		6g/L		49	u3 - 170	5	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	70		24 - 170
13C-2,3,7,8-TCDF	57		22 - 102
13C-1,2,3,7,8-PeCDD	83		21 - 227
13C-1,2,3,7,8-PeCDF	70		21 - 192
13C-2,3,6,7,8-PeCDF	74		13 - 328
13C-1,2,3,6,7,8-HxCDD	72		21 - 193
13C-1,2,3,5,7,8-HxCDD	76		20 - 153
13C-1,2,3,6,7,8-HxCDF	58		19 - 242
13C-1,2,3,5,7,8-HxCDF	58		21 - 109
13C-1,2,3,7,8,9-HxCDF	74		17 - 240
13C-2,3,6,5,7,8-HxCDF	71		22 - 175

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-658956/3-A
Matrix: Water
Analysis Batch: 661962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 658956

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,6,5,7,8-HpCDD	82		25 - 155
13C-1,2,3,6,5,7,8-HpCDF	56		21 - 108
13C-1,2,3,6,7,8,9-HpCDF	71		24 - 185
13C-OCDD	57		13 - 199
13C-OCDF	53		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl6-2,3,7,8-TCDD	89		31 - 191

Client: Haley & Aldrich, Inc.
Job ID: 570-129005-4
Project/Site: Boeing SSFL ISRA and BMP

Specialty Organics

Prep Batch: 658956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	1613B	
MB 320-658956/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-658956/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-658956/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 661962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	1613B	658956
MB 320-658956/1-A	Method Blank	Total/NA	Water	1613B	658956
LCS 320-658956/2-A	Lab Control Sample	Total/NA	Water	1613B	658956
LCSD 320-658956/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	658956

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-123005-9
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: BGBMP0003_20230225
Lab Sample ID: 570-129005-1
Date Collected: 02/25/23 10:30
Matrix: Water
Date Received: 02/27/23 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Nbtal/8 A	Prep	161EB			1025.5 mL	20.0 uL	65T356	0E/0T/2E 09:2T	FC	44N SAC
Nbtal/8 A	Analysis	161EB		1	1 Sample	1 Sample	661362	0E/20/2E 07:E9	GRB	44N SAC
	Instrument ID: DFS 1									

Laboratory References:

44N SAC = 4urofins Sacramento, TT0 Riverside Parkway, West Sacramento, CA 35605, N4L (316)E7E-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-4

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-23 *
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-4

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129005-1	BGBMP0003_20230225	Water	02/25/23 10:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129005

570-129005 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
BGBMP0003_20230225	2-25-2023	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230225-1	2-25-2023	1030	TB	WM	3	N	N														x				
																									Field Readings
																									Meter Serial #: EDBPJOUX
																									Time of Readings: 1030
																									DO (mg/L): 20.41
																									pH: 8.15
																									Temp (°C/°F): 44.9
																									TRC (mg/L): 0.00
																									Checked by:
																									Date/Time: 2-25-2023 / 1110
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI ~~#4400009815~~ 5701145595
Please mail data to km filer@haleyaldrich.com and post to Total Access Build Haley & Aldrich AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by: EC	Date/Time: 2-27-23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2, 1.6/15 SC12

SAP COC 2019/2020 VERSION 3

3/20/2023

129005

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624)	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608)	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013)	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077)	Chlorpyrifos, Diazinon (E525.2)	Asbestos (E100.2)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
									1-1L Poly	1 500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
1	BGBMP0003_20230225	2-25-2023	1030	G	WM	35	Y	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
3	TB_20230225-2	2-25-2023	1030	TB	WM	3	N	N				X															
	Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ ~~Return to Client~~ 6 Months

Special Instructions/QC Requirements & Comments: ECI ~~#44003915~~ 57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level I Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.			
Relinquished by: [signature]	Company: H.A	Date/Time: 2-27-23/1120	Receiv [signature] 2/27/23 1120 EC	Date/Time: 2/27/23 1120
Relinquished by: [signature]	Company: EC	Date/Time: 2/27/23 1800	Receiv [signature] EC	Date/Time: 2-27-23 18:00
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

3/20/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129005-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fil_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved		Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X		3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		02/28/23 10 18	EC			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-208625

Containers

Count	Container Type	Preservative
1	Amber Glass 1 liter - unpreserved	None
2	Plastic 2 5 Gallon	None

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s):	COC No. 570-208683 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin California	Page: Page 1 of 1
Company: EMSL Analytical Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-7
Address: 520 Mission Street,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes

A HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100 2)/ Asbestos 100 2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 2/28/23 1333	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208683

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100 2)/ Asbestos 100 2	Level IV package needed

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No.: 570-208684 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129005-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1340				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/20/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208465.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230225-2 (570-129005-3)	2/25/23	10:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time:	Company		Date/Time:	Company
Relinquished by:	3-1-23 15:40	EC	Received by:	3-1-23 15:40	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - 7026 7027

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208633.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129005-4
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		02/28/23 11:09	EC		3.1.23 920	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.4c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129005-4

Login Number: 129005
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129005-4

Login Number: 129005
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/01/23 01:40 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.4c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/27/2023 10:13:24 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129005-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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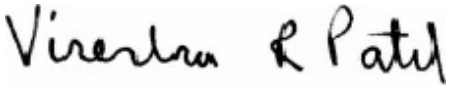
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/27/2023 10:13:24 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129005-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129005-5

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.5º C and 2.2º C.

Receipt Exceptions

The following sample was received outside of holding time for 300.0 NO2, NO3, Chromium VI 218.6, Settleable Solids SM2540F, BOD SM5210B, MBAS SM5540C, TurbiditySM2540C: BGBMP0003_20230225 (570-129005-1).

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods EPA 608 - Pesticides/PCBs - PP list, VOCs- 2-CVE only (E624), Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-5

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs- 2-CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129005-1	BGBMP0003_20230225	Water	02/25/23 10:30	02/27/23 18:00
570-129005-3	TB_20230225-2	Water	02/25/23 10:30	02/27/23 18:00

Work Orders:	3C06015	**Report Date:**	4/24/2023
		Received Date:	3/1/2023
Project:	570-129005-5	**Turnaround Time:**	Normal
		Phones:	(949) 261-1022
		Fax:	(949) 260-3297
Attn:	Virendra Patel	**P.O. #:**	
Client:	Eurofins Calscience - Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	**Billing Code:**	

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/01/23 with the Chain-of-Custody document. The samples were received in good condition, at 4.1 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: BGMP003_20230225 (570-129005-1) — Sampled: 02/25/23 10:30 by Client

3C06015-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 525.2M			**Instr:** GCMS13				
Batch ID: W3C0830 **Preparation:** EPA 525.2/SPE			**Prepared:** 03/09/23 09:07				**Analyst:** EFC
Chlorpyrifos	ND	0.0040	0.010	ug/l	1	03/11/23	
Diazinon	ND	0.0034	0.010	ug/l	1	03/11/23	
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*82%*		*50-141*	*Conc: 0.410*		*03/11/23*	
Triphenyl phosphate	*94%*		*63-200*	*Conc: 0.472*		*03/11/23*	
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C0821 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/09/23 08:27				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.050	ug/l	1	03/28/23	O-05
Surrogate(s)							
Decachlorobiphenyl	*63%*		*33-133*	*Conc: 0.0623*		*03/28/23*	
Tetrachloro-meta-xylene	*63%*		*32-130*	*Conc: 0.0622*		*03/28/23*	
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C0490 **Preparation:** EPA 5030B			**Prepared:** 03/06/23 15:21				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l	1	03/06/23	O-09
Surrogate(s)							
1,2-Dichloroethane-d4	*106%*		*82-125*	*Conc: 52.9*		*03/06/23*	
4-Bromofluorobenzene	*93%*		*88-108*	*Conc: 46.7*		*03/06/23*	
Toluene-d8	*96%*		*92-112*	*Conc: 47.9*		*03/06/23*	
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32				**Analyst:** pjs

Sample Results

(Continued)

Sample: BGMP003_20230225 (570-129005-1) Sampled: 02/25/23 10:30 by Client
3C06015-01 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32				**Analyst:** pjs
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l	1	04/05/23	Q-01

Sample: TB_20230225-2 (570-129005-3) Sampled: 02/25/23 10:30 by Client
3C06015-02 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C0490 **Preparation:** EPA 5030B			**Prepared:** 03/06/23 15:21				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l	1	03/06/23	O-09
Surrogate(s)							
1,2-Dichloroethane-d4	*103%*		*82-125*	*Conc: 51.5*		*03/06/23*	
4-Bromofluorobenzene	*100%*		*88-108*	*Conc: 50.0*		*03/06/23*	
Toluene-d8	*97%*		*92-112*	*Conc: 48.6*		*03/06/23*	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C0821-BLK1)					**Prepared: 03/09/23**	**Analyzed: 03/28/23**					
Endrin aldehyde	ND	0.0019	0.050	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.105*			*ug/l*	*0.100*		*105*	*33-133*			
Tetrachloro-meta-xylene	*0.0868*			*ug/l*	*0.100*		*87*	*32-130*			
LCS (W3C0821-BS1)					**Prepared: 03/09/23**	**Analyzed: 03/28/23**					
Endrin aldehyde	0.0829	0.0019	0.050	ug/l	0.100		83	18-130			
Surrogate(s)											
Decachlorobiphenyl	*0.107*			*ug/l*	*0.100*		*107*	*33-133*			
Tetrachloro-meta-xylene	*0.0835*			*ug/l*	*0.100*		*84*	*32-130*			
LCS Dup (W3C0821-BSD1)					**Prepared: 03/09/23**	**Analyzed: 03/28/23**					
Endrin aldehyde	0.0899	0.0019	0.050	ug/l	0.100		90	18-130	8	30	
Surrogate(s)											
Decachlorobiphenyl	*0.110*			*ug/l*	*0.100*		*110*	*33-133*			
Tetrachloro-meta-xylene	*0.0808*			*ug/l*	*0.100*		*81*	*32-130*			

Hydrazine by LCMS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2019-BLK1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l							
LCS (W3C2019-BS1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.81	0.62	2.0	ug/l	20.0		14	50-150			Q-01
Matrix Spike (W3C2019-MS1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.11	0.62	2.0	ug/l	20.0	*ND*	11	50-150			Q-01
Matrix Spike Dup (W3C2019-MSD1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.45	0.62	2.0	ug/l	20.0	*ND*	12	50-150	15	30	Q-01

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Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C0830-BLK1)					**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	ND	0.0040	0.010	ug/l							
Diazinon	ND	0.0034	0.010	ug/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.458*			*ug/l*	*0.500*		*92*	*50-141*			
Triphenyl phosphate	*0.489*			*ug/l*	*0.500*		*98*	*63-200*			
LCS (W3C0830-BS1)					**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	0.0492	0.0040	0.010	ug/l	0.0500		98	63-145			
Diazinon	0.0433	0.0034	0.010	ug/l	0.0500		87	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.451*			*ug/l*	*0.500*		*90*	*50-141*			
Triphenyl phosphate	*0.540*			*ug/l*	*0.500*		*108*	*63-200*			
Matrix Spike (W3C0830-MS1)	**Source: 3C06015-01**				**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	0.0458	0.0040	0.010	ug/l	0.0500	*ND*	92	37-168			
Diazinon	0.0434	0.0034	0.010	ug/l	0.0500	*ND*	87	36-153			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.463*			*ug/l*	*0.500*		*93*	*50-141*			
Triphenyl phosphate	*0.536*			*ug/l*	*0.500*		*107*	*63-200*			
Matrix Spike Dup (W3C0830-MSD1)	**Source: 3C06015-01**				**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	0.0519	0.0040	0.010	ug/l	0.0500	*ND*	104	37-168	12	30	
Diazinon	0.0438	0.0034	0.010	ug/l	0.0500	*ND*	88	36-153	0.9	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.483*			*ug/l*	*0.500*		*97*	*50-141*			
Triphenyl phosphate	*0.551*			*ug/l*	*0.500*		*110*	*63-200*			

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C0490-BLK1)					**Prepared & Analyzed: 03/06/23**						
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l							
Surrogate(s)											
1,2-Dichloroethane-d4	*51.1*			*ug/l*	*50.0*		*102*	*82-125*			
4-Bromofluorobenzene	*50.5*			*ug/l*	*50.0*		*101*	*88-108*			
Toluene-d8	*50.4*			*ug/l*	*50.0*		*101*	*92-112*			
LCS (W3C0490-BS1)					**Prepared & Analyzed: 03/06/23**						
2-Chloroethyl vinyl ether	56.9	0.19	5.0	ug/l	50.0		114	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*50.0*			*ug/l*	*50.0*		*100*	*82-125*			
4-Bromofluorobenzene	*51.9*			*ug/l*	*50.0*		*104*	*88-108*			
Toluene-d8	*54.4*			*ug/l*	*50.0*		*109*	*92-112*			
LCS Dup (W3C0490-BSD1)					**Prepared: 03/06/23 Analyzed: 03/09/23**						
2-Chloroethyl vinyl ether	56.7	0.19	5.0	ug/l	50.0		113	0.1-305	0.4	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*48.0*			*ug/l*	*50.0*		*96*	*82-125*			
4-Bromofluorobenzene	*52.8*			*ug/l*	*50.0*		*106*	*88-108*			
Toluene-d8	*51.6*			*ug/l*	*50.0*		*103*	*92-112*			

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Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
O-05	The extraction for this analyte was performed outside of the EPA recommended holding time.
O-09	This sample was received with the EPA recommended holding time expired.
Q-01	The recovery of this analyte in QC sample was outside control limits. Sample was justified as ND based on the low level standard at or below the reporting limit.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Analyses Accreditation Summary

Analyte	CAS #	Not By NELAP	ANAB ISO 17025
EPA 8315M in Water			
Monomethylhydrazine (MMH)	60-34-4	✓	

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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3C00015

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208465.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	X	X	X	7	See Attached Instructions
TB_20230225-2 (570-129005-3)	2/25/23	10:30 Pacific		Water			X				2	See Attached Instructions
							(4)	(2)	(2)	(1)		# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-2023 15:40	EC		3.1.23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - D026 D278

ICOC No:
570-208465

Count	Container Type	Preservative
5	Amber Glass 1 liter - unpreserved	None
4	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (EPA 608 - Pesticides/PCBs - PP list)	Level IV package, MDL, EQUIS 5C
1	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	525.2- 24 hour extraction for Diazinon and Chyloriphrous- level IV package needed.
1	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV package, MDL, EQUIS 5C
1, 2	SUBCONTRACT	SUB (VOCs+PP+xylene+Freon 11+Freon 113+Freon 123A,Cyclohexane,cis-1,2-DCE)	Level IV package, MDL, EQUIS 5C
1,3	SUBCONTRACT	SUB (VOCs-only A+A+2CVE (E624))	Level IV package, MDL, EQUIS 5C

TB_20230225-2 (570-129005-3)

X

2

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: 3C06015
WKO Logged by: Jaime Gomez
Samples Checked by: Jaime Gomez

Date/Time Received: 03/01/23 @ 15:40
# of Samples: 02
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
		☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	4.1 °C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)				
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
		☐	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☒	☐	☐	pH paper Lot# 2071882
	Free Chlorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot# 061221E
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☐	

PM Comments

Sample Receipt Checklist Prepared by:
Signature: Jaime Gomez Date: 03/06/23

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129005

570-129005 Chain of Custody

Chain of Custody Record for
...ley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number: 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
BGBMP0003_20230225	2-25-2023	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230225-1	2-25-2023	1030	TB	WM	3	N	N														x				
																									Field Readings
																									Meter Serial # EDBPJOWX
																									Time of Readings 1030
																									DO (mg/L) 20.41
																									pH 8.15
																									Temp (°C/°F) 44.9
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-25-2023 / 1110
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI ~~#4409815~~ 5701145595
Please mail data to km filer@haleyaldrich.com and post to Total Access Build H... & Aldrich a AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company:	Date/Time: 2-27-23 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by: EC	Date/Time: 2-27-23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2, 1.6/15 SC12

SAP COC 2019/2020 VERSION 3

4/27/2023

129005

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624)	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608)	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013)	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077)	Chlorpyrifos, Diazinon (E525.2)	Asbestos (E100.2)	
									1-1L Poly	1 500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
1	BGBMP0003_20230225	2-25-2023	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3	TB_20230225-2	2-25-2023	1030	TB	WM	3	N	N				X															
	Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ ~~Return to Client~~ 6 Months

Special Instructions/QC Requirements & Comments: ECI ~~#44003915~~ 57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level I Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.			
Relinquished by: [signature]	Company: H-A	Date/Time: 2-27-23/1120	Receiv [signature] 2/27/23 1120 EC	Date/Time: 2/27/23 1120
Relinquished by: [signature]	Company: EC	Date/Time: 2/27/23 1800	Receiv [signature] EC	Date/Time: 2-27-23 18:00
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/27/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129005-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fil_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved		Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X		3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 02/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-208625

Containers

Count	Container Type	Preservative
1	Amber Glass 1 liter - unpreserved	None
2	Plastic 2 5 Gallon	None

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s):	COC No. 570-208683 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin California	Page: Page 1 of 1
Company: EMSL Analytical Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-7
Address: 520 Mission Street,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes

A HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100 2)/ Asbestos 100 2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 2/28/23 1333	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

4/27/2023

ICOC No:
570-208683

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100 2)/ Asbestos 100 2	Level IV package needed

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No.: 570-208684 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129005-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1340				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208465.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230225-2 (570-129005-3)	2/25/23	10:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-2023 15:40	EC		3-1-23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - T026 T027

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129005-5

Login Number: 129005
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129005-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

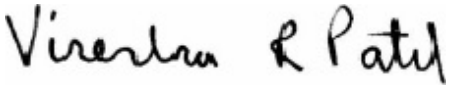
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129005-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129005-6

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.5º C and 2.2º C.

Receipt Exceptions

The following sample was received outside of holding time for 300.0 NO2, NO3, Chromium VI 218.6, Settleable Solids SM2540F, BOD SM5210B, MBAS SM5540C, TurbiditySM2540C: BGBMP0003_20230225 (570-129005-1).

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129005-6
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: BGBMP0003_20230225
Lab Sample ID: 570-129005-1

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129005-1	BGBMP0003_20230225	Water	02/25/23 10:30	02/27/23 18:00

aquatic bioassay & consulting laboratories, inc

March 22, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	BGBMP0003_20230225
DATE RECEIVED:	27 Feb - 2023
ABC LAB. NO.:	CSE0223.186

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = -0.59 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Report Date: 21 Mar-23 16:38 (p 1 of 1)
Test Code/ID: CSE0223.186cer / 01-7229-6856

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	17-3705-4198	Test Type:	Reproduction-Survival (7d)	Analyst:			
Start Date:	28 Feb-23 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water		
Ending Date:	07 Mar-23 14:02	Species:	Ceriodaphnia dubia	Brine:	Not Applicable		
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO	Age:	<24
Sample ID:	18-7182-7690	Code:	CSE0223.186cer	Project:			
Sample Date:	25 Feb-23 10:30	Material:	Sample Water	Source:	Bioassay Report		
Receipt Date:	27 Feb-23 13:45	CAS (PC):		Station:	BGBMP0003_20230225		
Sample Age:	76h (2.5 °C)	Client:	Eurofins Calscience				

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
12-9609-1774	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
01-8902-7064	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
12-9609-1774	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
01-8902-7064	Reproduction	Control Resp	25.25	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	25.25	23.47	27.03	20	32	0.8488	3.796	15.03%	0.00%
100		20	25.4	23.86	26.94	21	33	0.7341	3.283	12.93%	-0.59%

7d Survival Rate Detail — MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail — MD5: 47087FEBEC55A7B34FBF396E9666D537

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	28	27	30	27	25	22	21	25	31
		30	32	25	29	23	23	20	21	21	21
100		30	25	23	22	25	24	33	23	31	23
		25	27	21	22	30	23	24	26	25	26

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	01-8902-7064	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:30	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	18 Mar-23 12:47	**MD5 Hash:**	47087FEBEC55A7B34FBF396E9666D537	**Editor ID:**	007-730-798-8
Batch ID:	17-3705-4198	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	28 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	07 Mar-23 14:02	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-7182-7690	**Code:**	CSE0223.186cer	**Project:**	
Sample Date:	25 Feb-23 10:30	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	BGBMP0003_20230225
Sample Age:	76h (2.5 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	37	6.651	0.8514	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	25.25	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.225	0.225	1	0.01787	0.8944	Non-Significant Effect
Error	478.55	12.5934	38			
Total	478.775		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	1.197	7.353	0.2807	Equal Variances
	Mod Levene Equality of Variance Test	1.262	7.353	0.2683	Equal Variances
	Variance Ratio F Test	1.337	3.432	0.5332	Equal Variances
Distribution	Anderson-Darling A2 Test	0.9569	3.878	0.0158	Normal Distribution
	D'Agostino Kurtosis Test	1.198	2.576	0.2309	Normal Distribution
	D'Agostino Skewness Test	1.491	2.576	0.1359	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	3.659	9.21	0.1605	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1534	0.1617	0.0186	Normal Distribution
	Shapiro-Wilk W Normality Test	0.936	0.9236	0.0253	Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	25.25	23.47	27.03	25	20	32	0.8488	15.03%	0.00%
100		20	25.4	23.86	26.94	25	21	33	0.7341	12.93%	-0.59%

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	28	27	30	27	25	22	21	25	31
		30	32	25	29	23	23	20	21	21	21
100		30	25	23	22	25	24	33	23	31	23
		25	27	21	22	30	23	24	26	25	26

Analysis ID:	01-8902-7064	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:30	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	18 Mar-23 12:47	**MD5 Hash:**	47087FEBEC55A7B34FBF396E9666D537	**Editor ID:**	007-730-798-8

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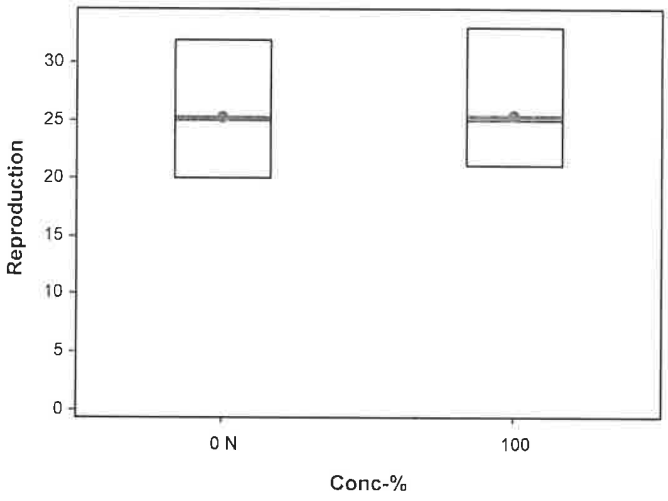
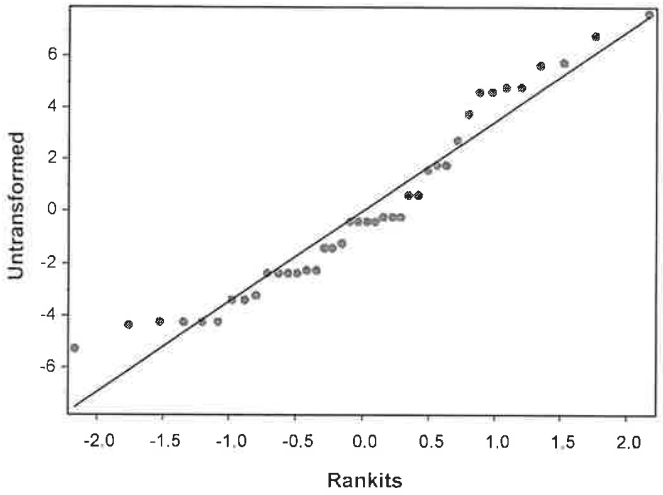




Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-9609-1774	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:30	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	18 Mar-23 12:47	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	007-730-798-8
Batch ID:	17-3705-4198	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	28 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	07 Mar-23 14:02	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-7182-7690	**Code:**	CSE0223.186cer	**Project:**	
Sample Date:	25 Feb-23 10:30	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	BGBMP0003_20230225
Sample Age:	76h (2.5 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

7d Survival Rate Binomials

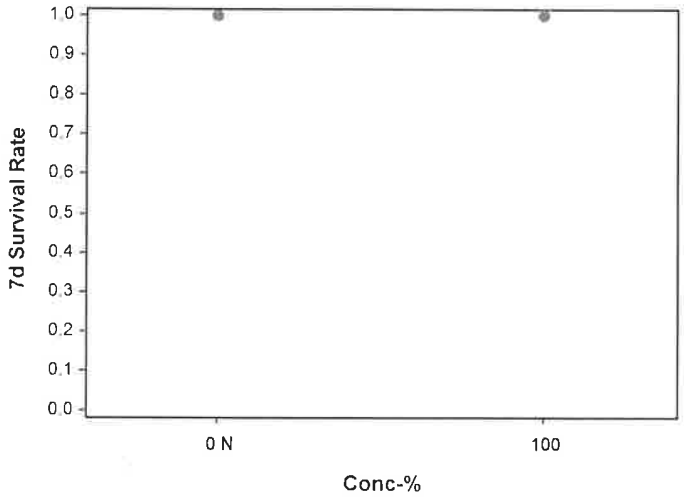
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-9609-1774	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:30	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	18 Mar-23 12:47	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	007-730-798-8

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	17-3705-4198	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**			
Start Date:	28 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water		
Ending Date:	07 Mar-23 14:02	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable		
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:**	<24
Sample ID:	18-7182-7690	**Code:**	CSE0223.186cer	**Project:**			
Sample Date:	25 Feb-23 10:30	**Material:**	Sample Water	**Source:**	Bioassay Report		
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	BGBMP0003_20230225		
Sample Age:	76h (2.5 °C)	**Client:**	Eurofins Calscience				

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	62.62	62.19	63.06	62	63	0.06469	0.5175	0.83%	0
100		8	18	18	18	18	18	0	0	0.00%	0
Overall		16	40.31	28.03	52.59	18	63	5.762	23.05	57.17%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.6	370	377.3	369	380	0.5467	4.373	1.17%	0
100		8	160.6	156	165.3	150	166	0.6942	5.553	3.46%	0
Overall		16	267.1	208.5	325.8	150	380	27.52	110.1	41.22%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.887	7.712	8.063	7.6	8.2	0.02625	0.21	2.66%	0
100		8	7.775	7.622	7.928	7.5	8	0.0229	0.1832	2.36%	0
Overall		16	7.831	7.725	7.937	7.5	8.2	0.04977	0.1991	2.54%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	96.38	95.94	96.81	96	97	0.06469	0.5175	0.54%	0
100		8	21	21	21	21	21	0	0	0.00%	0
Overall		16	58.69	37.95	79.43	21	97	9.731	38.93	66.33%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8.038	7.994	8.081	8	8.1	0.00647	0.05176	0.64%	0
100		8	7.988	7.866	8.109	7.8	8.2	0.01822	0.1458	1.83%	0
Overall		16	8.013	7.955	8.07	7.8	8.2	0.0272	0.1088	1.36%	0 (0%)

Temperature-°C

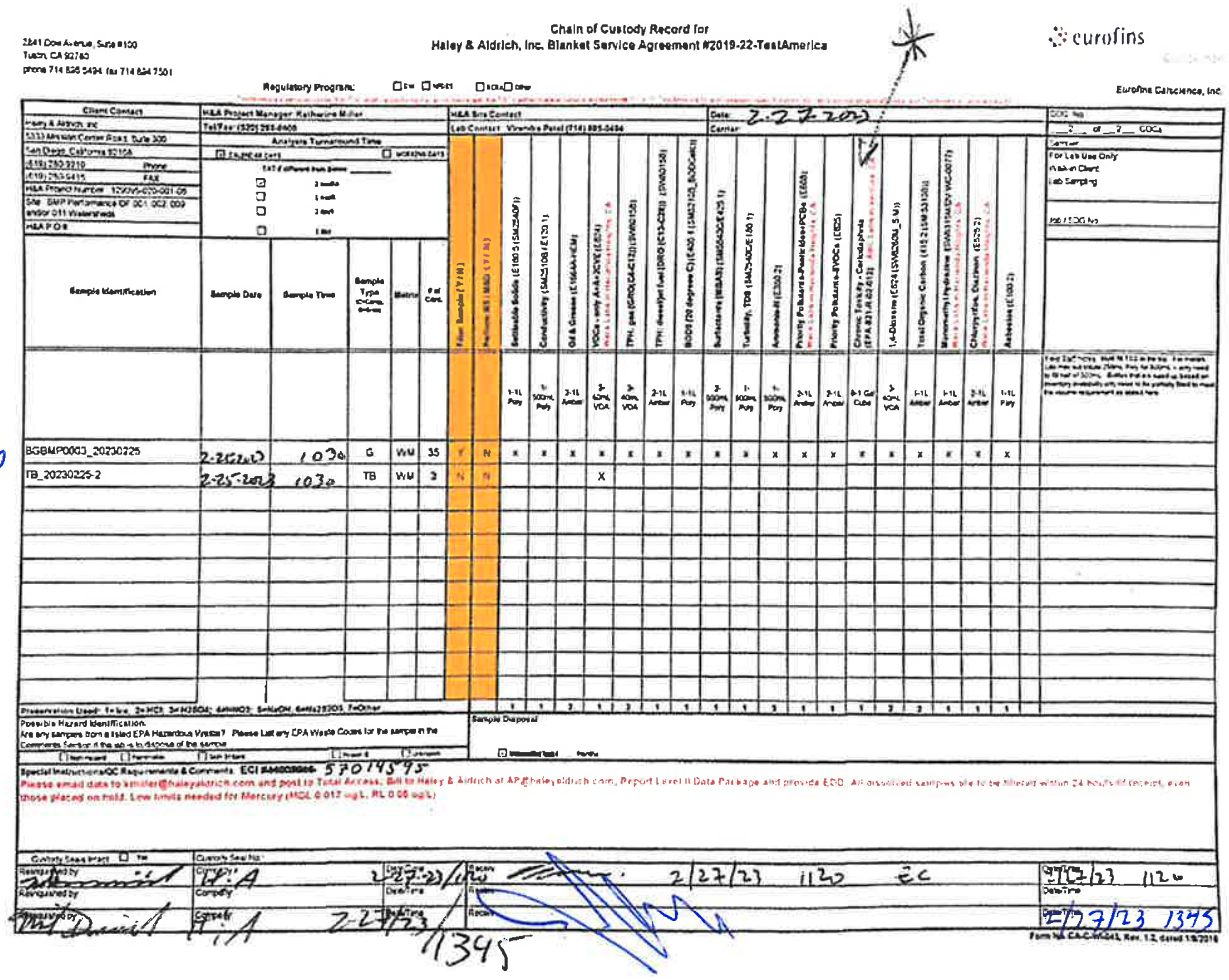
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24	24	24	24	24	0	0	0.00%	0
Overall		16	24	24	24	24	24	0	0	0.00%	0 (0%)

Scanned with CamScanner

Temp. deg. C = 2.5°C

Chlorine (mg/L) = <0.1

NH3 (mg/L) = <0.1



2841 Dow Avenue, Suite 100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

Eurofins Calscience, Inc.

Regulatory Programs: ☐ Dw ☐ NPDES ☐ RCRA ☐ Other

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact	Date: 2-27-2023	COC No
Haley & Aldrich, Inc	Tel/Fax: (320) 293-6908	Lab Contact: Virendra Patel (714) 895-5494	Carrier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Carrier
San Diego, California 92108	☑ Calendar (C) ☐ Working (W)			For Lab Use Only
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client
(619) 293-5415 FAX	☑ 2 weeks			Lab Sampling
H&A Project Number: 122000-020-001-05	☐ 1 week			
Site: SAP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y or N)	Perform MS / MSD (Y or N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A HEM)	VOCs + only A+A+ 624/E624	TPH, gas (SHRO(C4-C12)) (SW8015B)	TPH, diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD (20 degrees C) (E405.1 (SM5210B), ADDCMS)	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TSS (SM2130B/E180.1)	Ammonia-N (E350.2)	Priority Pollutants + Perch Metals+VOCs+ (E200)	Priority Pollutants-SVOCs (E625)	Chrom. Toxicity, Ceriodaphnia (EPA 821-R-02-013)	1,4-Dioxane (E522 (SW8260B_SIM))	Total Organic Carbon (415.2 (SM5310B))	Bromochloromethane (SW8315A/DW/WC4077)	Chlorpyrifos, Diazinon (E525.2)	Asbestos (E1003.2)	
								1-1L Poly	1x 500mL Poly	2-1L Amber	6-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	6-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
BGSMP0003_20230225	2-25-23	1030	G	WW	35	Y	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TB_20230225-2	2-25-2023	1030	TB	WW	3	N	N				X														

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the samples in the Comments Section if the answer is Yes or Unknown

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ___ months

Special Instructions/QC Requirements & Comments: ECI 570145 95
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.012 ug/L, RL 0.05 ug/L)

Custody Seals Intact ☐ Yes	Custody Seal No:					
Relinquished by	Company: H&A	Date/Time: 2-27-23 1130	Received by		2/27/23 1130	EC
Relinquished by	Company	Date/Time	Received by	Company	Date/Time: 2/27/23 1130	
Relinquished by	Company: H&A	Date/Time: 2-27-23 1345	Received by	Company	Date/Time: 2/27/23 1345	

Form No. CA-C-WC043, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

.186

* Hand-delivered to ABC with copy of COC

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 7 February - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 15.00 ug/l
EC50 = 20.00 ug/l

ENDPOINT: REPRODUCTION

NOEC = 10.00 ug/l

IC25 = 12.18 ug/l
IC50 = 18.12 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 20 Mar-23 12:21 (p 1 of 2)
Test Code/ID: CER020723 / 14-0030-6243

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon		
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water		
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable		
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:**	<24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX		
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant		
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX		
Sample Age:	---	**Client:**	ABC Labs				

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
12-2134-6724	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	✓	10	30	17.32	---	1
01-7826-1344	Reproduction	Dunnett Multiple Comparison Test	✓	10	30	17.32	14.9%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
10-0781-6132	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	13	13	13	1
				EC20	14	14	14	
				EC25	15	15	15	
				EC40	18	18	18	
				EC50	20	20	20	
20-1572-0105	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	9.744	8.161	12.04	1
			✓	IC20	11	9.214	13.1	
			✓	IC25	12.18	10.33	14.15	
			✓	IC40	15.75	14.27	17.32	
			✓	IC50	18.12	16.89	19.44	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
10-0781-6132	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
12-2134-6724	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
01-7826-1344	Reproduction	Control Resp	21.6	15	<<	Yes	Passes Criteria
20-1572-0105	Reproduction	Control Resp	21.6	15	<<	Yes	Passes Criteria
01-7826-1344	Reproduction	PMSD	0.1488	0.13	0.47	Yes	Passes Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	21.6	18.77	24.43	16	29	1.249	3.95	18.29%	0.00%
3		10	27.1	24.85	29.35	21	32	0.9939	3.143	11.60%	-25.46%
5		10	27.2	25.39	29.01	23	31	0.8	2.53	9.30%	-25.93%
10		10	21.3	18.67	23.93	17	28	1.165	3.683	17.29%	1.39%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail MD5: E68F14682D021D024F00396964E3E9BD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail MD5: B6584EF080BB39328ADF89E906DB2ACD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Report Date: 20 Mar-23 12:20 (p 1 of 2)
Test Code/ID: CER020723 / 14-0030-6243

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	01-7826-1344	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	10	30	17.32	---	3.215	14.88%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	-3.649	2.133	3.215	CDF	1.0000	Non-Significant Effect
		5	18	-3.715	2.133	3.215	CDF	1.0000	Non-Significant Effect
		10	18	0.199	2.133	3.215	CDF	0.6730	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	21.6	15	<<	Yes	Passes Criteria
PMSD	0.1488	0.13	0.47	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	325.4	108.467	3	9.547	8.9E-05	Significant Effect
Error	409	11.3611	36			
Total	734.4		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	1.886	11.34	0.5963	Equal Variances
	Levene Equality of Variance Test	0.7841	4.377	0.5107	Equal Variances
	Mod Levene Equality of Variance Test	0.5917	4.377	0.6245	Equal Variances
Distribution	Anderson-Darling A2 Test	0.1802	3.878	0.9718	Normal Distribution
	D'Agostino Kurtosis Test	0.2514	2.576	0.8015	Normal Distribution
	D'Agostino Skewness Test	0.6674	2.576	0.5045	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.5086	9.21	0.7754	Normal Distribution
	Kolmogorov-Smirnov D Test	0.06346	0.1617	1.0000	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9856	0.9236	0.8811	Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	21.6	18.77	24.43	22.75	16	29	1.249	18.29%	0.00%
3		10	27.1	24.85	29.35	27	21	32	0.9939	11.60%	-25.46%
5		10	27.2	25.39	29.01	27.67	23	31	0.8	9.30%	-25.93%
10		10	21.3	18.67	23.93	20.5	17	28	1.165	17.29%	1.39%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

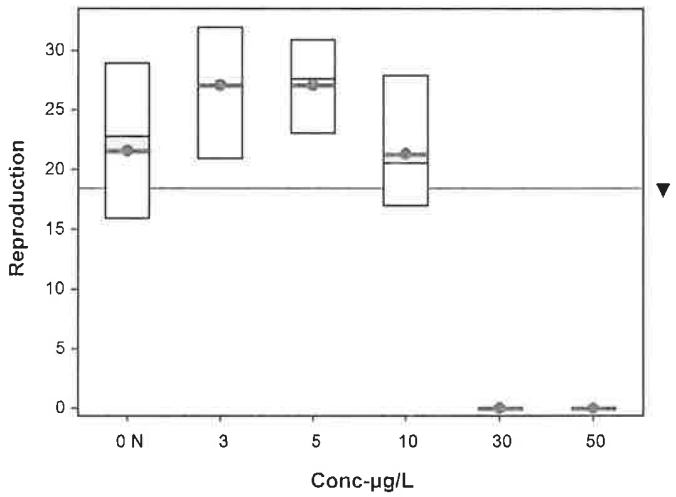
Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

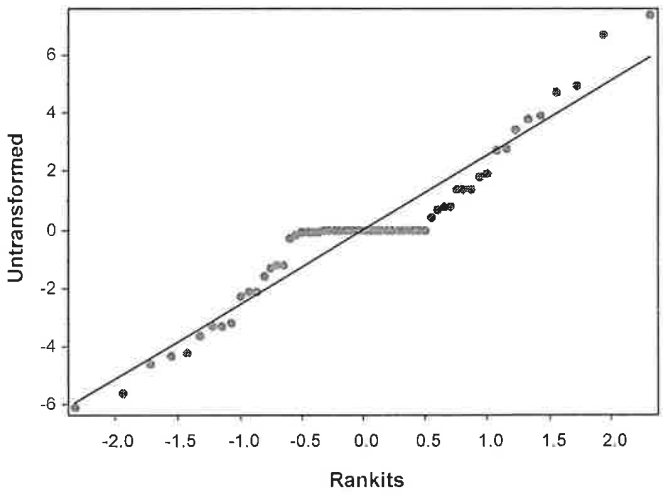
Analysis ID:	01-7826-1344	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Graphics





CETIS Analytical Report

Report Date: 20 Mar-23 12:20 (p 1 of 4)
Test Code/ID: CER020723 / 14-0030-6243

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	10-0781-6132	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	13	13	13
EC20	14	14	14
EC25	15	15	15
EC40	18	18	18
EC50	20	20	20

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	**Code**	**Count**	**Mean**	**Median**	**Min**	**Max**	**CV%**	**%Effect**	**ΣA/ΣB**	**Mean**	**%Effect**
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

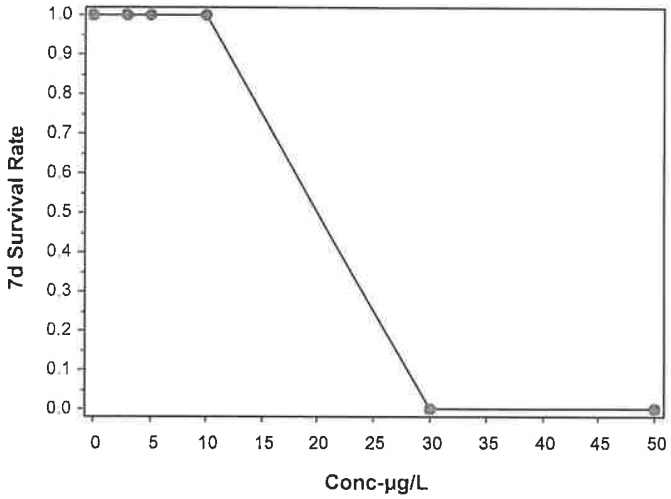
7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	10-0781-6132	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8

Graphics



Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-1572-0105	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	10 Mar-23 17:02	MD5 Hash:	B6584EF080BB39328ADF89E906DB2ACD	Editor ID:	004-984-722-8
Batch ID:	19-0270-0407	Test Type:	Reproduction-Survival (7d)	Analyst:	Tina DeLeon
Start Date:	07 Feb-23 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Feb-23 15:45	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 2h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-3831-7124	Code:	CER020723	Project:	REF TOX
Sample Date:	07 Feb-23 14:00	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1451893	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	21.6	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	9.744	8.161	12.04
IC20	11	9.214	13.1
IC25	12.18	10.33	14.15
IC40	15.75	14.27	17.32
IC50	18.12	16.89	19.44

Reproduction Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	21.6	22.75	16	29	18.29%	0.00%	25.3	0.00%
3		10	27.1	27	21	32	11.60%	-25.46%	25.3	0.00%
5		10	27.2	27.67	23	31	9.30%	-25.93%	25.3	0.00%
10		10	21.3	20.5	17	28	17.29%	1.39%	21.3	15.81%
30		10	0	0	0	0	---	100.00%	0	100.00%
50		10	0	0	0	0	---	100.00%	0	100.00%

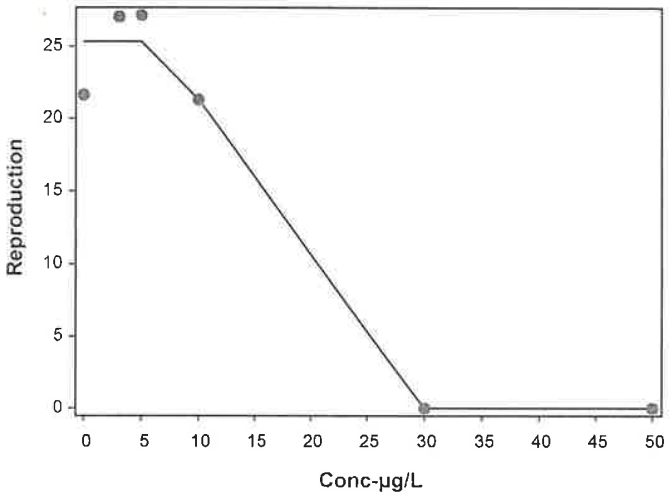
Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-1572-0105	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8

Graphics



CETIS Analytical Report

Report Date: 20 Mar-23 12:21 (p 1 of 2)
Test Code/ID: CER020723 / 14-0030-6243

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-2134-6724	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	10 Mar-23 17:02	MD5 Hash:	E68F14682D021D024F00396964E3E9BD	Editor ID:	004-984-722-8
Batch ID:	19-0270-0407	Test Type:	Reproduction-Survival (7d)	Analyst:	Tina DeLeon
Start Date:	07 Feb-23 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Feb-23 15:45	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 2h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-3831-7124	Code:	CER020723	Project:	REF TOX
Sample Date:	07 Feb-23 14:00	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0000	Exact	2.7E-05	Significant Effect
		50*	0.0000	Exact	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		0	10	10	0.0000	1.0000	100.00%
50		0	10	10	0.0000	1.0000	100.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

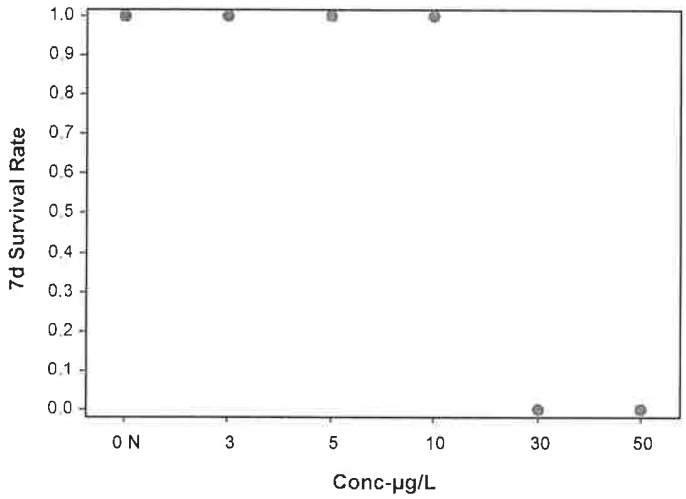
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-2134-6724	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon	
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24

Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX	
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant	
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX	
Sample Age:	---	**Client:**	ABC Labs			

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	65	65	65	65	65	0	0	0.00%	0
50		4	60	60	60	60	60	0	0	0.00%	0
Overall		12	63.33	61.77	64.9	60	65	0.7107	2.462	3.89%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.4	370.2	376.6	369	380	0.4815	3.852	1.03%	0
3		8	376.2	370.9	381.6	370	386	0.7955	6.364	1.69%	0
5		8	369.1	365.8	372.4	364	373	0.493	3.944	1.07%	0
10		8	369.9	368.6	371.2	367	372	0.1941	1.553	0.42%	0
30		6	370.3	368.9	371.8	369	373	0.2277	1.366	0.37%	0
50		3	370	365	375	368	372	0.6667	2	0.54%	0
Overall		41	371.7	370.3	373.2	364	386	0.7063	4.522	1.22%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.838	7.677	7.998	7.6	8.1	0.02403	0.1923	2.45%	0
3		8	7.763	7.596	7.929	7.5	8.1	0.02494	0.1996	2.57%	0
5		8	7.713	7.537	7.888	7.5	8.1	0.02625	0.21	2.72%	0
10		8	7.675	7.509	7.841	7.4	8	0.02478	0.1982	2.58%	0
30		6	7.617	7.295	7.938	7.1	8	0.05101	0.3061	4.02%	0
50		3	7.867	7.58	8.154	7.8	8	0.03849	0.1155	1.47%	0
Overall		41	7.737	7.668	7.805	7.1	8.1	0.03381	0.2165	2.80%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	98	98	98	98	98	0	0	0.00%	0
50		4	99	99	99	99	99	0	0	0.00%	0
Overall		12	98.33	98.02	98.65	98	99	0.1421	0.4924	0.50%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.95	7.841	8.059	7.7	8.1	0.01637	0.1309	1.65%	0
3		8	7.975	7.901	8.049	7.8	8.1	0.01108	0.08864	1.11%	0
5		8	7.95	7.841	8.059	7.7	8.1	0.01637	0.1309	1.65%	0
10		8	7.95	7.85	8.05	7.7	8.1	0.01494	0.1195	1.50%	0
30		6	7.917	7.794	8.039	7.7	8	0.01948	0.1169	1.48%	0
50		3	7.9	7.652	8.148	7.8	8	0.03333	0.1	1.27%	0
Overall		41	7.946	7.911	7.982	7.7	8.1	0.01749	0.112	1.41%	0 (0%)

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		5	24	24	24	24	24	0	0	0.00%	0
50		3	24	24	24	24	24	0	0	0.00%	0
Overall		40	24	24	24	24	24	0	0	0.00%	0 (0%)

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129005

570-129005 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number: 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
BGBMP0003_20230225	2-25-2023	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230225-1	2-25-2023	1030	TB	WM	3	N	N														x				
																									Field Readings
																									Meter Serial #: EDBPJOUX
																									Time of Readings: 1030
																									DO (mg/L): 20.41
																									pH: 8.15
																									Temp (°C/°F): 44.9
																									TRC (mg/L): 0.00
																									Checked by:
																									Date/Time: 2-25-2023 / 1110
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI ~~#4400915~~ 5701145595
Please mail data to km filer@haleyaldrich.com and post to Total Access Build to H& Aldrich a AP@haleyaldrc com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: H&A	Date/Time: 2-27-23 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by: EC	Date/Time: 2-27-23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2, 1.6/15 SC12

SAP COC 2019/2020 VERSION 3

4/9/2023

129005

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624)	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608)	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013)	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077)	Chlorpyrifos, Diazinon (E525.2)	Asbestos (E100.2)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
									1-1L Poly	1 500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
1	BGBMP0003_20230225	2-25-2023	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3	TB_20230225-2	2-25-2023	1030	TB	WM	3	N	N				X															
	Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ ~~Return to Client~~ 6 Months

Special Instructions/QC Requirements & Comments: ECI ~~#44003915~~ 57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level I Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.			
Relinquished by: [signature]	Company: H-A	Date/Time: 2-27-23/1120	Receiv [signature] 2/27/23 1120 EC	Date/Time: 2/27/23 1120
Relinquished by: [signature]	Company: EC	Date/Time: 2/27/23 1800	Receiv [signature] EC	Date/Time: 2-27-23 18:00
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/9/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129005-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved		Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X		3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	02/28/23 1018	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-208625

Containers

Count	Container Type	Preservative
1	Amber Glass 1 liter - unpreserved	None
2	Plastic 2 5 Gallon	None

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s):	COC No. 570-208683 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin California	Page: Page 1 of 1
Company: EMSL Analytical Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-7
Address: 520 Mission Street,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes

A HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100 2)/ Asbestos 100 2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1333				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208683

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100 2)/ Asbestos 100 2	Level IV package needed

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No.: 570-208684 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129005-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1340				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208465.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230225-2 (570-129005-3)	2/25/23	10:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 3-1-23 15:40	Company EC	Received by:	Date/Time: 3-1-23 15:40	Company Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - 7026 7027

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129005-6

Login Number: 129005

List Number: 1

Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:21:39 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129005-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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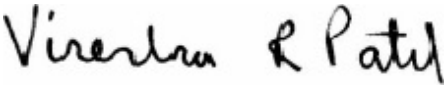
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/9/2023 10:21:39 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

Table of Contents

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Sample Summary 7
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-7

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129005-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129005-7

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.5º C and 2.2º C.

Receipt Exceptions

The following sample was received outside of holding time for 300.0 NO2, NO3, Chromium VI 218.6, Settleable Solids SM2540F, BOD SM5210B, MBAS SM5540C, TurbiditySM2540C: BGBMP0003_20230225 (570-129005-1).

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-7

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129005-1	BGBMP0003_20230225	Water	02/25/23 10:30	02/27/23 18:00

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322305466
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/01/2023
Analyzed: 03/10/2023

Proj: 570-208683.1/ 570-129005-7/ 57014595/ Boeing SSFL ISRA and BMP

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS				
					Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
							MFL (million fibers per liter)		
BGBMP0003_20230225 (570-129005-1) 322305466-0001	3/2/2023 01:50 PM	1	1288	0.2580	≥ 0.5 µm	None Detected	ND	5.00	<5.00	0.00 - 18.00
					> 10 µm only	None Detected	ND	5.00	<5.00	0.00 - 18.00

Collection Date/Time: *02/25/2023 10:30 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Kyeong Corbin (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 03/14/2023 07:38:51

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

#322305466

Chain of Custody Record

eurofins | Environment Testing

4/9/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208683.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-7
Address: 520 Mission Street, ,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

0.5 °c

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
Preservation Code:									
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	2/28/23 1333		Annette MCKissack	03/01/23 935	EA Testing
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

OrderID: 322305466

ICOC No:
570-208683

#322305466

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100.2)/ Asbestos 100.2	Level IV package needed

McKissack, Annette #322305466

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, March 1, 2023 11:49 AM
To: McKissack, Annette
Cc: LA Testing Lab - Pasadena
Subject: RE: 570-208683.1 | 570-129005-7

[EXTERNAL E-MAIL]

Sorry waste water both levels of reporting.

Best Regards,

Virendra Patel
Project Manager

Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

Follow Us! Facebook | LinkedIn

From: Virendra Patel
Sent: Wednesday, March 1, 2023 10:47 AM
To: McKissack, Annette <amckissack@latesting.com>
Cc: LA Testing Lab - Pasadena <pasadenalab@EMSL.com>
Subject: RE: 570-208683.1 | 570-129005-7

Drinking water to provide both screening levels. Thank you!

Best Regards,

Virendra Patel
Project Manager

Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

Follow Us! Facebook | LinkedIn

#322305466

From: McKissack, Annette <amckissack@latesting.com>
Sent: Wednesday, March 1, 2023 10:44 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: LA Testing Lab - Pasadena <pasadenalab@EMSL.com>
Subject: 570-208683.1 | 570-129005-7

EXTERNAL EMAIL*

Hello,

Please confirm if the above mentioned project will be analyzed as a drinking water or waste water analysis.

Thank you,

Annette McKissack
Laboratory Administrative Assistant
LA Testing 520 Mission Street South Pasadena, CA 91030
Phone: 323-254-9960 Toll Free: 800-303-0047

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Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

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129005

570-129005 Chain of Custody

Chain of Custody Record for
ley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
BGBMP0003_20230225	2-25-2023	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230225-1	2-25-2023	1030	TB	WM	3	N	N														x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Field Readings
Meter Serial #: EDBPJOWX
Time of Readings: 1030
DO (mg/L): 20.41
pH: 8.15
Temp (°C/°F): 44.9
TRC (mg/L): 0.00
Checked by:
Date/Time: 2-25-2023 / 1110

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI ~~#4400981S~~ 5701145951
Please mail data to km iller@haleyaldrich.com and post to Total Access Bill to Ha & Aldrich a AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: H&A	Date/Time: 2-27-23 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by: EC	Date/Time: 2-27-23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2, 1.6/15 SC12

SAP COC 2019/2020 VERSION 3

4/9/2023

129005

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-05	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Work lab to Hold CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E360.2)	Priority Pollutants-Pesticides+PCBs (E608) Work lab to Hold CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC to be run	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Work Lab to Hold CA	Chlorpyrifos, Diazinon (E625.2) Work lab to Hold CA	Asbestos (E100.2)	
								1-1L Poly	1 500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
1 BGBMP0003_20230225	2-25-2023	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3 TB_20230225-2	2-25-2023	1030	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] Months

Special Instructions/QC Requirements & Comments: ECI #~~44003916~~ 570145795
Please email data to kmiller@haleyald rich com nd post to Total Access Bill to Haley & Al rich at AP@hale aldr ch co Report Level I Dat Package and pro de EDD d ssc ved samples are to be filtered w thin 24 hours of rece pt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H.A	Date/Time: 2-27-23/1120	Receiv	2/27/23 1120 EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Receiv	EC	Date/Time: 2-27-23 18:00
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

4/9/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129005-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fil_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved		Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X		3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	02/28/23 1018	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

4/9/2023

ICOC No
570-208625

Containers

Count	Container Type	Preservative
1	Amber Glass 1 liter - unpreserved	None
2	Plastic 2 5 Gallon	None

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s):	COC No. 570-208683 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin California	Page: Page 1 of 1
Company: EMSL Analytical Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-7
Address: 520 Mission Street,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes

A HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100 2)/ Asbestos 100 2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 2/28/23 1333	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

4/9/2023

ICOC No:
570-208683

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100 2)/ Asbestos 100 2	Level IV package needed

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No.: 570-208684 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129005-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1340				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208465.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230225-2 (570-129005-3)	2/25/23	10:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3-1-23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - T026 T027

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129005-7

Login Number: 129005
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 6:43:52 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129005-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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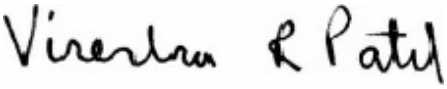
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Qualifiers

Rad

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129005-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129005-8

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.5º C and 2.2º C.

Receipt Exceptions

The following sample was received outside of holding time for 300.0 NO2, NO3, Chromium VI 218.6, Settleable Solids SM2540F, BOD SM5210B, MBAS SM5540C, TurbiditySM2540C: BGBMP0003_20230225 (570-129005-1).

RAD
Methods 900.0, 9310: Gross Alpha and Gross Beta batch 605627
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: (180-153809-B-1-A) and (180-153809-B-1-E DU). Analytical results are reported with the detection limit achieved.

Methods 900.0, 9310: Gross Alpha and Gross Beta batch 605627
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230225 (570-129005-1), (LCS 160-605627/2-A), (LCSB 160-605627/3-A), (MB 160-605627/1-A), (180-153809-B-1-A), (180-153809-B-1-E DU), (180-153809-B-1-D MS) and (180-153809-B-1-C MSBT)

Method 900.0: Gross Alpha Beta prep batch 160-606236:

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-606326 and analytical batch 160-606671 were outside control limits for one or more analytes. In addition RER/RPD was also outside of control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 900.0: Gross Alpha Beta prep batch 160-606326:

The detection goal was not met for the following sample(s). The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank achieved the detection goal demonstrating acceptable sample preparation and instrument performance. (570-129852-R-1-F)

Method 900.0: Gross Alpha Beta prep batch 160-606326:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230225 (570-129005-1), (LCS 160-606326/2-A), (LCSB 160-606326/3-A), (MB 160-606326/1-A), (570-129852-R-1-F), (570-129852-R-1-J MS), (570-129852-R-1-L MSBT), (570-129852-R-1-M MSBTD) and (570-129852-R-1-K MSD)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238

Job ID: 570-129005-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20230225 (570-129005-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 901.1: Gamma Prep Batch 160-604032
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is

Job ID: 570-129005-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

**The method blank (MB) Z-score is within limits and is located in the level IV raw data.

BGBMP0003_20230225 (570-129005-1), (570-128840-R-1-D) and (570-128840-R-1-E DU)

Method 903.0: Radium-226 batch 602356
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230225 (570-129005-1), (LCS 160-602356/2-A), (LCSD 160-602356/3-A) and (MB 160-602356/1-A)

Methods 903.0, 9315: Radium-226 batch 603697
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230225 (570-129005-1), (LCS 160-603697/2-A), (LCSD 160-603697/24-A), (MB 160-603697/1-A), (280-173320-A-1-A), (280-173320-A-1-B MS) and (280-173320-A-1-C MSD)

Method 904.0: Radium-228 batch 602360
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230225 (570-129005-1), (LCS 160-602360/2-A), (LCSD 160-602360/3-A) and (MB 160-602360/1-A)

Methods 904.0, 9320: Radium-228 batch 603699
The LCSD recovered at (132%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCSD 160-603699/24-A)

Methods 904.0, 9320: Radium-228 batch 603699
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230225 (570-129005-1), (LCS 160-603699/2-A), (LCSD 160-603699/24-A), (MB 160-603699/1-A), (280-173320-A-1-D), (280-173320-A-1-E MS) and (280-173320-A-1-F MSD)

Method 905: Strontium-90 prep batch 160-603495:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230225 (570-129005-1), (LCS 160-603033/2-A), (LCSD 160-603033/3-A) and (MB 160-603033/1-A)

Method 905: Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Method 905: Strontium-90 batch 604379

Job ID: 570-129005-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230225 (570-129005-1), (LCS 160-604379/2-A), (MB 160-604379/1-A), (570-129852-R-1-D), (570-129852-L-1-E MS) and (570-129852-L-1-F MSD)

Method 906.0: Tritium 605397
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230225 (570-129005-1), (LCS 160-605397/2-A), (MB 160-605397/1-A), (570-129852-Q-1-B), (570-129852-K-1-D MS) and (570-129852-K-1-E MSD)

Method 906.0: The matrix spike duplicate (MSD) recovery was inadvertently not spiked. However the matrix spike (MS) was within range and all other QC was within limits. Per client, the data will be reported with this narrative.BGBMP0003_20230225 (570-129005-1), (570-129852-Q-1-B), (570-129852-K-1-D MS) and (570-129852-K-1-E MSD)

Method A-01-R: Isotopic Uranium Batch 605724
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.BGBMP0003_20230225 (570-129005-1), (LCS 160-605724/2-A), (MB 160-605724/1-A), (570-129852-R-1-E), (570-129852-L-1-G MS) and (570-129852-L-1-H MSD)

Method A-01-R: Isotopic Uranium batch 605729
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230225 (570-129005-1), (LCS 160-605729/2-A), (MB 160-605729/1-A), (570-131449-AX-1-B) and (570-131449-AX-1-C DU)

Method ExtChrom: Uranium Prep Batch 160-605729:
The following sample was prepared at a reduced aliquot due to discoloration: BGBMP0003_20230225 (570-129005-1).

Method ExtChrom: Uranium Prep Batch 160-605724:
The following sample was prepared at a reduced aliquot due to sediment and discoloration: BGBMP0003_20230225 (570-129005-1).

Method PrecSep_0: Radium-228 Prep Batch 160-602360

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230225 (570-129005-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0:

Method PrecSep-21: Radium-226 Prep Batch 160-602356

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230225 (570-129005-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21:

Method PrecSep-7: Strontium 90 Prep Batch 160-603033

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230225 (570-129005-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch

Job ID: 570-129005-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

precision.

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Client Sample ID: BGBMP0003_20230225 **Lab Sample ID: 570-129005-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.08	U	0.966	0.974	3.00	1.52	pCi/L	03/30/23 11:34	04/04/23 13:05	1
Gross Beta	0.732	U	0.637	0.642	4.00	0.999	pCi/L	03/30/23 11:34	04/04/23 13:05	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.22	U F	1.11	1.12	3.00	1.76	pCi/L	04/06/23 10:28	04/10/23 20:47	1
Gross Beta	-0.0480	U	0.648	0.648	4.00	1.12	pCi/L	04/06/23 10:28	04/10/23 20:47	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	3.03	U	7.51	7.52	20.0	9.71	pCi/L	03/17/23 14:08	03/28/23 20:39	1
Potassium-40	-5.74	U	75.6	75.6		143	pCi/L	03/17/23 14:08	03/28/23 20:39	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	4.40	U	13.5	13.6	20.0	17.2	pCi/L	03/22/23 16:26	03/30/23 05:34	1
Potassium-40	73.1	U	109	109		173	pCi/L	03/22/23 16:26	03/30/23 05:34	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.129	U	0.0952	0.0959	1.00	0.136	pCi/L	03/06/23 09:11	03/29/23 21:58	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*30 - 110*	*03/06/23 09:11*	*03/29/23 21:58*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0128	U	0.131	0.131	1.00	0.250	pCi/L	03/15/23 10:54	04/06/23 15:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.6*		*30 - 110*	*03/15/23 10:54*	*04/06/23 15:30*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.664		0.440	0.444	1.00	0.647	pCi/L	03/06/23 09:48	03/16/23 12:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.7*		*30 - 110*	*03/06/23 09:48*	*03/16/23 12:14*	*1*
Y Carrier	*86.7*		*30 - 110*	*03/06/23 09:48*	*03/16/23 12:14*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.595	U	0.509	0.512	1.00	0.791	pCi/L	03/15/23 11:19	03/29/23 12:04	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*68.6*		*30 - 110*	*03/15/23 11:19*	*03/29/23 12:04*	*1*
Y Carrier	*86.0*		*30 - 110*	*03/15/23 11:19*	*03/29/23 12:04*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.484	U	0.433	0.435	3.00	0.695	pCi/L	03/09/23 13:03	03/17/23 18:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*88.2*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:33*	*1*
Y Carrier	*85.2*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:33*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.143	U	0.423	0.424	3.00	0.738	pCi/L	03/20/23 13:22	03/29/23 16:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*83.5*		*30 - 110*	*03/20/23 13:22*	*03/29/23 16:01*	*1*
Y Carrier	*75.5*		*30 - 110*	*03/20/23 13:22*	*03/29/23 16:01*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-5.86	U F	134	134	500	248	pCi/L	03/29/23 11:02	04/04/23 17:13	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.444	U	0.392	0.392	1.00	0.462	pCi/L	03/30/23 15:31	04/04/23 20:40	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: BGBMP0003_20230225
Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.218	U	0.213	0.214	1.00	0.237	pCi/L	03/30/23 16:34	04/03/23 20:56	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (30-110)
570-129005-1	BGBMP0003_20230225	86.7
LCS 160-602356/2-A	Lab Control Sample	87.6
LCS 160-603697/2-A	Lab Control Sample	90.4
LCSD 160-602356/3-A	Lab Control Sample Dup	83.3
LCSD 160-603697/24-A	Lab Control Sample Dup	87.0
MB 160-602356/1-A	Method Blank	87.6
MB 160-603697/1-A	Method Blank	94.9

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (30-110)
570-129005-1	BGBMP0003_20230225	68.6

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
570-129005-1	BGBMP0003_20230225	86.7	86.7
LCS 160-602360/2-A	Lab Control Sample	87.6	87.1
LCS 160-603699/2-A	Lab Control Sample	90.4	82.2
LCSD 160-602360/3-A	Lab Control Sample Dup	83.3	87.1
LCSD 160-603699/24-A	Lab Control Sample Dup	87.0	82.6
MB 160-602360/1-A	Method Blank	87.6	87.9
MB 160-603699/1-A	Method Blank	94.9	82.6

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
570-129005-1	BGBMP0003_20230225	68.6	86.0

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129005-8
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129005-1	BGBMP0003_20230225	88.2	85.2
LCS 160-603033/2-A	Lab Control Sample	79.1	82.2
LCS 160-604379/2-A	Lab Control Sample	85.6	76.6
LCSD 160-603033/3-A	Lab Control Sample Dup	80.1	82.2
MB 160-603033/1-A	Method Blank	87.1	81.1
MB 160-604379/1-A	Method Blank	79.3	70.3

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129005-1	BGBMP0003_20230225	83.5	75.5

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-605724/2-A	Lab Control Sample	92.1
LCS 160-605729/2-A	Lab Control Sample	38.1
MB 160-605724/1-A	Method Blank	92.8
MB 160-605729/1-A	Method Blank	46.2

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-605627/1-A
Matrix: Water
Analysis Batch: 606125

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605627

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.04907	U	0.414	0.414	3.00	0.809	pCi/L	03/30/23 11:34	04/04/23 12:58	1
Gross Beta	0.06180	U	0.507	0.507	4.00	0.897	pCi/L	03/30/23 11:34	04/04/23 12:58	1

Lab Sample ID: LCS 160-605627/2-A
Matrix: Water
Analysis Batch: 606125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605627

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.37		7.71	3.00	2.82	pCi/L	102	75 - 125

Lab Sample ID: LCSB 160-605627/3-A
Matrix: Water
Analysis Batch: 606125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605627

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	74.34		7.96	4.00	0.916	pCi/L	101	75 - 125

Lab Sample ID: MB 160-606326/1-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606326

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.4133	U	0.657	0.658	3.00	1.12	pCi/L	04/06/23 10:28	04/10/23 20:47	1
Gross Beta	0.02677	U	0.496	0.496	4.00	0.874	pCi/L	04/06/23 10:28	04/10/23 20:47	1

Lab Sample ID: LCS 160-606326/2-A
Matrix: Water
Analysis Batch: 606895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.96		7.62	3.00	2.05	pCi/L	103	75 - 125

Lab Sample ID: LCSB 160-606326/3-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	74.51		7.98	4.00	0.927	pCi/L	102	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604032/1-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604032

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.4655	U	10.3	10.3	20.0	12.1	pCi/L	03/17/23 14:08	03/22/23 19:49	1
Potassium-40	12.53	U	78.9	78.9		135	pCi/L	03/17/23 14:08	03/22/23 19:49	1

Lab Sample ID: LCS 160-604032/2-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604032

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	143200		17000		415	pCi/L	106	75 - 125
Cesium-137	40900	41780		4980	20.0	92.9	pCi/L	102	75 - 125
Cobalt-60	17800	18360		2190		50.3	pCi/L	103	75 - 125

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	5.575	U	11.5	11.5	20.0	14.5	pCi/L	03/22/23 16:26	03/29/23 21:25	1
Potassium-40	-139.9	U	180	180		285	pCi/L	03/22/23 16:26	03/29/23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		443	pCi/L	100	75 - 125
Cesium-137	40800	42170		5030	20.0	105	pCi/L	103	75 - 125
Cobalt-60	17800	18660		2230		54.8	pCi/L	105	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-602356/1-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 602356

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03827	U	0.0641	0.0642	1.00	0.111	pCi/L	03/06/23 09:11	03/29/23 20:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*47.8*		*30 - 110*	*03/06/23 09:11*	*03/29/23 20:10*	*1*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-602356/2-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 602356

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	11.79		1.20	1.00	0.118	pCi/L	104	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*478*		*30 - 110*

Lab Sample ID: LCSD 160-602356/3-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 602356

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.01		1.14	1.00	0.107	pCi/L	97	75 - 125	0.33	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*438*		*30 - 110*

Lab Sample ID: MB 160-603697/1-A
Matrix: Water
Analysis Batch: 606320

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603697

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.007206	U	0.0373	0.0373	1.00	0.0874	pCi/L	03/15/23 10:54	04/06/23 15:24	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*9. 89*		*30 - 110*	*032/15/23 10:5.*	*0. 20/ 23 15:6.*	*1*

Lab Sample ID: LCS 160-603697/2-A
Matrix: Water
Analysis Batch: 606320

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603697

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	12.42		1.28	1.00	0.137	pCi/L	110	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*908*		*30 - 110*

Lab Sample ID: LCSD 160-603697/24-A
Matrix: Water
Analysis Batch: 606323

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603697

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.60		1.20	1.00	0.120	pCi/L	102	75 - 125	0.33	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-603697/24-A
Matrix: Water
Analysis Batch: 606323

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603697

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	478		30 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-602360/1-A
Matrix: Water
Analysis Batch: 603871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 602360

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2985	U	0.293	0.294	1.00	0.468	pCi/L	03/06/23 09:48	03/16/23 12:10	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	478		30 - 110	03/06/23 09:48	03/16/23 16:10	1
Y Carrier	478		30 - 110	03/06/23 09:48	03/16/23 16:10	1

Lab Sample ID: LCS 160-602360/2-A
Matrix: Water
Analysis Batch: 603871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 602360

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.11	8.303		1.17	1.00	0.455	pCi/L	102	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	478		30 - 110
Y Carrier	478		30 - 110

Lab Sample ID: LCSD 160-602360/3-A
Matrix: Water
Analysis Batch: 603871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 602360

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.11	9.182		1.28	1.00	0.521	pCi/L	113	75 - 125	0.36	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	438		30 - 110
Y Carrier	478		30 - 110

Lab Sample ID: MB 160-603699/1-A
Matrix: Water
Analysis Batch: 605408

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603699

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3975	U	0.326	0.328	1.00	0.506	pCi/L	03/15/23 11:19	03/29/23 11:57	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-603699/1-A
Matrix: Water
Analysis Batch: 605408

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603699

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	9.89		30 - 110	03/21/23 11:19	03/26/23 11:57	1
Y Carrier	468		30 - 110	03/21/23 11:19	03/26/23 11:57	1

Lab Sample ID: LCS 160-603699/2-A
Matrix: Water
Analysis Batch: 605408

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603699

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.08	9.994		1.34	1.00	0.479	pCi/L	124	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	908		30 - 110
Y Carrier	466		30 - 110

Lab Sample ID: LCSD 160-603699/24-A
Matrix: Water
Analysis Batch: 605413

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603699

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228	8.08	10.63		1.43	1.00	0.565	pCi/L	132	75 - 125	0.23	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	478		30 - 110
Y Carrier	468		30 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-603033/1-A
Matrix: Water
Analysis Batch: 604031

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603033

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1395	U	0.149	0.149	3.00	0.303	pCi/L	03/09/23 13:03	03/17/23 18:29	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	478		30 - 110	03/09/23 13:03	03/17/23 14:69	1
Y Carrier	418		30 - 110	03/09/23 13:03	03/17/23 14:69	1

Lab Sample ID: LCS 160-603033/2-A
Matrix: Water
Analysis Batch: 604031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603033

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Strontium-90	7.35	6.881		0.800	3.00	0.299	pCi/L	94	75 - 125

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	79.8		30 - 110
Y Carrier	46.6		30 - 110

Lab Sample ID: LCSD 160-603033/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 604031 — **Prep Batch: 603033**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.35	7.495		0.858	3.00	0.360	pCi/L	102	75 - 125	0.37	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	40.8		30 - 110
Y Carrier	46.6		30 - 110

Lab Sample ID: MB 160-604379/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 605413 — **Prep Batch: 604379**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1030	U	0.268	0.268	3.00	0.492	pCi/L	03/20/23 13:22	03/29/23 15:59	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	79.8		30 - 110	03/20/23 13:66	03/29/23 15:59	1
Y Carrier	70.8		30 - 110	03/20/23 13:66	03/29/23 15:59	1

Lab Sample ID: LCS 160-604379/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 605413 — **Prep Batch: 604379**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.35	7.405		0.842	3.00	0.323	pCi/L	101	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	45.8		30 - 110
Y Carrier	7/ 8		30 - 110

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-605397/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 606179 — **Prep Batch: 605397**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	81.53	U	151	151	500	263	pCi/L	03/29/23 11:02	04/04/23 16:05	1

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: LCS 160-605397/2-A
Matrix: Water
Analysis Batch: 606179

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605397

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2090	1744		317	500	251	pCi/L	83	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605724/1-A
Matrix: Water
Analysis Batch: 606117

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605724

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.03149	U	0.08996	0.09003	1.00	0.148	pCi/L	03/30/23 15:31	04/04/23 20:40	1

Lab Sample ID: LCS 160-605724/2-A
Matrix: Water
Analysis Batch: 606357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605724

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Uranium-234	12.7	13.25		1.55	1.00	0.113	pCi/L	104	75 - 125
Uranium-238	13.0	13.61		1.58	1.00	0.123	pCi/L	105	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-636	*96*		*30 - 110*

Lab Sample ID: MB 160-605729/1-A
Matrix: Water
Analysis Batch: 605912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605729

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1686	U	0.206	0.207	1.00	0.300	pCi/L	03/30/23 16:34	04/03/23 20:56	1

Lab Sample ID: LCS 160-605729/2-A
Matrix: Water
Analysis Batch: 605927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605729

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Uranium-234	12.7	13.57		1.98	1.00	0.356	pCi/L	107	75 - 125
Uranium-238	13.0	13.66		1.99	1.00	0.311	pCi/L	105	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-636	*34*		*30 - 110*

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Prep Batch: 602356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	PrecSep-21	
MB 160-602356/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-602356/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-602356/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 602360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	PrecSep_0	
MB 160-602360/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-602360/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-602360/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Filtration Batch: 602821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	Filtration	
570-129005-1	BGBMP0003_20230225	Dissolved	Water	Filtration	

Prep Batch: 603033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	PrecSep-7	
MB 160-603033/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-603033/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-603033/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 603697

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	PrecSep-21	602821
MB 160-603697/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-603697/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-603697/24-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 603699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	PrecSep_0	602821
MB 160-603699/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-603699/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-603699/24-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 604032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	Fill_Geo-0	
MB 160-604032/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604032/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 604379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	PrecSep-7	602821
MB 160-604379/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-604379/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Rad

Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	Fill_Geo-0	602821
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	LSC_Dist_Susp	
MB 160-605397/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-605397/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 605627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	Evaporation	
MB 160-605627/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-605627/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-605627/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 605724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Total/NA	Water	ExtChrom	
MB 160-605724/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605724/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 605729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	ExtChrom	602821
MB 160-605729/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605729/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129005-1	BGBMP0003_20230225	Dissolved	Water	Evaporation	602821
MB 160-606326/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606326/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606326/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Client Sample ID: BGBMP0003_20230225

Date Collected: 02/25/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129005-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1900 mL	1900 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	Evaporation			200.04 mL	1.0 g	606326	04/06/23 10:28	MST	EET SL
Dissolved	Analysis	900.0		1			606671	04/10/23 20:47	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			200.00 mL	1.0 g	605627	03/30/23 11:34	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	606123	04/04/23 13:05	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Dissolved	Analysis	901.1		1			605597	03/30/23 05:34	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604032	03/17/23 14:08	SEH	EET SL
Total/NA	Analysis	901.1		1			605209	03/28/23 20:39	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1900 mL	1900 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	PrecSep-21			756.17 mL	1.0 g	603697	03/15/23 10:54	DJP	EET SL
Dissolved	Analysis	903.0		1	1.0 mL	1.0 mL	606324	04/06/23 15:30	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-21			745.46 mL	1.0 g	602356	03/06/23 09:11	DJP	EET SL
Total/NA	Analysis	903.0		1			605412	03/29/23 21:58	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Dissolved	Filtration	Filtration			1900 mL	1900 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	PrecSep_0			756.17 mL	1.0 g	603699	03/15/23 11:19	DJP	EET SL
Dissolved	Analysis	904.0		1			605408	03/29/23 12:04	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			745.46 mL	1.0 g	602360	03/06/23 09:48	DJP	EET SL
Total/NA	Analysis	904.0		1			603870	03/16/23 12:14	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	PrecSep-7			501.58 mL	1.0 g	604379	03/20/23 13:22	DJP	EET SL
Dissolved	Analysis	905		1			605413	03/29/23 16:01	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			501.96 mL	1.0 g	603033	03/09/23 13:03	DJP	EET SL
Total/NA	Analysis	905		1			604030	03/17/23 18:33	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			95.75 mL	1.0 g	605397	03/29/23 11:02	SEH	EET SL
Total/NA	Analysis	906.0		1			606179	04/04/23 17:13	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	ExtChrom			299.7 mL	1.0 mL	605729	03/30/23 16:34	CMM	EET SL
Dissolved	Analysis	A-01-R		1			605926	04/03/23 20:56	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			200.2 mL	1.0 mL	605724	03/30/23 15:31	CMM	EET SL
Total/NA	Analysis	A-01-R		1			606061	04/04/23 20:40	EJS	EET SL
	Instrument ID: ALPHAVISION									

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129005-8
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

3 Client HC Cay & Cadrchler,
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-124005-6

Method	Method Description	Protocol	Laboratory
400,0	Ecb99 & CcH HeA Ecb99 Si nH L HAloHr nslna	M. &	MMp / F
401,1	3i 9lvT 1u7 y mnci dE HT T H MT lmi d9 0E / (	M. &	MMp / F
40u,0	L HAlvT -22) 0E g. 3 (	M. &	MMp / F
40U,0	L HAlvT -226 0E g. 3 (	M. &	MMp / F
405	/ mbenlvT -40 0E g. 3 (	M. &	MMp / F
40) ,0	pdnlvT hpon HC0F / 3 (	M. &	MMp / F
&-01-L	l9onoGlr NdHelvT C& CcH / Gl rmbT i nda(	DmM	MMp / F
MsHGodHnoe	. d GHdHnoehMsHGodHnoe	x oei	MMp / F
M_n8 cdbT	. d GHdHnoehM_ndHr nloe 3 cdbT HnoBdHGca L i 9le & rnlelAi / i GHdHnoe	x oei	MMp / F
glCCWEi o-0	glCCEi oT i ndahx o le-Ecb=nc	x oei	MMp / F
gl0dHnoe	/ HT GC gl0dHnoe	x oei	MMp / F
F/ 3 wDl9nw/ v9G	Dl9nlCHnoe HeA / v9Gl e9loe 0F / 3 (	x oei	MMp / F
. d r / i Gw0	. d GHdHnoeh. d r lGlrHni / i GHdHnoe	x oei	MMp / F
. d r / i G-21	. d GHdHnoeh. d r lGlrHni / i GHdHnoe C21-DHa le-Ecb=nc(	x oei	MMp / F
. d r / i G-7	. d GHdHnoeh. d r lGlrHni / i GHdHnoe C7-DHa le-Ecb=nc(	x oei	MMp / F

Protocol References:

DmMf N,/ , Di GHdhT i eno8Mei dBa
M. & f N/ MesldbeT i enHC. dbni r nloe & Bi er a
x oei f x oei

Laboratory References:

MMp / F f Mvdb8e9 / n, Fovl9h1u715 L lAi dpdHCx odnchMHdnc 3 lnahR m) u0U5hpMF 0u1U(246-65))

Mvdb8e9 3 HC9rli eri

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129005-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129005-1	BGBMP0003_20230225	Water	02/25/23 10:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129005

570-129005 Chain of Custody

Chain of Custody Record for
...ley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
BGBMP0003_20230225	2-25-2023	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230225-1	2-25-2023	1030	TB	WM	3	N	N														x				
																									Field Readings
																									Meter Serial #: EDBPJOUX
																									Time of Readings: 1030
																									DO (mg/L): 20.41
																									pH: 8.15
																									Temp (°C/°F): 44.9
																									TRC (mg/L): 0.00
																									Checked by:
																									Date/Time: 2-25-2023 / 1110
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI ~~#4409815~~ 5701145595
Please mail data to km filer@haleyaldrich.com and post to Total Access Build Ha & Aldrich a AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by:	Company: H&A	Date/Time: 2-27-23 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by: EC	Date/Time: 2-27-23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2, 1.6/15 SC12

SAP COC 2019/2020 VERSION 3

4/12/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Work lab to Hold CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E360.2)	Priority Pollutants-Pesticides+PCBs (E608) Work lab to Hold CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC base cur f	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Work Lab Hold CA	Chlorpyrifos, Diazinon (E625.2) Work lab to Hold A	Asbestos (E100.2)	
								1-1L Poly	1 500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
1 BGBMP0003_20230225	2-25-2023	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3 TB_20230225-2	2-25-2023	1030	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] Months

Special Instructions/QC Requirements & Comments: ECI #~~44003916~~ 570145795
Please email data to kmiller@haleyald rich com nd post to Total Access Bill to Haley & Al rich at AP@hale aldr ch co Report Level I Dat Package and pro de EDD d ssc ved samples are to be filtered w thin 24 hours of rece pt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H.A	Date/Time: 2-27-23/1120	Receiv	2/27/23 1120 EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Receiv	EC	Date/Time: 2-27-23 18:00
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129005-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fil_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved		Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X		3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		02/28/23 10 18	EC			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No
570-208625

Containers

Count	Container Type	Preservative
1	Amber Glass 1 liter - unpreserved	None
2	Plastic 2 5 Gallon	None

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM. Patel Virendra	Carrier Tracking No(s):	COC No. 570-208683 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus com	State of Origin California	Page: Page 1 of 1
Company: EMSL Analytical Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-7
Address: 520 Mission Street,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A HCL, B NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100 2)/ Asbestos 100 2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1333				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208683

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100 2)/ Asbestos 100 2	Level IV package needed

Eurofins Calscience
2841 Dow Avenue Suite 100
Tustin CA 92780
Phone. 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel Virendra	Carrier Tracking No(s)	COC No.: 570-208684 1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra Patel@et.eurofinsus com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129005-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A - HCL
B NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K EDTA
L - EDA
M Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGMP0003_20230225 (570-129005-1)	2/25/23	10 30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II III, IV, Other (specify) Primary Deliverable Rank. 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by:	Date.	Time.	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time: 2/28/23 1340	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208465.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230225-2 (570-129005-3)	2/25/23	10:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3-1-23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - T026 T027

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129005-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			Preservation Codes:
City: Earth City	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
State, Zip: MO, 63045	PO #:			Other:
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 57014595			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
BGMP0003_20230225 (570-129005-1)	2/25/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: FED EX	Date/Time: 02/28/23 10:18	Company: EC	Received by: FED EX
Relinquished by:	Date/Time:	Company	Received by: Sierra Worthington
Relinquished by:	Date/Time:	Company	Received by:

Date/Time	Company
Date/Time: MAR 0 1 2023	Company: CCCLCTASR
Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129005-8

Login Number: 129005
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129005-8

Login Number: 129005
List Number: 4
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 03/02/23 12:00 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129044-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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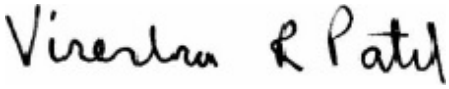
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Qualifiers

GC/MS mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Sep i mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits
LR	LCS/LCSD recovery below method control limits

GC Sep i mV O

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

HPLC/IC

Qualifier	Qualifier DesAriction
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier DesAriction
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chep istry

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent

Glossary (Continued)

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129044-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129044-1

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7º C and 3.0º C.

GC/MS VOA
Method 624.1: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 570-307642 recovered outside control limits for the following analyte: Ethanol Laboratory control sample / laboratory control sample duplicate (LCS/LCSD) percent recovery is in control for affected analytes.

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: TB_20230226-1 (570-129044-2). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-307642.

Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-307594.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-307149 and analytical batch 570-307279 recovered outside control limits for the following analytes: 2,4-Dinitrotoluene, 4,6-Dinitro-2-methylphenol, Di-n-octyl phthalate and Di-n-butyl phthalate. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-307608 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: EPBMC_20230226 (570-129044-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following sample was received and analyzed outside of holding time: EPBMC_20230226 (570-129044-1).

Method 218.6: The following samples were received, filtered, preserved and analyzed outside of holding time: EPBMC_20230226 (570-129044-1) and (570-129045-T-1-A).

Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-307135 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Sulfate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 300.0: Dilutions were performed for the following samples due to sample matrix properties: EPBMC_20230226 (570-129044-1).

Job ID: 570-129044-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-307628 and analytical batch 570-307918 contained Chromium and Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-308039 and analytical batch 570-308100 were outside control limits for Antimony. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 200.8: The method blank for preparation batch 570-308039 and analytical batch 570-308100 contained Chromium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPBMC_20230226 (570-129044-1), (570-129044-P-1 MS) and (570-129044-P-1 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBMC_20230226 (570-129044-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: Insufficient sample volume was available to perform sample duplicate (DUP) associated with analytical batch 570-307843.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-308085.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Client Sample ID: EPBMC_20230226 — Lab Sample ID: 570-129044-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
C13-C28	0.049	J,DX	0.050	0.036	mg/L	1		8015B	Total/NA
Hexavalent chromium	0.024	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.029	J,DX BU	0.20	0.019	ug/L	1		218.6	Dissolved
Chloride	38		2.0	0.72	mg/L	2		300.0	Total/NA
Fluoride	0.43		0.20	0.092	mg/L	2		300.0	Total/NA
Nitrate as N	2.7		0.20	0.039	mg/L	2		300.0	Total/NA
Sulfate - DL	290		10	2.4	mg/L	10		300.0	Total/NA
Nitrate Nitrite as N	2.7		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	240	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	220	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Aluminum	9600		150	86	ug/L	10		200.8	Total Recoverable
Arsenic	3.6		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	120		1.0	0.17	ug/L	1		200.8	Total Recoverable
Beryllium	0.42	J,DX	0.50	0.26	ug/L	1		200.8	Total Recoverable
Cadmium	0.14	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	15	MB	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	8.4		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	16000	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	290		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	11		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	6.2		1.0	0.12	ug/L	1		200.8	Total Recoverable
Zinc	46		20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	3.2		2.0	0.52	ug/L	1		200.8	Total Recoverable
Thallium	0.17	J,DX	1.0	0.11	ug/L	1		200.8	Total Recoverable
Cobalt	6.8		1.0	0.14	ug/L	1		200.8	Total Recoverable
Aluminum	13	J,DX BU	15	8.6	ug/L	1		200.8	Dissolved
Arsenic	0.95	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	46	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.24	J,DX BU MB	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	1.5	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	21	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	5.2	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	0.83	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	0.91	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	3.0	BU	2.0	0.52	ug/L	1		200.8	Dissolved
Cobalt	0.29	J,DX BU	1.0	0.14	ug/L	1		200.8	Dissolved
Cr (III)	0.015	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPBMC_20230226 (Continued)
Lab Sample ID: 570-129044-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ammonia	0.032	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	380		0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	1000		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	800		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	700		10	8.3	mg/L	1		SM 2540D	Total/NA
Settleable Solids	1.5		0.10	0.10	mL/L	1		SM 2540F	Total/NA
Carbon, Total Organic	12		2.0	1.1	mg/L	4		SM 5310D	Total/NA
MBAS	0.057	J,DX	0.20	0.050	mg/L	1		SM 5540C	Total/NA
Clay (less than 0.00391 mm)	20.06		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	0.66		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	73.61		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	93.67		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	5.67		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: TB_20230226-1
Lab Sample ID: 570-129044-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 17:32	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 17:32	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 17:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 17:32	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 17:32	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 17:32	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 17:32	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 17:32	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 17:32	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 17:32	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 17:32	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 17:32	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 17:32	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 17:32	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 17:32	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 17:32	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 17:32	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 17:32	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 17:32	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 17:32	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 17:32	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 17:32	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 17:32	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 17:32	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 17:32	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 17:32	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 17:32	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 17:32	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 17:32	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 17:32	1
Acetone	ND		20	16	ug/L			02/28/23 17:32	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 17:32	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 17:32	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 17:32	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 17:32	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 17:32	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 17:32	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 17:32	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 17:32	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 17:32	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 17:32	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 17:32	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 17:32	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 17:32	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 17:32	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 17:32	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 17:32	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 17:32	1
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 17:32	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 17:32	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 17:32	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 17:32	1
Ethanol	ND	BA	100	65	ug/L			02/28/23 17:32	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 17:32	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 17:32	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 17:32	1
Isopropanol	ND		250	120	ug/L			02/28/23 17:32	1
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 17:32	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 17:32	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 17:32	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 17:32	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 17:32	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 17:32	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 17:32	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 17:32	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 17:32	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 17:32	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 17:32	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 17:32	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 17:32	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 17:32	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 17:32	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 17:32	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 17:32	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 17:32	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 17:32	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 17:32	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 17:32	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 17:32	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 17:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*60 - 140*		*02/28/23 17:32*	*1*
4-Bromofluorobenzene (Surr)	*97*		*60 - 140*		*02/28/23 17:32*	*1*
Dibromofluoromethane (Surr)	*85*		*60 - 140*		*02/28/23 17:32*	*1*
Toluene-d8 (Surr)	*97*		*60 - 140*		*02/28/23 17:32*	*1*

Client Sample ID: TB_20230226-1
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 15:42	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 15:42	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 15:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 15:42	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 15:42	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 15:42	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 15:42	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 15:42	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB_20230226-1
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 15:42	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 15:42	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 15:42	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 15:42	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 15:42	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 15:42	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 15:42	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 15:42	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 15:42	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 15:42	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 15:42	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 15:42	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 15:42	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 15:42	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 15:42	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 15:42	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 15:42	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 15:42	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 15:42	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 15:42	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 15:42	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 15:42	1
Acetone	ND		20	16	ug/L			02/28/23 15:42	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 15:42	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 15:42	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 15:42	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 15:42	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 15:42	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 15:42	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 15:42	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 15:42	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 15:42	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 15:42	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 15:42	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 15:42	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 15:42	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 15:42	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 15:42	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 15:42	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 15:42	1
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 15:42	1
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 15:42	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 15:42	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 15:42	1
Ethanol	ND	BA	100	65	ug/L			02/28/23 15:42	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 15:42	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 15:42	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 15:42	1
Isopropanol	ND		250	120	ug/L			02/28/23 15:42	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB_20230226-1
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 15:42	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 15:42	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 15:42	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 15:42	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 15:42	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 15:42	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 15:42	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 15:42	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 15:42	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 15:42	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 15:42	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 15:42	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 15:42	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 15:42	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 15:42	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 15:42	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 15:42	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 15:42	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 15:42	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 15:42	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 15:42	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 15:42	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 15:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*60 - 140*		*02/28/23 15:42*	*1*
4-Bromofluorobenzene (Surr)	*92*		*60 - 140*		*02/28/23 15:42*	*1*
Dibromofluoromethane (Surr)	*91*		*60 - 140*		*02/28/23 15:42*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*02/28/23 15:42*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			02/28/23 18:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*106*		*67 - 133*		*02/28/23 18:04*	*1*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND	LR	0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:55	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:55	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.089	ug/L		02/28/23 05:19	02/28/23 16:55	1
1,3-Dichlorobenzene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:55	1
1,4-Dichlorobenzene	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:55	1
2,4,6-Trichlorophenol	ND		0.98	0.14	ug/L		02/28/23 05:19	02/28/23 16:55	1
2,4-Dichlorophenol	ND		0.98	0.13	ug/L		02/28/23 05:19	02/28/23 16:55	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:55	1
2,4-Dinitrophenol	ND		4.9	4.2	ug/L		02/28/23 05:19	02/28/23 16:55	1
2,4-Dinitrotoluene	ND	LQ	0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:55	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		02/28/23 05:19	02/28/23 16:55	1
2-Chloronaphthalene	ND	BA	0.20	0.14	ug/L		02/28/23 05:19	02/28/23 16:55	1
2-Chlorophenol	ND		0.20	0.093	ug/L		02/28/23 05:19	02/28/23 16:55	1
2-Nitrophenol	ND		4.9	3.4	ug/L		02/28/23 05:19	02/28/23 16:55	1
3,3'-Dichlorobenzidine	ND		4.9	2.9	ug/L		02/28/23 05:19	02/28/23 16:55	1
4,6-Dinitro-2-methylphenol	ND	LQ	4.9	4.4	ug/L		02/28/23 05:19	02/28/23 16:55	1
4-Bromophenyl phenyl ether	ND		0.20	0.097	ug/L		02/28/23 05:19	02/28/23 16:55	1
4-Chloro-3-methylphenol	ND		0.98	0.13	ug/L		02/28/23 05:19	02/28/23 16:55	1
4-Chlorophenyl phenyl ether	ND		0.20	0.16	ug/L		02/28/23 05:19	02/28/23 16:55	1
4-Nitrophenol	ND		4.9	3.3	ug/L		02/28/23 05:19	02/28/23 16:55	1
Acenaphthene	ND		0.20	0.096	ug/L		02/28/23 05:19	02/28/23 16:55	1
Acenaphthylene	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:55	1
Anthracene	ND		0.20	0.082	ug/L		02/28/23 05:19	02/28/23 16:55	1
Benzidine	ND	BA	4.9	2.6	ug/L		02/28/23 05:19	02/28/23 16:55	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		02/28/23 05:19	02/28/23 16:55	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		02/28/23 05:19	02/28/23 16:55	1
Benzo[b]fluoranthene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:55	1
Benzo[g,h,i]perylene	ND		0.20	0.10	ug/L		02/28/23 05:19	02/28/23 16:55	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:55	1
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:55	1
Bis(2-chloroethoxy)methane	ND		0.20	0.10	ug/L		02/28/23 05:19	02/28/23 16:55	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		02/28/23 05:19	02/28/23 16:55	1
Bis(2-ethylhexyl) phthalate	ND		4.9	3.5	ug/L		02/28/23 05:19	02/28/23 16:55	1
Butyl benzyl phthalate	ND		0.98	0.66	ug/L		02/28/23 05:19	02/28/23 16:55	1
Chrysene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:55	1
Dibenz(a,h)anthracene	ND		0.20	0.15	ug/L		02/28/23 05:19	02/28/23 16:55	1
Diethyl phthalate	ND		2.0	0.18	ug/L		02/28/23 05:19	02/28/23 16:55	1
Dimethyl phthalate	ND		2.0	0.095	ug/L		02/28/23 05:19	02/28/23 16:55	1
Di-n-butyl phthalate	ND	LQ	2.0	1.8	ug/L		02/28/23 05:19	02/28/23 16:55	1
Di-n-octyl phthalate	ND	LQ	2.9	0.52	ug/L		02/28/23 05:19	02/28/23 16:55	1
Fluoranthene	ND		0.20	0.098	ug/L		02/28/23 05:19	02/28/23 16:55	1
Fluorene	ND		0.20	0.092	ug/L		02/28/23 05:19	02/28/23 16:55	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:55	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		02/28/23 05:19	02/28/23 16:55	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		02/28/23 05:19	02/28/23 16:55	1
Hexachloroethane	ND		0.20	0.12	ug/L		02/28/23 05:19	02/28/23 16:55	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 16:55	1
Isophorone	ND		0.20	0.096	ug/L		02/28/23 05:19	02/28/23 16:55	1
Naphthalene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 16:55	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	ND		0.20	0.14	ug/L		02/28/23 05:19	02/28/23 16:55	1
N-Nitrosodimethylamine	ND		0.20	0.18	ug/L		02/28/23 05:19	02/28/23 16:55	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		02/28/23 05:19	02/28/23 16:55	1
N-Nitrosodiphenylamine	ND		0.20	0.10	ug/L		02/28/23 05:19	02/28/23 16:55	1
Pentachlorophenol	ND		0.98	0.82	ug/L		02/28/23 05:19	02/28/23 16:55	1
Phenanthrene	ND		0.20	0.16	ug/L		02/28/23 05:19	02/28/23 16:55	1
Phenol	ND		0.98	0.51	ug/L		02/28/23 05:19	02/28/23 16:55	1
Pyrene	ND		0.20	0.084	ug/L		02/28/23 05:19	02/28/23 16:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*86*		*28 - 127*	*02/28/23 05:19*	*02/28/23 16:55*	*1*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*	*02/28/23 05:19*	*02/28/23 16:55*	*1*
2-Fluorophenol	*41*		*17 - 120*	*02/28/23 05:19*	*02/28/23 16:55*	*1*
Nitrobenzene-d5	*77*		*27 - 120*	*02/28/23 05:19*	*02/28/23 16:55*	*1*
Phenol-d6 (Surr)	*27*		*10 - 120*	*02/28/23 05:19*	*02/28/23 16:55*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*02/28/23 05:19*	*02/28/23 16:55*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/07/23 21:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*70*		*20 - 144*		*03/07/23 21:08*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	0.049	J,DX	0.050	0.036	mg/L		03/03/23 17:08	03/13/23 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*97*		*53 - 151*	*03/03/23 17:08*	*03/13/23 16:12*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.024	J,DX BU BV	0.20	0.019	ug/L			02/28/23 03:43	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.029	J,DX BU	0.20	0.019	ug/L			02/28/23 06:30	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**38**		2.0	0.72	mg/L			02/28/23 02:26	2
Nitrite as N	ND		0.20	0.086	mg/L			02/28/23 02:26	2
Fluoride	**0.43**		0.20	0.092	mg/L			02/28/23 02:26	2
Nitrate as N	**2.7**		0.20	0.039	mg/L			02/28/23 02:26	2

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: EPA 300.0 - Anions, Ion Chromatography - DL

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**290**		10	2.4	mg/L			02/28/23 02:43	10

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/28/23 22:56	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	2.7		0.10	0.020	mg/L			03/03/23 14:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	240	J,DX	500	3.5	ug/L		02/28/23 08:01	02/28/23 20:24	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	220	J,DX BU	500	3.5	ug/L			02/28/23 23:39	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**9600**		150	86	ug/L		02/28/23 10:21	02/28/23 14:53	10
Silver	ND		1.0	0.23	ug/L		02/28/23 10:21	02/28/23 14:36	1
Arsenic	**3.6**		1.0	0.16	ug/L		02/28/23 10:21	02/28/23 14:36	1
Barium	**120**		1.0	0.17	ug/L		02/28/23 10:21	02/28/23 14:36	1
Beryllium	**0.42**	**J,DX**	0.50	0.26	ug/L		02/28/23 10:21	02/28/23 14:36	1
Cadmium	**0.14**	**J,DX**	1.0	0.13	ug/L		02/28/23 10:21	02/28/23 14:36	1
Chromium	**15**	**MB**	2.0	0.14	ug/L		02/28/23 10:21	02/28/23 14:36	1
Copper	**8.4**		2.0	0.32	ug/L		02/28/23 10:21	02/28/23 14:36	1
Iron	**16000**	**MB**	20	3.7	ug/L		02/28/23 10:21	02/28/23 14:36	1
Manganese	**290**		1.0	0.41	ug/L		02/28/23 10:21	02/28/23 14:36	1
Nickel	**11**		2.0	0.17	ug/L		02/28/23 10:21	02/28/23 14:36	1
Lead	**6.2**		1.0	0.12	ug/L		02/28/23 10:21	02/28/23 14:36	1
Antimony	ND		2.0	0.36	ug/L		02/28/23 10:21	02/28/23 14:36	1
Zinc	**46**		20	2.8	ug/L		02/28/23 10:21	02/28/23 14:36	1
Selenium	**3.2**		2.0	0.52	ug/L		02/28/23 10:21	02/28/23 14:36	1
Thallium	**0.17**	**J,DX**	1.0	0.11	ug/L		02/28/23 10:21	02/28/23 14:36	1
Cobalt	**6.8**		1.0	0.14	ug/L		02/28/23 10:21	02/28/23 14:36	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**13**	**J,DX BU**	15	8.6	ug/L			03/01/23 14:35	1
Silver	ND	BU	1.0	0.23	ug/L			03/01/23 14:35	1
Arsenic	**0.95**	**J,DX BU**	1.0	0.16	ug/L			03/01/23 14:35	1
Barium	**46**	**BU**	1.0	0.17	ug/L			03/01/23 14:35	1
Beryllium	ND	BU	0.50	0.26	ug/L			03/01/23 14:35	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/01/23 14:35	1
Chromium	**0.24**	**J,DX BU MB**	2.0	0.14	ug/L			03/01/23 14:35	1
Copper	**1.5**	**J,DX BU**	2.0	0.32	ug/L			03/01/23 14:35	1
Iron	**21**	**BU**	20	3.7	ug/L			03/01/23 14:35	1
Manganese	**5.2**	**BU**	1.0	0.41	ug/L			03/01/23 14:35	1
Nickel	**0.83**	**J,DX BU**	2.0	0.17	ug/L			03/01/23 14:35	1
Lead	ND	BU	1.0	0.12	ug/L			03/01/23 14:35	1
Antimony	**0.91**	**J,DX BU**	2.0	0.36	ug/L			03/01/23 14:35	1
Zinc	ND	BU	20	2.8	ug/L			03/01/23 14:35	1
Selenium	**3.0**	**BU**	2.0	0.52	ug/L			03/01/23 14:35	1
Cobalt	**0.29**	**J,DX BU**	1.0	0.14	ug/L			03/01/23 14:35	1
Thallium	ND	BU	1.0	0.11	ug/L			03/01/23 14:35	1

General Chemistry

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		1.0	0.52	mg/L		03/01/23 14:04	03/02/23 12:27	1
Cr (III) (EPA 218.6 CR3)	**0.015**	**J,DX**	0.050	0.0030	mg/L			03/06/23 11:03	1
Ammonia (EPA 350.1)	**0.032**	**J,DX**	0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:52	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/03/23 20:26	1
Turbidity (SM 2130B)	**380**		0.05	0.05	NTU			02/27/23 23:00	1
Total Dissolved Solids (SM 2540C)	**800**		10	8.7	mg/L			03/02/23 16:27	1
Total Suspended Solids (SM 2540D)	**700**		10	8.3	mg/L			03/03/23 18:43	1
Carbon, Total Organic (SM 5310D)	**12**		2.0	1.1	mg/L			03/08/23 22:12	4
MBAS (SM 5540C)	**0.057**	**J,DX**	0.20	0.050	mg/L		02/27/23 20:28	02/27/23 21:59	1
Biochemical Oxygen Demand (SM5210B)	ND		2.0	1.0	mg/L			02/27/23 21:33	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**1000**		1.0	1.0	umhos/cm			03/08/23 17:31	1
Settleable Solids (SM 2540F)	**1.5**		0.10	0.10	mL/L			02/27/23 20:30	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

General Chemistry - Dissolved

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			03/06/23 11:03	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**20.06**		0.01	0.01	%			03/14/23 14:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/14/23 14:34	1
Fine Sand (0.125 to 0.25mm)	**0.66**		0.01	0.01	%			03/14/23 14:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/14/23 14:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/14/23 14:34	1
Silt (0.00391 to 0.0625mm)	**73.61**		0.01	0.01	%			03/14/23 14:34	1
Total Silt and Clay (0 to 0.0626mm)	**93.67**		0.01	0.01	%			03/14/23 14:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/14/23 14:34	1
Very Fine Sand (0.0625 to 0.125 mm)	**5.67**		0.01	0.01	%			03/14/23 14:34	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

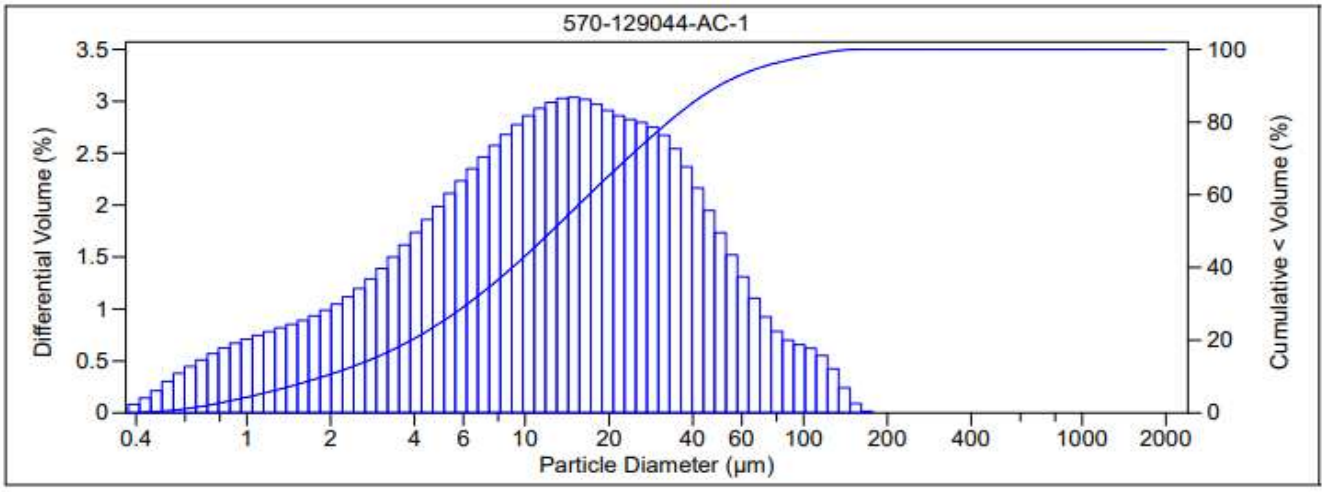
Haley & Aldrich, Inc.

Date Sampled:	02/26/23
Date Received:	02/27/23
Work Order No:	570-129044
Date Analyzed:	03/14/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBMC_20230226		NA	0.021

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.66	5.67	73.61	20.06	93.67



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

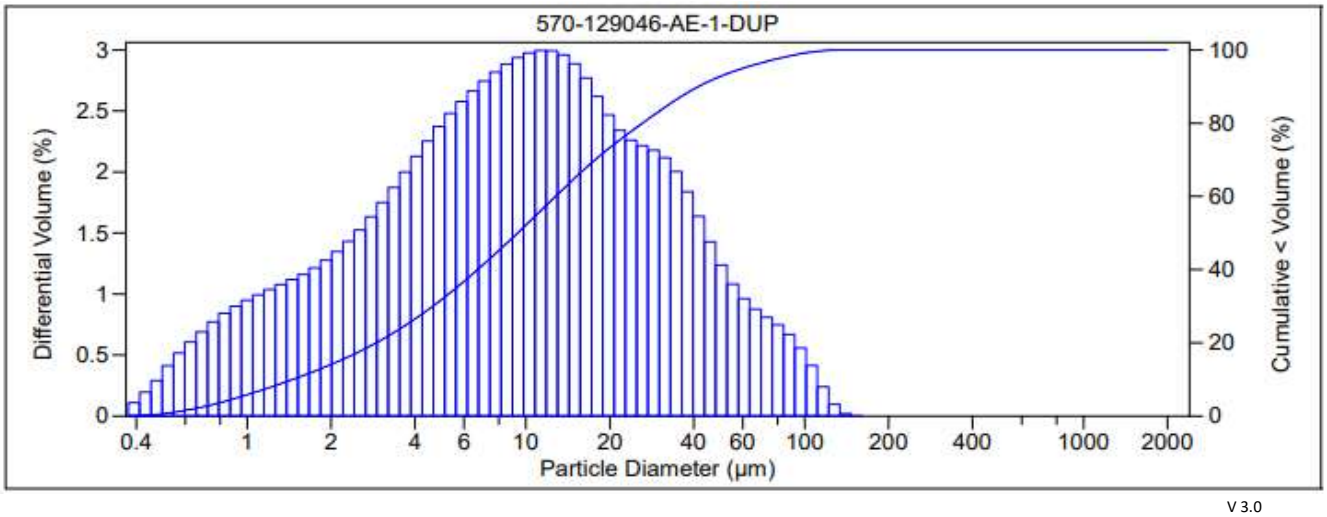
Haley & Aldrich, Inc.

Date Sampled:	02/26/23
Date Received:	02/27/23
Work Order No:	570-129046
Date Analyzed:	03/14/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230226		NA	0.017

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.09	4.50	69.41	26.00	95.41



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

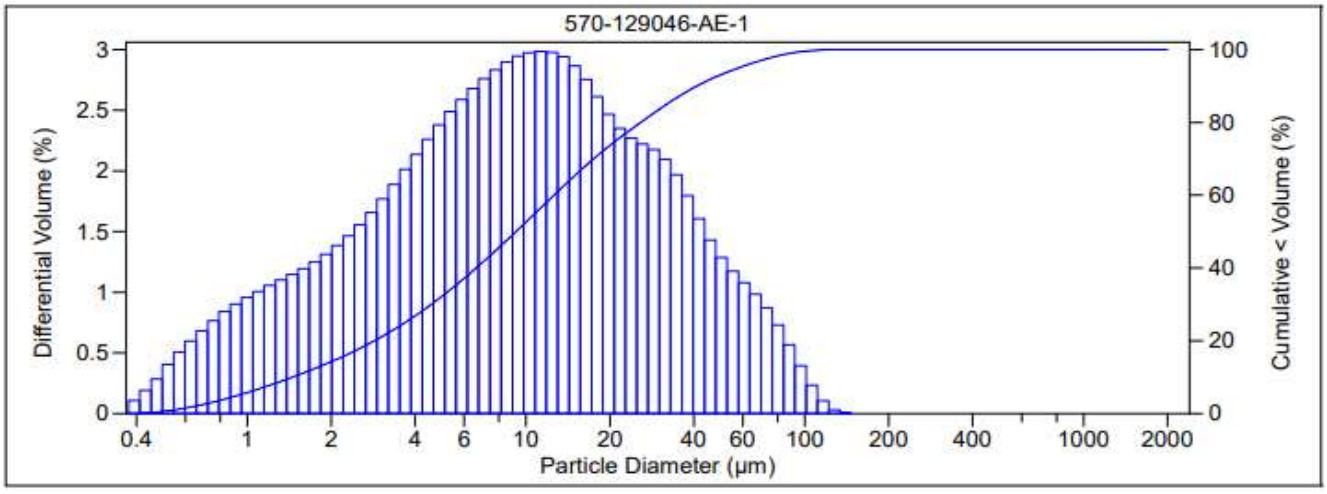
Haley & Aldrich, Inc.

Date Sampled:	02/26/23
Date Received:	02/27/23
Work Order No:	570-129046
Date Analyzed:	03/14/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

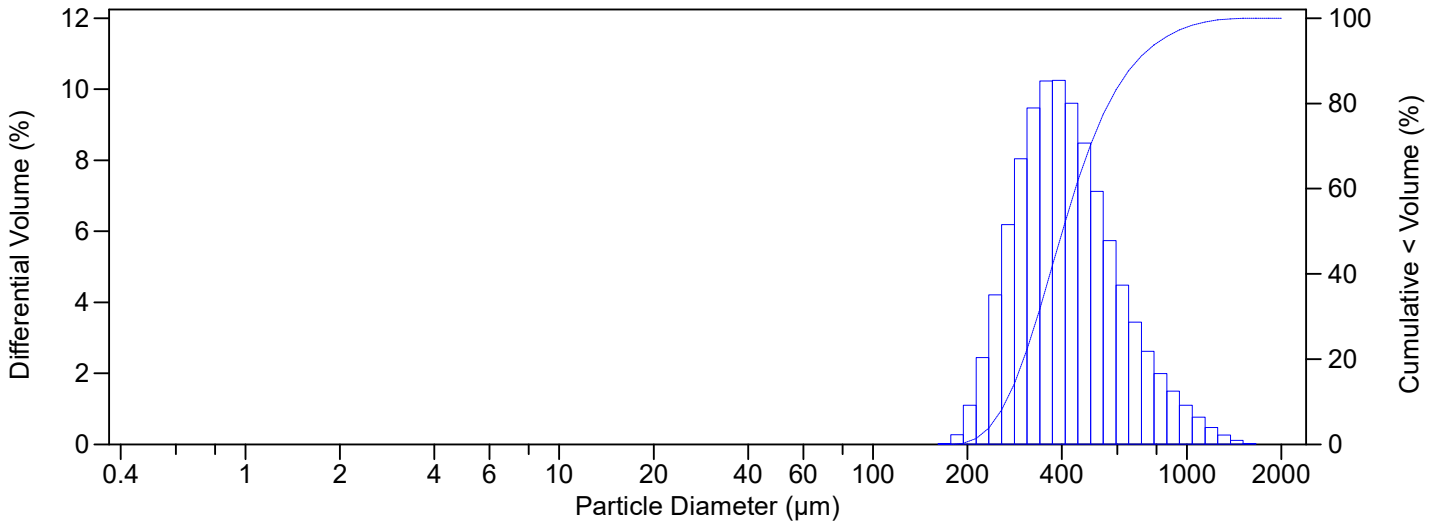
Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230226		NA	0.016

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.03	4.07	69.58	26.32	95.90



V 3.0

File name:	C:\LS13320\STD SAND_14 Mar 2023_15.23.15.$ls		
	STD SAND_14 Mar 2023_15.23.15.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	6		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.73%		
LS 13 320	Aqueous Liquid Module		
Start time:	15:22 14 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_14 Mar 2023_15.23.15.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	448.8 µm	S.D.:	189.4 µm
Median:	401.6 µm	Variance:	35886 µm^2
Mean/Median ratio:	1.117	Skewness:	1.667 Right skewed
Mode:	391.0 µm	Kurtosis:	3.705 Leptokurtic

d_{10}: 264.8 µm d_{50}: 401.6 µm d_{90}: 696.1 µm

Folk and Ward Statistics (Phi)

Mean:	1.28	Median:	1.32	Deviation:	0.54
Skewness:	-0.14	Kurtosis:	1.02		

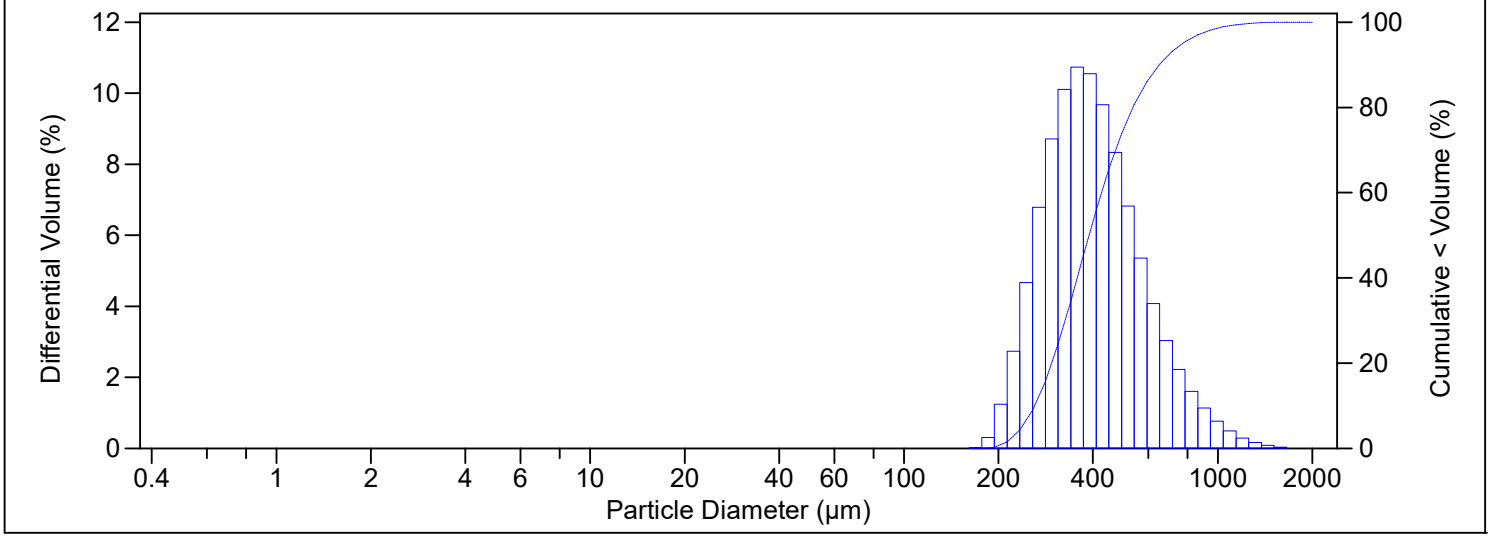
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
240.4 µm	288.1 µm	318.3 µm	366.7 µm	401.6 µm	525.3 µm	605.4 µm	835.4 µm

Particle Diameter µm	STD SAND _14 Mar 2023_15.23 .15.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.78
250	64.5
500	26.6
1000	2.14
2000	

STD SAND_14 Mar 2023_15.23.15.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.48
0.412	0	22.73	0	1255	0.27
0.452	0	24.95	0	1377	0.12
0.496	0	27.39	0	1512	0.026
0.545	0	30.07	0	1660	0.0014
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.017		
3.206	0	176.9	0.27		
3.519	0	194.2	1.10		
3.863	0	213.2	2.45		
4.241	0	234.1	4.21		
4.656	0	256.9	6.19		
5.111	0	282.1	8.05		
5.611	0	309.6	9.47		
6.159	0	339.9	10.2		
6.761	0	373.1	10.3		
7.422	0	409.6	9.61		
8.148	0	449.7	8.48		
8.944	0	493.6	7.12		
9.819	0	541.9	5.74		
10.78	0	594.9	4.48		
11.83	0	653.0	3.44		
12.99	0	716.9	2.62		
14.26	0	786.9	2.00		
15.65	0	863.9	1.50		
17.18	0	948.3	1.10		
18.86	0	1041	0.76		

File name:	C:\LS13320\STD SAND_14 Mar 2023_15.49.46.$ls		
	STD SAND_14 Mar 2023_15.49.46.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	8		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.67%		
LS 13 320	Aqueous Liquid Module		
Start time:	15:48 14 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	11%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_14 Mar 2023_15.49.46.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	430.5 µm	S.D.:	174.0 µm
Median:	389.3 µm	Variance:	30293 µm^2
Mean/Median ratio:	1.106	Skewness:	1.746 Right skewed
Mode:	356.1 µm	Kurtosis:	4.555 Leptokurtic

d_{10}: 260.7 µm d_{50}: 389.3 µm d_{90}: 650.8 µm

Folk and Ward Statistics (Phi)

Mean:	1.33	Median:	1.36	Deviation:	0.51
Skewness:	-0.13	Kurtosis:	1.01		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
237.4 µm	282.8 µm	311.2 µm	356.6 µm	389.3 µm	501.4 µm	574.3 µm	773.8 µm

Particle Diameter µm	STD SAND _14 Mar 2023_15.49 .46.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.56
250	67.2
500	23.8
1000	1.41
2000	

STD SAND_14 Mar 2023_15.49.46.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.29
0.412	0	22.73	0	1255	0.16
0.452	0	24.95	0	1377	0.089
0.496	0	27.39	0	1512	0.031
0.545	0	30.07	0	1660	0.0027
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.019		
3.206	0	176.9	0.31		
3.519	0	194.2	1.24		
3.863	0	213.2	2.74		
4.241	0	234.1	4.67		
4.656	0	256.9	6.79		
5.111	0	282.1	8.72		
5.611	0	309.6	10.1		
6.159	0	339.9	10.7		
6.761	0	373.1	10.6		
7.422	0	409.6	9.67		
8.148	0	449.7	8.34		
8.944	0	493.6	6.82		
9.819	0	541.9	5.36		
10.78	0	594.9	4.08		
11.83	0	653.0	3.04		
12.99	0	716.9	2.23		
14.26	0	786.9	1.61		
15.65	0	863.9	1.13		
17.18	0	948.3	0.77		
18.86	0	1041	0.49		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-129044-1	EPBMC_20230226	89	97	85	97
570-129044-2	TB_20230226-1	89	92	91	101
LCS 570-307642/1003	Lab Control Sample	94	98	95	100
LCSD 570-307642/4	Lab Control Sample Dup	94	98	96	98
MB 570-307642/6	Method Blank	90	95	96	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		14DCBTN
Lab Sample ID	Client Sample ID	(67-133)
570-129044-1	EPBMC_20230226	106
LCS 570-307594/4	Lab Control Sample	95
LCSD 570-307594/5	Lab Control Sample Dup	99
MB 570-307594/7	Method Blank	101

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-129044-1	EPBMC_20230226	86	69	41	77	27	76
LCS 570-307149/2-A	Lab Control Sample	107	84	48	76	34	106
LCSD 570-307149/3-A	Lab Control Sample Dup	95	69	44	66	31	86
MB 570-307149/1-A	Method Blank	81	60	42	68	29	78

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(20-144)
570-129044-1	EPBMC_20230226	70

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**BFB1 (20-144)**
LCS 570-309605/3	Lab Control Sample	87
LCSD 570-309605/4	Lab Control Sample Dup	86
MB 570-309605/5	Method Blank	64

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**OTCSN1 (53-151)**
570-129044-1	EPBMC_20230226	97
LCS 570-308878/2-A	Lab Control Sample	99
LCSD 570-308878/3-A	Lab Control Sample Dup	110
MB 570-308878/1-A	Method Blank	105

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-307642/6
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 12:54	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 12:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 12:54	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 12:54	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 12:54	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 12:54	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 12:54	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 12:54	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 12:54	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 12:54	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 12:54	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 12:54	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 12:54	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 12:54	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 12:54	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 12:54	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 12:54	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 12:54	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 12:54	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 12:54	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 12:54	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 12:54	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 12:54	1
Acetone	ND		20	16	ug/L			02/28/23 12:54	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 12:54	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 12:54	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 12:54	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 12:54	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 12:54	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 12:54	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 12:54	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 12:54	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 12:54	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 12:54	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 12:54	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 12:54	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-307642/6
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 12:54	1
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 12:54	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Ethanol	ND		100	65	ug/L			02/28/23 12:54	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 12:54	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 12:54	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Isopropanol	ND		250	120	ug/L			02/28/23 12:54	1
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 12:54	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 12:54	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 12:54	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 12:54	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 12:54	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 12:54	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 12:54	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 12:54	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 12:54	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 12:54	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 12:54	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 12:54	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 12:54	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 12:54	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 12:54	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 12:54	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 12:54	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 12:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*60 - 140*		*02/28/23 12:54*	*1*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*02/28/23 12:54*	*1*
Dibromofluoromethane (Surr)	*96*		*60 - 140*		*02/28/23 12:54*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*02/28/23 12:54*	*1*

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.5		ug/L		105	60 - 140
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.1		ug/L		101	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.5		ug/L		115	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloroethane	10.0	10.4		ug/L		104	70 - 130
1,1-Dichloroethene	10.0	10.8		ug/L		108	50 - 150
1,1-Dichloropropene	10.0	11.1		ug/L		111	60 - 140
1,2,3-Trichlorobenzene	10.0	11.1		ug/L		111	60 - 140
1,2,3-Trichloropropane	10.0	9.85		ug/L		99	60 - 140
1,2,4-Trichlorobenzene	10.0	10.9		ug/L		109	60 - 140
1,2,4-Trimethylbenzene	10.0	10.3		ug/L		103	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	9.21		ug/L		92	60 - 140
1,2-Dibromoethane	10.0	10.6		ug/L		106	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	11.0		ug/L		110	60 - 140
1,2-Dichlorobenzene	10.0	10.7		ug/L		107	65 - 135
1,2-Dichloroethane	10.0	9.48		ug/L		95	70 - 130
1,2-Dichloropropane	10.0	10.5		ug/L		105	35 - 165
1,3,5-Trimethylbenzene	10.0	10.8		ug/L		108	60 - 140
1,3-Dichlorobenzene	10.0	11.0		ug/L		110	70 - 130
1,3-Dichloropropane	10.0	10.8		ug/L		108	60 - 140
1,4-Dichlorobenzene	10.0	10.8		ug/L		108	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	11.2		ug/L		112	60 - 140
2,2-Dichloropropane	10.0	11.3		ug/L		113	60 - 140
2-Butanone (MEK)	10.0	9.16		ug/L		92	60 - 140
2-Chloroethyl vinyl ether	10.0	8.35		ug/L		83	1 - 225
2-Chlorotoluene	10.0	10.4		ug/L		104	60 - 140
2-Hexanone	10.0	9.57		ug/L		96	60 - 140
4-Chlorotoluene	10.0	10.3		ug/L		103	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	9.75		ug/L		98	60 - 140
Acetone	10.0	ND		ug/L		110	60 - 140
Acrolein	20.0	19.6		ug/L		98	60 - 140
Acrylonitrile	10.0	9.84		ug/L		98	60 - 140
Benzene	10.0	10.9		ug/L		109	65 - 135
Bromobenzene	10.0	10.9		ug/L		109	60 - 140
Bromochloromethane	10.0	10.8		ug/L		108	60 - 140
Bromodichloromethane	10.0	10.4		ug/L		104	65 - 135
Bromoform	10.0	11.1		ug/L		111	70 - 130
Bromomethane	10.0	9.20		ug/L		92	15 - 185
Carbon disulfide	10.0	11.7		ug/L		117	60 - 140
Carbon tetrachloride	10.0	10.7		ug/L		107	70 - 130
Chlorobenzene	10.0	10.9		ug/L		109	65 - 135
Chloroethane	10.0	11.4		ug/L		114	40 - 160
Chloroform	10.0	9.95		ug/L		99	70 - 135
Chloromethane	10.0	8.96		ug/L		90	1 - 205
cis-1,2-Dichloroethene	10.0	10.7		ug/L		107	60 - 140
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	25 - 175
Cyclohexane	10.0	11.5		ug/L		115	60 - 140
Dibromochloromethane	10.0	10.8		ug/L		108	70 - 135
Dibromomethane	10.0	10.2		ug/L		102	60 - 140
Dichlorodifluoromethane	10.0	10.6		ug/L		106	60 - 140
Di-isopropyl ether (DIPE)	10.0	10.3		ug/L		103	60 - 140
Ethanol	100	128		ug/L		128	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	10.4		ug/L		104	60 - 140
Ethylbenzene	10.0	10.9		ug/L		109	60 - 140
Hexachloro-1,3-butadiene	10.0	11.0		ug/L		110	60 - 140
Isopropanol	50.0	ND		ug/L		97	60 - 140
Isopropylbenzene	10.0	11.3		ug/L		113	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	10.6		ug/L		106	60 - 140
Methylene Chloride	10.0	10.1		ug/L		101	60 - 140
Naphthalene	10.0	10.7		ug/L		107	60 - 140
n-Butylbenzene	10.0	11.3		ug/L		113	60 - 140
N-Propylbenzene	10.0	11.3		ug/L		113	60 - 140
o-Xylene	10.0	10.7		ug/L		107	60 - 140
m,p-Xylene	20.0	22.0		ug/L		110	60 - 140
p-Isopropyltoluene	10.0	11.0		ug/L		110	60 - 140
sec-Butylbenzene	10.0	11.2		ug/L		112	60 - 140
Styrene	10.0	11.0		ug/L		110	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	10.2		ug/L		102	60 - 140
tert-Butyl alcohol (TBA)	50.0	57.4		ug/L		115	60 - 140
tert-Butylbenzene	10.0	11.1		ug/L		111	60 - 140
Tetrachloroethene	10.0	11.5		ug/L		115	70 - 130
Tetrahydrofuran	10.0	9.15	J,DX	ug/L		92	60 - 140
Toluene	10.0	10.8		ug/L		108	70 - 130
trans-1,2-Dichloroethene	10.0	11.2		ug/L		112	70 - 130
trans-1,3-Dichloropropene	10.0	10.5		ug/L		105	50 - 150
Trichloroethene	10.0	10.6		ug/L		106	65 - 135
Trichlorofluoromethane	10.0	10.9		ug/L		109	50 - 150
Vinyl acetate	10.0	9.59		ug/L		96	60 - 140
Vinyl chloride	10.0	11.2		ug/L		112	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*60 - 140*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Dibromofluoromethane (Surr)	*95*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.7		ug/L		107	60 - 140	2	30
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	70 - 130	1	36
1,1,2,2-Tetrachloroethane	10.0	9.96		ug/L		100	60 - 140	2	61
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.8		ug/L		118	60 - 140	3	30
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	70 - 130	1	45
1,1-Dichloroethane	10.0	10.7		ug/L		107	70 - 130	3	40
1,1-Dichloroethene	10.0	10.8		ug/L		108	50 - 150	0	32
1,1-Dichloropropene	10.0	11.2		ug/L		112	60 - 140	1	30
1,2,3-Trichlorobenzene	10.0	10.6		ug/L		106	60 - 140	4	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichloropropane			10.0	10.1		ug/L		101	60 - 140	3	30
1,2,4-Trichlorobenzene			10.0	10.7		ug/L		107	60 - 140	2	30
1,2,4-Trimethylbenzene			10.0	10.3		ug/L		103	60 - 140	0	30
1,2-Dibromo-3-Chloropropane			10.0	9.70		ug/L		97	60 - 140	5	30
1,2-Dibromoethane			10.0	10.7		ug/L		107	60 - 140	1	30
1,2-Dichloro-1,1,2-trifluoroethane			10.0	11.4		ug/L		114	60 - 140	3	30
1,2-Dichlorobenzene			10.0	10.2		ug/L		102	65 - 135	4	57
1,2-Dichloroethane			10.0	9.66		ug/L		97	70 - 130	2	49
1,2-Dichloropropane			10.0	10.3		ug/L		103	35 - 165	2	55
1,3,5-Trimethylbenzene			10.0	11.1		ug/L		111	60 - 140	3	30
1,3-Dichlorobenzene			10.0	10.8		ug/L		108	70 - 130	2	43
1,3-Dichloropropane			10.0	10.6		ug/L		106	60 - 140	2	30
1,4-Dichlorobenzene			10.0	10.7		ug/L		107	65 - 135	0	57
2,2-Dichloro-1,1,1-trifluoroethane			10.0	10.9		ug/L		109	60 - 140	2	30
2,2-Dichloropropane			10.0	11.4		ug/L		114	60 - 140	1	30
2-Butanone (MEK)			10.0	8.23		ug/L		82	60 - 140	11	30
2-Chloroethyl vinyl ether			10.0	8.67		ug/L		87	1 - 225	4	71
2-Chlorotoluene			10.0	10.9		ug/L		109	60 - 140	4	30
2-Hexanone			10.0	9.54		ug/L		95	60 - 140	0	30
4-Chlorotoluene			10.0	10.3		ug/L		103	60 - 140	0	30
4-Methyl-2-pentanone (MIBK)			10.0	10.2		ug/L		102	60 - 140	5	30
Acetone			10.0	ND		ug/L		108	60 - 140	2	30
Acrolein			20.0	19.6		ug/L		98	60 - 140	0	60
Acrylonitrile			10.0	10.0		ug/L		100	60 - 140	2	60
Benzene			10.0	11.0		ug/L		110	65 - 135	1	61
Bromobenzene			10.0	11.1		ug/L		111	60 - 140	2	30
Bromochloromethane			10.0	11.2		ug/L		112	60 - 140	3	30
Bromodichloromethane			10.0	10.4		ug/L		104	65 - 135	0	56
Bromoform			10.0	10.5		ug/L		105	70 - 130	6	42
Bromomethane			10.0	8.84		ug/L		88	15 - 185	4	61
Carbon disulfide			10.0	11.3		ug/L		113	60 - 140	3	30
Carbon tetrachloride			10.0	10.6		ug/L		106	70 - 130	0	41
Chlorobenzene			10.0	11.0		ug/L		110	65 - 135	1	53
Chloroethane			10.0	11.5		ug/L		115	40 - 160	1	78
Chloroform			10.0	10.1		ug/L		101	70 - 135	2	30
Chloromethane			10.0	9.80		ug/L		98	1 - 205	9	60
cis-1,2-Dichloroethene			10.0	10.8		ug/L		108	60 - 140	1	30
cis-1,3-Dichloropropene			10.0	10.8		ug/L		108	25 - 175	1	58
Cyclohexane			10.0	12.1		ug/L		121	60 - 140	5	30
Dibromochloromethane			10.0	10.6		ug/L		106	70 - 135	2	50
Dibromomethane			10.0	10.2		ug/L		102	60 - 140	0	30
Dichlorodifluoromethane			10.0	11.0		ug/L		110	60 - 140	4	30
Di-isopropyl ether (DIPE)			10.0	10.3		ug/L		103	60 - 140	0	30
Ethanol			100	89.0	J,DX BA	ug/L		89	60 - 140	36	30
Ethyl-t-butyl ether (ETBE)			10.0	10.8		ug/L		108	60 - 140	3	30
Ethylbenzene			10.0	11.0		ug/L		110	60 - 140	0	63
Hexachloro-1,3-butadiene			10.0	11.1		ug/L		111	60 - 140	1	30
Isopropanol			50.0	ND		ug/L		102	60 - 140	5	30
Isopropylbenzene			10.0	11.2		ug/L		112	60 - 140	1	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	10.5		ug/L		105	60 - 140	0	30
Methylene Chloride	10.0	10.1		ug/L		101	60 - 140	0	28
Naphthalene	10.0	10.7		ug/L		107	60 - 140	0	30
n-Butylbenzene	10.0	11.4		ug/L		114	60 - 140	1	30
N-Propylbenzene	10.0	11.5		ug/L		115	60 - 140	1	30
o-Xylene	10.0	10.7		ug/L		107	60 - 140	0	30
m,p-Xylene	20.0	22.2		ug/L		111	60 - 140	1	30
p-Isopropyltoluene	10.0	10.9		ug/L		109	60 - 140	1	30
sec-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	2	30
Styrene	10.0	11.2		ug/L		112	60 - 140	1	30
Tert-amyl-methyl ether (TAME)	10.0	10.2		ug/L		102	60 - 140	0	30
tert-Butyl alcohol (TBA)	50.0	50.9		ug/L		102	60 - 140	12	30
tert-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	1	30
Tetrachloroethene	10.0	11.7		ug/L		117	70 - 130	2	39
Tetrahydrofuran	10.0	9.39	J,DX	ug/L		94	60 - 140	3	30
Toluene	10.0	10.6		ug/L		106	70 - 130	2	41
trans-1,2-Dichloroethene	10.0	11.5		ug/L		115	70 - 130	2	45
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	50 - 150	3	86
Trichloroethene	10.0	10.7		ug/L		107	65 - 135	1	48
Trichlorofluoromethane	10.0	10.9		ug/L		109	50 - 150	0	84
Vinyl acetate	10.0	9.94		ug/L		99	60 - 140	4	30
Vinyl chloride	10.0	11.6		ug/L		116	5 - 195	4	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*60 - 140*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Dibromofluoromethane (Surr)	*96*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-307594/7
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			02/28/23 12:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*101*		*67 - 133*		*02/28/23 12:05*	*1*

Lab Sample ID: LCS 570-307594/4
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	18.4		ug/L		92	75 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307594/4
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dichlorobutane (Surr)	*95*		*67 - 133*

Lab Sample ID: LCSD 570-307594/5
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	18.7		ug/L		93	75 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Dichlorobutane (Surr)	*99*		*67 - 133*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-307149/1-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Chlorophenol	ND		0.20	0.096	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Nitrophenol	ND		5.0	3.5	ug/L		02/27/23 05:32	02/27/23 17:25	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		02/27/23 05:32	02/27/23 17:25	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Nitrophenol	ND		5.0	3.4	ug/L		02/27/23 05:32	02/27/23 17:25	1
Acenaphthene	ND		0.20	0.098	ug/L		02/27/23 05:32	02/27/23 17:25	1
Acenaphthylene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Anthracene	ND		0.20	0.084	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzidine	ND		5.0	2.7	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[b]fluoranthene	0.123	J,DX	0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-307149/1-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		02/27/23 05:32	02/27/23 17:25	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		02/27/23 05:32	02/27/23 17:25	1
Chrysene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		02/27/23 05:32	02/27/23 17:25	1
Diethyl phthalate	ND		2.0	0.18	ug/L		02/27/23 05:32	02/27/23 17:25	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		02/27/23 05:32	02/27/23 17:25	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		02/27/23 05:32	02/27/23 17:25	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		02/27/23 05:32	02/27/23 17:25	1
Fluoranthene	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
Fluorene	ND		0.20	0.095	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachloroethane	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Isophorone	ND		0.20	0.099	ug/L		02/27/23 05:32	02/27/23 17:25	1
Naphthalene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Nitrobenzene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Pentachlorophenol	ND		1.0	0.84	ug/L		02/27/23 05:32	02/27/23 17:25	1
Phenanthrene	ND		0.20	0.16	ug/L		02/27/23 05:32	02/27/23 17:25	1
Phenol	ND		1.0	0.52	ug/L		02/27/23 05:32	02/27/23 17:25	1
Pyrene	ND		0.20	0.086	ug/L		02/27/23 05:32	02/27/23 17:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*81*		*28 - 127*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorobiphenyl (Surr)	*60*		*31 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorophenol	*42*		*17 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Phenol-d6 (Surr)	*29*		*10 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
p-Terphenyl-d14 (Surr)	*78*		*45 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	12.1		ug/L		61	57 - 130
1,2-Dichlorobenzene	20.0	13.7		ug/L		69	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	18.7		ug/L		93	60 - 115
1,3-Dichlorobenzene	20.0	12.6		ug/L		63	37 - 120
1,4-Dichlorobenzene	20.0	13.1		ug/L		66	39 - 120
2,4,6-Trichlorophenol	20.0	21.3		ug/L		107	52 - 129

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dichlorophenol	20.0	17.6		ug/L		88	53 - 122
2,4-Dimethylphenol	20.0	17.3		ug/L		86	42 - 120
2,4-Dinitrophenol	20.0	21.2		ug/L		106	1 - 173
2,4-Dinitrotoluene	20.0	25.8	LQ	ug/L		129	48 - 127
2,6-Dinitrotoluene	20.0	25.4		ug/L		127	68 - 137
2-Chloronaphthalene	20.0	16.4		ug/L		82	65 - 120
2-Chlorophenol	20.0	16.6		ug/L		83	36 - 120
2-Nitrophenol	20.0	20.2		ug/L		101	45 - 167
3,3'-Dichlorobenzidine	20.0	22.3		ug/L		111	8 - 213
4,6-Dinitro-2-methylphenol	20.0	27.5	LQ	ug/L		138	53 - 130
4-Bromophenyl phenyl ether	20.0	17.8		ug/L		89	65 - 120
4-Chloro-3-methylphenol	20.0	20.1		ug/L		101	41 - 128
4-Chlorophenyl phenyl ether	20.0	18.4		ug/L		92	38 - 145
4-Nitrophenol	20.0	12.6		ug/L		63	13 - 129
Acenaphthene	20.0	17.9		ug/L		89	60 - 132
Acenaphthylene	20.0	21.3		ug/L		107	54 - 126
Anthracene	20.0	21.0		ug/L		105	43 - 120
Benzidine	20.0	9.42		ug/L		47	20 - 164
Benzo[a]anthracene	20.0	23.4		ug/L		117	42 - 133
Benzo[a]pyrene	20.0	25.1		ug/L		126	32 - 148
Benzo[b]fluoranthene	20.0	23.5		ug/L		117	42 - 140
Benzo[g,h,i]perylene	20.0	23.9		ug/L		120	1 - 195
Benzo[k]fluoranthene	20.0	24.9		ug/L		124	25 - 146
bis (2-chloroisopropyl) ether	20.0	16.6		ug/L		83	63 - 139
Bis(2-chloroethoxy)methane	20.0	14.9		ug/L		75	49 - 165
Bis(2-chloroethyl)ether	20.0	16.1		ug/L		80	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	25.7		ug/L		128	29 - 137
Butyl benzyl phthalate	20.0	25.3		ug/L		126	1 - 140
Chrysene	20.0	22.3		ug/L		111	44 - 140
Dibenz(a,h)anthracene	20.0	22.4		ug/L		112	1 - 200
Diethyl phthalate	20.0	22.9		ug/L		115	1 - 120
Dimethyl phthalate	20.0	22.7		ug/L		113	1 - 120
Di-n-butyl phthalate	20.0	24.2	LQ	ug/L		121	8 - 120
Di-n-octyl phthalate	20.0	28.5	LQ	ug/L		142	19 - 132
Fluoranthene	20.0	22.7		ug/L		114	43 - 121
Fluorene	20.0	19.1		ug/L		95	70 - 120
Hexachlorobenzene	20.0	17.8		ug/L		89	8 - 142
Hexachlorobutadiene	20.0	11.9		ug/L		59	38 - 120
Hexachlorocyclopentadiene	20.0	22.1		ug/L		110	43 - 145
Hexachloroethane	20.0	13.1		ug/L		66	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	22.4		ug/L		112	1 - 151
Isophorone	20.0	17.4		ug/L		87	47 - 180
Naphthalene	20.0	12.5		ug/L		62	36 - 120
Nitrobenzene	20.0	16.2		ug/L		81	54 - 158
N-Nitrosodimethylamine	20.0	9.35		ug/L		47	20 - 120
N-Nitrosodi-n-propylamine	20.0	17.7		ug/L		88	14 - 198
N-Nitrosodiphenylamine	20.0	21.4		ug/L		107	65 - 133
Pentachlorophenol	20.0	14.9		ug/L		74	38 - 152
Phenanthrene	20.0	19.3		ug/L		96	65 - 120

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Phenol			20.0	7.24		ug/L		36	17 - 120		
Pyrene			20.0	21.0		ug/L		105	70 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*107*		*28 - 127*
2-Fluorobiphenyl (Surr)	*84*		*31 - 120*
2-Fluorophenol	*48*		*17 - 120*
Nitrobenzene-d5	*76*		*27 - 120*
Phenol-d6 (Surr)	*34*		*10 - 120*
p-Terphenyl-d14 (Surr)	*106*		*45 - 120*

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene			20.0	10.8	LR	ug/L		54	57 - 130	12	30
1,2-Dichlorobenzene			20.0	12.4		ug/L		62	40 - 120	10	20
1,2-Diphenylhydrazine(as Azobenzene)			20.0	16.4		ug/L		82	60 - 115	13	30
1,3-Dichlorobenzene			20.0	11.8		ug/L		59	37 - 120	7	20
1,4-Dichlorobenzene			20.0	12.2		ug/L		61	39 - 120	7	20
2,4,6-Trichlorophenol			20.0	17.5		ug/L		88	52 - 129	20	35
2,4-Dichlorophenol			20.0	15.3		ug/L		76	53 - 122	14	30
2,4-Dimethylphenol			20.0	15.3		ug/L		76	42 - 120	12	35
2,4-Dinitrophenol			20.0	16.7		ug/L		84	1 - 173	23	79
2,4-Dinitrotoluene			20.0	21.5		ug/L		107	48 - 127	18	25
2,6-Dinitrotoluene			20.0	21.0		ug/L		105	68 - 137	19	29
2-Chloronaphthalene			20.0	13.9	BA	ug/L		69	65 - 120	17	15
2-Chlorophenol			20.0	15.2		ug/L		76	36 - 120	9	37
2-Nitrophenol			20.0	18.1		ug/L		91	45 - 167	11	33
3,3'-Dichlorobenzidine			20.0	19.0		ug/L		95	8 - 213	16	65
4,6-Dinitro-2-methylphenol			20.0	24.6		ug/L		123	53 - 130	11	122
4-Bromophenyl phenyl ether			20.0	15.9		ug/L		80	65 - 120	11	26
4-Chloro-3-methylphenol			20.0	16.9		ug/L		84	41 - 128	18	44
4-Chlorophenyl phenyl ether			20.0	15.3		ug/L		76	38 - 145	18	36
4-Nitrophenol			20.0	10.3		ug/L		51	13 - 129	20	79
Acenaphthene			20.0	15.0		ug/L		75	60 - 132	17	29
Acenaphthylene			20.0	17.9		ug/L		89	54 - 126	17	45
Anthracene			20.0	18.3		ug/L		91	43 - 120	14	40
Benzidine			20.0	6.51	BA	ug/L		33	20 - 164	37	30
Benzo[a]anthracene			20.0	19.2		ug/L		96	42 - 133	20	32
Benzo[a]pyrene			20.0	20.7		ug/L		103	32 - 148	19	43
Benzo[b]fluoranthene			20.0	19.6		ug/L		98	42 - 140	18	43
Benzo[g,h,i]perylene			20.0	20.9		ug/L		105	1 - 195	13	61
Benzo[k]fluoranthene			20.0	20.8		ug/L		104	25 - 146	18	38
bis (2-chloroisopropyl) ether			20.0	15.2		ug/L		76	63 - 139	9	46
Bis(2-chloroethoxy)methane			20.0	12.9		ug/L		65	49 - 165	14	32
Bis(2-chloroethyl)ether			20.0	14.1		ug/L		71	43 - 126	13	65

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate			20.0	22.7		ug/L		114	29 - 137	12	50
Butyl benzyl phthalate			20.0	22.0		ug/L		110	1 - 140	14	36
Chrysene			20.0	18.6		ug/L		93	44 - 140	18	53
Dibenz(a,h)anthracene			20.0	19.4		ug/L		97	1 - 200	14	75
Diethyl phthalate			20.0	19.1		ug/L		96	1 - 120	18	60
Dimethyl phthalate			20.0	18.6		ug/L		93	1 - 120	20	110
Di-n-butyl phthalate			20.0	20.5		ug/L		103	8 - 120	16	28
Di-n-octyl phthalate			20.0	26.1		ug/L		131	19 - 132	9	42
Fluoranthene			20.0	18.9		ug/L		95	43 - 121	18	40
Fluorene			20.0	16.1		ug/L		80	70 - 120	17	23
Hexachlorobenzene			20.0	15.4		ug/L		77	8 - 142	15	33
Hexachlorobutadiene			20.0	10.6		ug/L		53	38 - 120	11	38
Hexachlorocyclopentadiene			20.0	18.5		ug/L		92	43 - 145	18	22
Hexachloroethane			20.0	12.0		ug/L		60	55 - 120	9	32
Indeno[1,2,3-cd]pyrene			20.0	19.5		ug/L		97	1 - 151	14	60
Isophorone			20.0	15.1		ug/L		75	47 - 180	14	56
Naphthalene			20.0	11.5		ug/L		57	36 - 120	9	39
Nitrobenzene			20.0	14.2		ug/L		71	54 - 158	13	37
N-Nitrosodimethylamine			20.0	9.77		ug/L		49	20 - 120	4	21
N-Nitrosodi-n-propylamine			20.0	15.6		ug/L		78	14 - 198	12	52
N-Nitrosodiphenylamine			20.0	19.0		ug/L		95	65 - 133	12	20
Pentachlorophenol			20.0	12.6		ug/L		63	38 - 152	16	52
Phenanthrene			20.0	16.7		ug/L		83	65 - 120	15	24
Phenol			20.0	6.65		ug/L		33	17 - 120	8	39
Pyrene			20.0	16.9		ug/L		84	70 - 120	22	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*95*		*28 - 127*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*
2-Fluorophenol	*44*		*17 - 120*
Nitrobenzene-d5	*66*		*27 - 120*
Phenol-d6 (Surr)	*31*		*10 - 120*
p-Terphenyl-d14 (Surr)	*86*		*45 - 120*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-309605/5
Matrix: Water
Analysis Batch: 309605

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/07/23 14:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*64*		*20 - 144*		*03/07/23 14:47*	*1*

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCS 570-309605/3
Matrix: Water
Analysis Batch: 309605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	2030		ug/L		106	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*87*		*20 - 144*

Lab Sample ID: LCSD 570-309605/4
Matrix: Water
Analysis Batch: 309605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	1940		ug/L		101	71 - 120	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*86*		*20 - 144*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-308878/1-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/03/23 17:08	03/05/23 03:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*105*		*53 - 151*	*03/03/23 17:08*	*03/05/23 03:27*	*1*

Lab Sample ID: LCS 570-308878/2-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308878

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			4.00	3.67		mg/L		92	65 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*99*		*53 - 151*

Lab Sample ID: LCSD 570-308878/3-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308878

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			4.00	3.89		mg/L		97	65 - 129	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*110*		*53 - 151*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-307526/4
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			02/28/23 02:19	1

Lab Sample ID: LCS 570-307526/5
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	50.5		ug/L		101	95 - 107

Lab Sample ID: LCSD 570-307526/6
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	50.4		ug/L		101	95 - 107	0	20

Lab Sample ID: MB 570-307529/1-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			02/28/23 05:18	1

Lab Sample ID: LCS 570-307529/2-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	50.4		ug/L		101	95 - 107

Lab Sample ID: LCSD 570-307529/3-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	50.7		ug/L		101	95 - 107	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-307134/6
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			02/27/23 06:29	1
Nitrate as N	ND		0.10	0.020	mg/L			02/27/23 06:29	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 570-307134/7
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.55		mg/L		102	90 - 110
Nitrate as N	5.00	4.98		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-307134/8
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.51		mg/L		100	90 - 110	1	15
Nitrate as N	5.00	4.91		mg/L		98	90 - 110	1	15

Lab Sample ID: MB 570-307135/6
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			02/27/23 06:29	1
Fluoride	ND		0.10	0.046	mg/L			02/27/23 06:29	1
Sulfate	ND		1.0	0.24	mg/L			02/27/23 06:29	1

Lab Sample ID: LCS 570-307135/7
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.6		mg/L		99	90 - 110
Fluoride	2.50	2.56		mg/L		102	90 - 110
Sulfate	50.0	49.1		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-307135/8
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	48.7		mg/L		97	90 - 110	2	15
Fluoride	2.50	2.52		mg/L		101	90 - 110	1	15
Sulfate	50.0	48.3		mg/L		97	90 - 110	2	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-307808/7
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/28/23 19:27	1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCS 570-307808/8
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.2		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-307808/9
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.1		ug/L		96	85 - 115	0	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-307563/1-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		02/28/23 08:01	02/28/23 19:24	1

Lab Sample ID: LCS 570-307563/2-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	489	J,DX	ug/L		98	85 - 115

Lab Sample ID: LCSD 570-307563/3-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	492	J,DX	ug/L		98	85 - 115	1	20

Lab Sample ID: MB 570-307724/1-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			02/28/23 23:34	1

Lab Sample ID: LCS 570-307724/2-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	434	J,DX	ug/L		87	85 - 115

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 570-307724/3-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	431	J,DX	ug/L		86	85 - 115	1	20

Lab Sample ID: 570-129044-1 MS
Matrix: Water
Analysis Batch: 307917

Client Sample ID: EPBMC_20230226
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	220	J,DX BU	500	662		ug/L		88	80 - 120		

Lab Sample ID: 570-129044-1 MSD
Matrix: Water
Analysis Batch: 307917

Client Sample ID: EPBMC_20230226
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	220	J,DX BU	500	675		ug/L		90	80 - 120	2	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-307628/1-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		02/28/23 10:21	02/28/23 13:23	1
Silver	ND		1.0	0.23	ug/L		02/28/23 10:21	02/28/23 13:23	1
Arsenic	ND		1.0	0.16	ug/L		02/28/23 10:21	02/28/23 13:23	1
Barium	ND		1.0	0.17	ug/L		02/28/23 10:21	02/28/23 13:23	1
Beryllium	ND		0.50	0.26	ug/L		02/28/23 10:21	02/28/23 13:23	1
Cadmium	ND		1.0	0.13	ug/L		02/28/23 10:21	02/28/23 13:23	1
Chromium	0.267	J,DX	2.0	0.14	ug/L		02/28/23 10:21	02/28/23 13:23	1
Copper	ND		2.0	0.32	ug/L		02/28/23 10:21	02/28/23 13:23	1
Iron	5.33	J,DX	20	3.7	ug/L		02/28/23 10:21	02/28/23 13:23	1
Manganese	ND		1.0	0.41	ug/L		02/28/23 10:21	02/28/23 13:23	1
Nickel	ND		2.0	0.17	ug/L		02/28/23 10:21	02/28/23 13:23	1
Lead	ND		1.0	0.12	ug/L		02/28/23 10:21	02/28/23 13:23	1
Antimony	ND		2.0	0.36	ug/L		02/28/23 10:21	02/28/23 13:23	1
Zinc	ND		20	2.8	ug/L		02/28/23 10:21	02/28/23 13:23	1
Selenium	ND		2.0	0.52	ug/L		02/28/23 10:21	02/28/23 13:23	1
Cobalt	ND		1.0	0.14	ug/L		02/28/23 10:21	02/28/23 13:23	1
Thallium	ND		1.0	0.11	ug/L		02/28/23 10:21	02/28/23 13:23	1

Lab Sample ID: LCS 570-307628/2-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum			80.0	77.7		ug/L		97	85 - 115		
Silver			80.0	75.4		ug/L		94	85 - 115		
Arsenic			80.0	76.7		ug/L		96	85 - 115		
Barium			80.0	76.7		ug/L		96	85 - 115		

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-307628/2-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	80.0	76.3		ug/L		95	85 - 115
Cadmium	80.0	76.1		ug/L		95	85 - 115
Chromium	80.0	75.5		ug/L		94	85 - 115
Copper	80.0	74.3		ug/L		93	85 - 115
Iron	800	770		ug/L		96	85 - 115
Manganese	80.0	77.4		ug/L		97	85 - 115
Nickel	80.0	75.1		ug/L		94	85 - 115
Lead	80.0	76.9		ug/L		96	85 - 115
Antimony	80.0	77.4		ug/L		97	85 - 115
Zinc	80.0	75.3		ug/L		94	85 - 115
Selenium	80.0	79.2		ug/L		99	85 - 115
Cobalt	80.0	74.2		ug/L		93	85 - 115
Thallium	80.0	75.7		ug/L		95	85 - 115

Lab Sample ID: LCSD 570-307628/3-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	80.2		ug/L		100	85 - 115	3	20
Silver	80.0	77.2		ug/L		96	85 - 115	2	20
Arsenic	80.0	77.7		ug/L		97	85 - 115	1	20
Barium	80.0	78.0		ug/L		98	85 - 115	2	20
Beryllium	80.0	74.5		ug/L		93	85 - 115	2	20
Cadmium	80.0	78.0		ug/L		97	85 - 115	2	20
Chromium	80.0	77.9		ug/L		97	85 - 115	3	20
Copper	80.0	76.4		ug/L		96	85 - 115	3	20
Iron	800	798		ug/L		100	85 - 115	4	20
Manganese	80.0	80.1		ug/L		100	85 - 115	3	20
Nickel	80.0	77.6		ug/L		97	85 - 115	3	20
Lead	80.0	78.1		ug/L		98	85 - 115	2	20
Antimony	80.0	81.2		ug/L		102	85 - 115	5	20
Zinc	80.0	77.4		ug/L		97	85 - 115	3	20
Selenium	80.0	81.9		ug/L		102	85 - 115	3	20
Cobalt	80.0	76.9		ug/L		96	85 - 115	4	20
Thallium	80.0	78.3		ug/L		98	85 - 115	3	20

Lab Sample ID: MB 570-308039/1-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			03/01/23 14:16	1
Silver	ND		1.0	0.23	ug/L			03/01/23 14:16	1
Arsenic	ND		1.0	0.16	ug/L			03/01/23 14:16	1
Barium	ND		1.0	0.17	ug/L			03/01/23 14:16	1
Beryllium	ND		0.50	0.26	ug/L			03/01/23 14:16	1
Cadmium	ND		1.0	0.13	ug/L			03/01/23 14:16	1
Chromium	0.163	J,DX	2.0	0.14	ug/L			03/01/23 14:16	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-308039/1-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	ND		2.0	0.32	ug/L			03/01/23 14:16	1
Iron	ND		20	3.7	ug/L			03/01/23 14:16	1
Manganese	ND		1.0	0.41	ug/L			03/01/23 14:16	1
Nickel	ND		2.0	0.17	ug/L			03/01/23 14:16	1
Lead	ND		1.0	0.12	ug/L			03/01/23 14:16	1
Antimony	ND		2.0	0.36	ug/L			03/01/23 14:16	1
Zinc	ND		20	2.8	ug/L			03/01/23 14:16	1
Selenium	ND		2.0	0.52	ug/L			03/01/23 14:16	1
Cobalt	ND		1.0	0.14	ug/L			03/01/23 14:16	1
Thallium	ND		1.0	0.11	ug/L			03/01/23 14:16	1

Lab Sample ID: LCS 570-308039/2-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum			80.0	79.4		ug/L		99	85 - 115		
Silver			80.0	79.7		ug/L		100	85 - 115		
Arsenic			80.0	79.7		ug/L		100	85 - 115		
Barium			80.0	79.3		ug/L		99	85 - 115		
Beryllium			80.0	79.5		ug/L		99	85 - 115		
Cadmium			80.0	80.0		ug/L		100	85 - 115		
Chromium			80.0	80.1		ug/L		100	85 - 115		
Copper			80.0	77.6		ug/L		97	85 - 115		
Iron			800	814		ug/L		102	85 - 115		
Manganese			80.0	81.3		ug/L		102	85 - 115		
Nickel			80.0	78.1		ug/L		98	85 - 115		
Lead			80.0	80.3		ug/L		100	85 - 115		
Antimony			80.0	79.8		ug/L		100	85 - 115		
Zinc			80.0	78.5		ug/L		98	85 - 115		
Selenium			80.0	82.2		ug/L		103	85 - 115		
Cobalt			80.0	78.7		ug/L		98	85 - 115		
Thallium			80.0	80.5		ug/L		101	85 - 115		

Lab Sample ID: LCSD 570-308039/3-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum			80.0	81.3		ug/L		102	85 - 115	2	20
Silver			80.0	79.8		ug/L		100	85 - 115	0	20
Arsenic			80.0	80.6		ug/L		101	85 - 115	1	20
Barium			80.0	79.2		ug/L		99	85 - 115	0	20
Beryllium			80.0	83.7		ug/L		105	85 - 115	5	20
Cadmium			80.0	80.5		ug/L		101	85 - 115	1	20
Chromium			80.0	80.0		ug/L		100	85 - 115	0	20
Copper			80.0	78.2		ug/L		98	85 - 115	1	20
Iron			800	814		ug/L		102	85 - 115	0	20
Manganese			80.0	81.5		ug/L		102	85 - 115	0	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-308039/3-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nickel			80.0	78.2		ug/L		98	85 - 115	0	20
Lead			80.0	80.5		ug/L		101	85 - 115	0	20
Antimony			80.0	82.8		ug/L		103	85 - 115	4	20
Zinc			80.0	81.1		ug/L		101	85 - 115	3	20
Selenium			80.0	83.1		ug/L		104	85 - 115	1	20
Cobalt			80.0	78.8		ug/L		99	85 - 115	0	20
Thallium			80.0	80.5		ug/L		101	85 - 115	0	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-308085/1-A
Matrix: Water
Analysis Batch: 308437

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/01/23 14:04	03/02/23 12:27	1

Lab Sample ID: LCS 570-308085/2-A
Matrix: Water
Analysis Batch: 308437

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308085

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HEM (Oil & Grease)			40.0	36.6		mg/L		92	78 - 114		

Lab Sample ID: LCSD 570-308085/3-A
Matrix: Water
Analysis Batch: 308437

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308085

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	37.1		mg/L		93	78 - 114	1	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-309909/5-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:21	1

Lab Sample ID: LCS 570-309909/6-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309909

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.483		mg/L		97	90 - 110		

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCSD 570-309909/7-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309909

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.488		mg/L		98	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309199/12
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/03/23 20:26	1

Lab Sample ID: LCS 570-309199/13
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			250	229		ug/L		92	90 - 110		

Lab Sample ID: LCSD 570-309199/15
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	231		ug/L		92	90 - 110	1	20

Lab Sample ID: MRL 570-309199/11
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			5.00	5.41		ug/L		108	50 - 150		

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-307521/3
Matrix: Water
Analysis Batch: 307521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			0.0200	ND		NTU		100.0	0.0 - 200.0		

Lab Sample ID: 570-129044-1 DU
Matrix: Water
Analysis Batch: 307521

Client Sample ID: EPBMC_20230226
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Turbidity	380			390		NTU				0.8	25

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-310116/10
Matrix: Water
Analysis Batch: 310116

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/08/23 15:46	1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-308515/1
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/02/23 16:27	1

Lab Sample ID: LCS 570-308515/2
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	978		mg/L		98	84 - 108

Lab Sample ID: LCSD 570-308515/3
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	84 - 108	4	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-308912/1
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/03/23 18:43	1

Lab Sample ID: LCS 570-308912/2
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.0		mg/L		96	77 - 116

Lab Sample ID: LCSD 570-308912/3
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	96.0		mg/L		96	77 - 116	0	10

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-309923/45
Matrix: Water
Analysis Batch: 309923

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			03/08/23 17:12	1

Lab Sample ID: LCS 570-309923/46
Matrix: Water
Analysis Batch: 309923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon, Total Organic	5.03	4.74		mg/L		94	85 - 115

Lab Sample ID: LCSD 570-309923/47
Matrix: Water
Analysis Batch: 309923

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic	5.03	4.99		mg/L		99	85 - 115	5	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-307522/5-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307522

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		02/27/23 20:28	02/27/23 21:49	1

Lab Sample ID: LCS 570-307522/6-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307522

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	0.500	0.546		mg/L		109	83 - 122

Lab Sample ID: LCSD 570-307522/7-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307522

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.500	0.538		mg/L		108	83 - 122	1	10

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-309219/2
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			02/27/23 11:01	1

Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: LCS 570-309219/4
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Biochemical Oxygen Demand			199	201		mg/L		101	84.6 - 115.4		

GC/MS VOA

Analysis Batch: 307594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	8260B SIM	
MB 570-307594/7	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-307594/4	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-307594/5	Lab Control Sample Dup	Total/NA	Water	8260B SIM	

Analysis Batch: 307642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	624.1	
570-129044-2	TB_20230226-1	Total/NA	Water	624.1	
MB 570-307642/6	Method Blank	Total/NA	Water	624.1	
LCS 570-307642/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-307642/4	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 307149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	625	
MB 570-307149/1-A	Method Blank	Total/NA	Water	625	
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 307279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-307149/1-A	Method Blank	Total/NA	Water	625.1 SIM	307149
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	307149
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	307149

Analysis Batch: 307608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	625.1 SIM	307149

GC VOA

Analysis Batch: 309605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	8015B	
MB 570-309605/5	Method Blank	Total/NA	Water	8015B	
LCS 570-309605/3	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-309605/4	Lab Control Sample Dup	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 308878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	3510C	
MB 570-308878/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-308878/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-308878/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA

Analysis Batch: 309032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308878/1-A	Method Blank	Total/NA	Water	8015B	308878
LCS 570-308878/2-A	Lab Control Sample	Total/NA	Water	8015B	308878
LCSD 570-308878/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	308878

Analysis Batch: 311027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	8015B	308878

HPLC/IC

Analysis Batch: 307134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	300.0	
MB 570-307134/6	Method Blank	Total/NA	Water	300.0	
LCS 570-307134/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307134/8	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 307135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	300.0	
570-129044-1 - DL	EPBMC_20230226	Total/NA	Water	300.0	
MB 570-307135/6	Method Blank	Total/NA	Water	300.0	
LCS 570-307135/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307135/8	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 307526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	218.6	307529
570-129044-1	EPBMC_20230226	Total/NA	Water	218.6	
MB 570-307526/4	Method Blank	Total/NA	Water	218.6	
MB 570-307529/1-A	Method Blank	Dissolved	Water	218.6	307529
LCS 570-307526/5	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-307529/2-A	Lab Control Sample	Dissolved	Water	218.6	307529
LCSD 570-307526/6	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-307529/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	307529

Filtration Batch: 307529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	Filtration	
MB 570-307529/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-307529/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-307529/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 307808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	314.0	
MB 570-307808/7	Method Blank	Total/NA	Water	314.0	
LCS 570-307808/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-307808/9	Lab Control Sample Dup	Total/NA	Water	314.0	

HPLC/IC

Analysis Batch: 308826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	NO2NO3 Calc	

Metals

Prep Batch: 307563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total Recoverable	Water	200.7	
MB 570-307563/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-307563/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-307563/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	

Prep Batch: 307628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total Recoverable	Water	200.8	
MB 570-307628/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-307628/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-307628/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Filtration Batch: 307724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	Filtration	
MB 570-307724/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-307724/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-307724/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-129044-1 MS	EPBMC_20230226	Dissolved	Water	Filtration	
570-129044-1 MSD	EPBMC_20230226	Dissolved	Water	Filtration	

Analysis Batch: 307737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-307628/1-A	Method Blank	Total Recoverable	Water	200.8	307628
LCS 570-307628/2-A	Lab Control Sample	Total Recoverable	Water	200.8	307628
LCSD 570-307628/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	307628

Analysis Batch: 307880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total Recoverable	Water	200.7 Rev 4.4	307563
MB 570-307563/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	307563
LCS 570-307563/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	307563
LCSD 570-307563/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	307563

Analysis Batch: 307917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	200.7 Rev 4.4	307724
MB 570-307724/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	307724
LCS 570-307724/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	307724
LCSD 570-307724/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	307724
570-129044-1 MS	EPBMC_20230226	Dissolved	Water	200.7 Rev 4.4	307724
570-129044-1 MSD	EPBMC_20230226	Dissolved	Water	200.7 Rev 4.4	307724

Metals

Analysis Batch: 307918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total Recoverable	Water	200.8	307628
570-129044-1	EPBMC_20230226	Total Recoverable	Water	200.8	307628

Filtration Batch: 308039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	Filtration	
MB 570-308039/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 308100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	200.8	308039
MB 570-308039/1-A	Method Blank	Dissolved	Water	200.8	308039
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	200.8	308039
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	308039

General Chemistry

Analysis Batch: 307520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	SM 5540C	307522
MB 570-307522/5-A	Method Blank	Total/NA	Water	SM 5540C	307522
LCS 570-307522/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	307522
LCSD 570-307522/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	307522

Analysis Batch: 307521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	SM 2130B	
LCSSRM 570-307521/3	Lab Control Sample	Total/NA	Water	SM 2130B	
570-129044-1 DU	EPBMC_20230226	Total/NA	Water	SM 2130B	

Prep Batch: 307522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	SM 5540C	
MB 570-307522/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-307522/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-307522/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Analysis Batch: 307843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	SM 2540F	

Prep Batch: 308085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	1664A	
MB 570-308085/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-308085/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-308085/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

General Chemistry

Analysis Batch: 308437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	1664A	308085
MB 570-308085/1-A	Method Blank	Total/NA	Water	1664A	308085
LCS 570-308085/2-A	Lab Control Sample	Total/NA	Water	1664A	308085
LCSD 570-308085/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	308085

Analysis Batch: 308515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	SM 2540C	
MB 570-308515/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-308515/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-308515/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 308912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	SM 2540D	
MB 570-308912/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-308912/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-308912/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 309199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	Kelada 01	
MB 570-309199/12	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309199/13	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309199/15	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-309199/11	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 309200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	218.6 CR3	
570-129044-1	EPBMC_20230226	Total/NA	Water	218.6 CR3	

Analysis Batch: 309219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	SM5210B	
USB 570-309219/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-309219/4	Lab Control Sample	Total/NA	Water	SM5210B	

Prep Batch: 309909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	Distill/Ammonia	
MB 570-309909/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 309923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	SM 5310D	
MB 570-309923/45	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-309923/46	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-309923/47	Lab Control Sample Dup	Total/NA	Water	SM 5310D	

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

General Chemistry

Analysis Batch: 309958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	350.1	309909
MB 570-309909/5-A	Method Blank	Total/NA	Water	350.1	309909
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	350.1	309909
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	309909

Analysis Batch: 310116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	SM 2510B	
MB 570-310116/10	Method Blank	Total/NA	Water	SM 2510B	

Geotechnical

Analysis Batch: 311510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	D4464	
LCS 570-311510/6	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-311510/8	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Client Sample ID: EPBMC_20230226

Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	307642	02/28/23 17:32	KHF2	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	307594	02/28/23 18:04	G6NI	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			1024.5 mL	2 mL	307149	02/28/23 05:19	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	307608	02/28/23 16:55	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	309605	03/07/23 21:08	P1R	EET CAL 4
	Instrument ID: GC1									
Total/NA	Prep	3510C			249.6 mL	2.5 mL	308878	03/03/23 17:08	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	311027	03/13/23 16:12	N5Y3	EET CAL 4
	Instrument ID: GC69A									
Dissolved	Filtration	Filtration			100 mL	100 mL	307529	02/28/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	307526	02/28/23 06:30	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	307526	02/28/23 03:43	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		2	4 mL	4 mL	307134	02/28/23 02:26	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		2	4 mL	4 mL	307135	02/28/23 02:26	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0	DL	10	4 mL	4 mL	307135	02/28/23 02:43	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	307808	02/28/23 22:56	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			308826	03/03/23 14:06	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Dissolved	Filtration	Filtration			50 mL	50 mL	307724	02/28/23 13:46	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			307917	02/28/23 23:39	K1UV	EET CAL 4
	Instrument ID: ICP10									
Total Recoverable	Prep	200.7			50 mL	50 mL	307563	02/28/23 08:01	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			307880	02/28/23 20:24	P1R	EET CAL 4
	Instrument ID: ICP10									
Dissolved	Filtration	Filtration			50 mL	50 mL	308039	03/01/23 12:58	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			308100	03/01/23 14:35	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	307628	02/28/23 10:21	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			307918	02/28/23 14:36	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	307628	02/28/23 10:21	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		10			307918	02/28/23 14:53	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	1664A			986 mL	1000 mL	308085	03/01/23 14:04	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			308437	03/02/23 12:27	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Client Sample ID: EPBMC_20230226

Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	218.6 CR3		1			309200	03/06/23 11:03	WH6J	EET CAL 4
Total/NA	Analysis	218.6 CR3		1			309200	03/06/23 11:03	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	309909	03/08/23 09:40	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	309958	03/08/23 11:52	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309199	03/03/23 20:26	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			307521	02/27/23 23:00	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			310116	03/08/23 17:31	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	308515	03/02/23 16:27	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	100 mL	1000 mL	308912	03/03/23 18:43	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	307843	02/27/23 20:30	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 5310D		4	40 mL	40 mL	309923	03/08/23 22:12	UAPD	EET CAL 4
	Instrument ID: TOC8									
Total/NA	Prep	SM 5540C			100 mL	100 mL	307522	02/27/23 20:28	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	307520	02/27/23 21:59	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	SM5210B		1			309219	02/27/23 21:33	U7UR	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	D4464		1			311510	03/14/23 14:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB_20230226-1

Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	307642	02/28/23 15:42	KHF2	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124066-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-1u-23
California	Los Angeles Co9nty Sanitation Districts	10104	07-31-23
California	SCAQMD LAP	17LA0414	11-30-23
California	State	3082	07-31-26
Nevada	State	CA00111	08-01-23
Oregon	NELAP	6175	02-02-26
USDA	US Federal Programs	P330-22-00054	05-26-23
Washington	State	C41u-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

1664A = EPA-821-98-002
ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129044-1	EPBMC_20230226	Water	02/26/23 08:30	02/27/23 18:00
570-129044-2	TB_20230226-1	Water	02/26/23 08:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129044

570-129044 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBMC_20230226	2/26/23	0830	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EB_20230226-1	2/26/23	0830	TB	WM	3	N	N														x				
																									EDBPJOJX
																									Time of Readings 0830
																									DO (mg/L) 13.49
																									pH 7.35
																									Temp (°C/°F) 46.8
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1200
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level I Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, RL 0.005 ug/L

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-23/1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

3.1/3.0, 2.8/2.7 SC12

129094

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below _____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Vers L bs Hacie ia H nts, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Veck L bs n Hacl da Height A	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Lab en CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck L n H l- ida eig ts, A	Chlorpyrifos, Diazinon (E625.2) Wer Labs n Hacienda Heights CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBMC_20230226	2/26/23	0830	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
TB_20230226-2	2/26/23	0830	TB	WM	1 2	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@ha eyaldrich com Report Level II Data Package and pro de EDD All dissolved sample are to be filtered within 24 hours of rece p ven those placed on hold Low limits needed for Mercury (MDL 0 01 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company:	Date/Time: 2-27-23/1100	Receiv EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1300	Receiv		Date/Time: 2/27/23 1600
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

3/16/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		02/28/23 10:18				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, AA=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 02/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129044-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Y	Trizma
		Z	other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1402				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208498.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	7	See Attached Instructions
TB_20230226-2 (570-129044-3)	2/26/23	08:30 Pacific		Water			X				2	See Attached Instructions
							(4)	(2)	(2)	(1)		# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3-1-23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - 1078

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129044-1

Login Number: 129044
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/4/2023 12:58:29 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129044-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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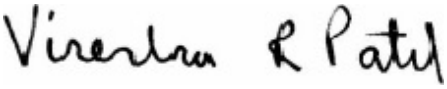
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129044-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129044-2

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7º C and 3.0º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-2

Client Sample ID: EPBMC_20230226

Lab Sample ID: 570-129044-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.025		0.0025	0.00040	ug/L	5		1631E	Total/NA
Mercury	0.0064		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.025		0.0025	0.00040	ug/L			03/02/23 15:05	5

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0064		0.00050	0.000079	ug/L			03/02/23 15:10	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-417455/13
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:07	1

Lab Sample ID: MB 580-417455/14
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:11	1

Lab Sample ID: MB 580-417455/15
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:15	1

Lab Sample ID: LCS 580-417455/16
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec Limits		
Mercury			0.00500	0.00484		ug/L		97	77 - 123		

Lab Sample ID: LCSD 580-417455/12
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	% Rec	% Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00474		ug/L		95	77 - 123	2	24

Lab Sample ID: MB 580-417[illegible]691-A
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 16:08	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-2

Metals

Filtration Batch: 419236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	Filtration	
MB 580-419236/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 419455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	1631E	419236
570-129044-1	EPBMC_20230226	Total/NA	Water	1631E	
MB 580-419236/1-A	Method Blank	Dissolved	Water	1631E	419236
MB 580-419455/13	Method Blank	Total/NA	Water	1631E	
MB 580-419455/14	Method Blank	Total/NA	Water	1631E	
MB 580-419455/15	Method Blank	Total/NA	Water	1631E	
LCS 580-419455/16	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-419455/17	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-2

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	419236	03/01/23 13:20	DRM	EET SEA
Dissolved	Analysis	1631E		1			419455	03/02/23 15:10	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		5			419455	03/02/23 15:05	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129044-2
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-22 *
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129044-1	EPBMC_20230226	Water	02/26/23 08:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129044

570-129044 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
PBMC_20230226	2/26/23	0830	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
B_20230226-1	2/26/23	0830	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 0830
																									DO (mg/L) 13.49
																									pH 7.35
																									Temp (°C/°F) 46.8
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1200
								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other_____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level I Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, RL 0.005 ug/L

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-23/1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

3.1/3.0, 2.8/2.7 SC12

Page 15 of 25

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3/4/2023

SAP COC 2019/2020 VERSION 3

129094

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below _____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Vers Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Vista Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Vista Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E625.2) Vista Labs in Hacienda Heights CA	Asbestos (E100.2)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBMC_20230226	2/26/23	0830	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	0830	TB	WM	1 2	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☑ Return To Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595

Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold Low limits needed for Mercury (MDL 0 01 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company:	Date/Time: 2-27-23/1100	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1300	Received:		Date/Time: 2/27/23 1600
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

3/4/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Analysis Requested

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 02/28/23 1018	Company: EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, AA=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 02/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129044-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

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Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1402				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208498.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230226-2 (570-129044-3)	2/26/23	08:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-1-23 15:40	EC		3-1-23 15:40	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - 1078

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208636.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129044-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements: 6325 3453 8693

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		02/28/23 1124	EC		3/1/23 9:45	EMS
2	Relinquished by:	Date/Time	Company	Received by	Date/Time	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.: ND	Cooler Temperature(s) °C and Other Remarks: 1.0 Dry 1.3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129044-2

Login Number: 129044
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129044-2

Login Number: 129044
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/01/23 01:18 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/11/2023 12:47:43 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129044-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

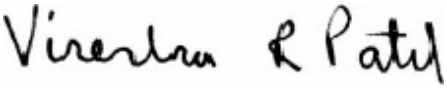
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123099-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129044-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129044-3

Comments
mo additional cos s entT.

Receipt
phe Tas wleT v ere recei6ed on 2S27S202P U:00 j N. q nleTT otherv iTe noted belov , the Tas wleT arri6ed in Food condition, and v here reuf ired, wrowerly wreTer6ed and on ice. phe tes weratf reT o° the 2 coolerT at receiwt tis e v ere 2.7GC and P.0GC.

Lab Admin
mo analytical or uf ality iTTf eT v ere noted, other than thoTe deTcribed in the De°initionTSQloTTary waFe.

Subcontract Work
Nethod Ef ant-pray - 4. Coli - le6el 3 reuf ired: phiT s ethod v aT Tf bcontracted to 4nthalwy Analytical - garkley. phe Tf bcontract laboratory certi°ication iT di°erent °ros that o° the °acility iTTf inF the °inal rewort.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-3

Method	Method Description	Protocol	Laboratory
Subcontract	Quant-Tray - E. Coli - level 4 required	None	Enthalpy

Protocol References:

None = None

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
/ roSsctBgite: FoeinL ggRMIgEA and FW/

Job ID: 570-1290PP-j

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-1290PP-1	_/ FWC3202j 0224	6 ater	02B24B2j 08:j 0	02B27B2j 18:00

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 480483
Report Level: II
Report Date: 03/08/2023

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Location: Boeing SSFL ISRA and BMP - Project #57014595

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Lab Job #: 480483
Location: Boeing SSFL ISRA and BMP - Project #57014595
Date Received: 02/27/23

Sample ID	Lab ID	Collected	Matrix
EPBMC_20230226 (570-129044-1)	480483-001	02/26/23 08:30	Water

ENTHALPY ANALYTICAL

Case Narrative

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	480483
	Location:	Boeing SSFL ISRA and BMP - Project #57014595
	Date Received:	02/27/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 02/27/23. The sample was received cold and intact.

480483

Chain of Custody Record

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

eurofins Environment Testing

9/26/14

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208487.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-129044-3
Address: 931 W. Barkley Ave,	Due Date Requested: 3/10/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by:	Date: Time: Method of Shipment:

Relinquished by:	Date/Time: 2/27/23 1721	Company EC	Received by:	Date/Time: 2-27-23 1721	Company ET
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins

Project: Boeing SSFL ISRA and BMP

Date Received: 2/27/23

Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: _____ #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: _____ #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✔		
Are sample IDs present?	✔		
Are sampling dates & times present?	✔		
Is a relinquished signature present?	✔		
Are the tests required clearly indicated on the COC?	✔		
Are custody seals present?		✔	
If custody seals are present, were they intact?			✔
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✔
Did all samples arrive intact? If no, indicate in Section 4 below.	✔		
Did all bottle labels agree with COC? (ID, dates and times)	✔		
Were the samples collected in the correct containers for the required tests?	✔		
Are the containers labeled with the correct preservatives?	✔		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✔
Was a sufficient amount of sample submitted for the requested tests?	✔		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 2-27-23

ENTHALPY ANALYTICAL

Analysis Results for 480483

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Lab Job #: 480483
Location: Boeing SSFL ISRA and BMP - Project #57014595
Date Received: 02/27/23

Sample ID:	Lab ID: 480483-001	Collected: 02/26/23 08:30
EPBMC_20230226 (570-129044-1)	Matrix: Water	

480483-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: SM 9223Bb									
Coliform, E. Coli	**48**	H	MPN/100ml	1.0	1	308595	02/27/23 18:19	02/28/23 14:42	VLC

H Holding time was exceeded

1 of 1

Results for any subcontracted analyses are not included in this section.

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129044

570-129044 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBMC_20230226	2/26/23	0830	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EB_20230226-1	2/26/23	0830	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 0830
																									DO (mg/L) 13.49
																									pH 7.35
																									Temp (°C/°F) 46.8
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1200
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level I Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, RL 0.005 ug/L

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-23/1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

3.1/3.0, 2.8/2.7 SC12

Page 15 of 22

1
2

4/11/2023

SAP COC 2019/2020 VERSION 3

129094

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below _____			
(619) 280-9415 FAX	☑ 2 weeks			Job / SDG No.:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E625.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBMC_20230226	2/26/23	0830	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	0830	TB	WM	1	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold Low limits needed for Mercury (MDL 0 01 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company:	Date/Time: 2-27-23/1100	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1300	Received:		Date/Time: 2/27/23 1600
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

4/11/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 02/28/23 1018	Company: EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, AA=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 02/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129044-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Y	Trizma
		Z	other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 2/28/23 1402	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/11/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208498.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	7	See Attached Instructions
TB_20230226-2 (570-129044-3)	2/26/23	08:30 Pacific		Water			X				2	See Attached Instructions
							(4)	(2)	(2)	(1)		# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3-1-23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - 1078

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129044-3

Login Number: 129044
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/21/2023 2:56:43 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129044-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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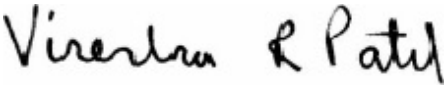
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-4

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129044-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129044-4

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7º C and 3.0º C.

Dioxin
Method 1613B: The automated ending resolution check scheduled to be performed on March 20, 2023 at approximately 22:23 did not print. A manual resolution check was performed, without retuning, at the end of the second sequence on March 21, 2023 at 10:21, which indicated that the instrument maintained 10,000 resolution. The approximately 12 hour delay in printing the ending resolution check has no impact on the data.

EPBMC_20230226 (570-129044-1), (CCV 320-662109/2), (LCS 320-659338/2-A), (LCSD 320-659338/3-A), (MB 320-659338/1-A) and (WDM 320-662109/1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-4

Client Sample ID: EPBMC_20230226

Lab Sample ID: 570-129044-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000017	J,DX q MB	0.000052	0.00000029	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000012	J,DX MB	0.000052	0.00000027	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000020	J,DX MB	0.000052	0.00000031	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000018	J,DX MB	0.000052	0.00000034	ug/L	1		1613B	Total/NA
OCDD	0.0000077	J,DX MB	0.00010	0.00000035	ug/L	1		1613B	Total/NA
OCDF	0.0000014	J,DX MB	0.00010	0.00000045	ug/L	1		1613B	Total/NA
Total TCDD	0.0000013	J,DX q	0.000010	0.00000086	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000038	J,DX q MB	0.000052	0.00000028	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000012	J,DX MB	0.000052	0.00000027	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000043	J,DX MB	0.000052	0.00000031	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000018	J,DX MB	0.000052	0.00000035	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBMC420230226
Date Collected: 02/26/23 0v:30
Date Recei8ed: 02/27/23 1v:00

Lab Sample ID: 570-1290__-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000086	ug/L		03/09/23 04:30	03/20/23 18:26	1
2,3,7,8-TCDF	ND		0.000010	0.00000040	ug/L		03/09/23 04:30	03/20/23 18:26	1
1,2,3,7,8-PeCDD	ND		0.000052	0.00000049	ug/L		03/09/23 04:30	03/20/23 18:26	1
1,2,3,7,8-PeCDF	ND		0.000052	0.00000025	ug/L		03/09/23 04:30	03/20/23 18:26	1
2,3,4,7,8-PeCDF	ND		0.000052	0.00000027	ug/L		03/09/23 04:30	03/20/23 18:26	1
1,2,3,_,7,v-HxCDD	**0.0000017**	**J,DX q MB**	0.000052	0.00000029	ug/L		03/09/23 04:30	03/20/23 18:26	1
1,2,3,6,7,8-HxCDD	ND		0.000052	0.00000029	ug/L		03/09/23 04:30	03/20/23 18:26	1
1,2,3,7,8,9-HxCDD	ND		0.000052	0.00000026	ug/L		03/09/23 04:30	03/20/23 18:26	1
1,2,3,4,7,8-HxCDF	ND		0.000052	0.00000028	ug/L		03/09/23 04:30	03/20/23 18:26	1
1,2,3,6,7,8-HxCDF	ND		0.000052	0.00000028	ug/L		03/09/23 04:30	03/20/23 18:26	1
1,2,3,7,v,9-HxCDF	**0.0000012**	**J,DX MB**	0.000052	0.00000027	ug/L		03/09/23 04:30	03/20/23 18:26	1
2,3,4,6,7,8-HxCDF	ND		0.000052	0.00000026	ug/L		03/09/23 04:30	03/20/23 18:26	1
1,2,3,_,6,7,v-HpCDD	**0.0000020**	**J,DX MB**	0.000052	0.00000031	ug/L		03/09/23 04:30	03/20/23 18:26	1
1,2,3,_,6,7,v-HpCDF	**0.000001v**	**J,DX MB**	0.000052	0.00000034	ug/L		03/09/23 04:30	03/20/23 18:26	1
1,2,3,4,7,8,9-HpCDF	ND		0.000052	0.00000036	ug/L		03/09/23 04:30	03/20/23 18:26	1
OCDD	**0.0000077**	**J,DX MB**	0.00010	0.00000035	ug/L		03/09/23 04:30	03/20/23 18:26	1
OCDF	**0.000001_**	**J,DX MB**	0.00010	0.00000045	ug/L		03/09/23 04:30	03/20/23 18:26	1
Total TCDD	**0.0000013**	**J,DX q**	0.000010	0.00000086	ug/L		03/09/23 04:30	03/20/23 18:26	1
Total TCDF	ND		0.000010	0.00000040	ug/L		03/09/23 04:30	03/20/23 18:26	1
Total PeCDD	ND		0.000052	0.00000049	ug/L		03/09/23 04:30	03/20/23 18:26	1
Total PeCDF	ND		0.000052	0.00000032	ug/L		03/09/23 04:30	03/20/23 18:26	1
Total HxCDD	**0.000003v**	**J,DX q MB**	0.000052	0.00000028	ug/L		03/09/23 04:30	03/20/23 18:26	1
Total HxCDF	**0.0000012**	**J,DX MB**	0.000052	0.00000027	ug/L		03/09/23 04:30	03/20/23 18:26	1
Total HpCDD	**0.00000_3**	**J,DX MB**	0.000052	0.00000031	ug/L		03/09/23 04:30	03/20/23 18:26	1
Total HpCDF	**0.000001v**	**J,DX MB**	0.000052	0.00000035	ug/L		03/09/23 04:30	03/20/23 18:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*75*		*26 - 154*	*03/09/23 04:30*	*03/20/23 18:25*	*1*
13C-2,3,7,8-TCDF	*71*		*24 - 159*	*03/09/23 04:30*	*03/20/23 18:25*	*1*
13C-1,2,3,7,8-PeCDD	*94*		*26 - 181*	*03/09/23 04:30*	*03/20/23 18:25*	*1*
13C-1,2,3,7,8-PeCDF	*83*		*24 - 186*	*03/09/23 04:30*	*03/20/23 18:25*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBMC420230226
Date Collected: 02/26/23 0v:30
Date Recei8ed: 02/27/23 1v:00

Lab Sample ID: 570-1290__-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	85		21 - 178	03/09/23 04:30	03/20/23 18:25	1
13C-1,2,3,4,7,8-HxCDD	78		32 - 141	03/09/23 04:30	03/20/23 18:25	1
13C-1,2,3,5,7,8-HxCDD	79		28 - 130	03/09/23 04:30	03/20/23 18:25	1
13C-1,2,3,4,7,8-HxCDF	58		25 - 162	03/09/23 04:30	03/20/23 18:25	1
13C-1,2,3,5,7,8-HxCDF	73		25 - 123	03/09/23 04:30	03/20/23 18:25	1
13C-1,2,3,7,8,9-HxCDF	78		29 - 147	03/09/23 04:30	03/20/23 18:25	1
13C-2,3,4,5,7,8-HxCDF	75		28 - 135	03/09/23 04:30	03/20/23 18:25	1
13C-1,2,3,4,5,7,8-HpCDD	95		23 - 140	03/09/23 04:30	03/20/23 18:25	1
13C-1,2,3,4,5,7,8-HpCDF	77		28 - 143	03/09/23 04:30	03/20/23 18:25	1
13C-1,2,3,4,7,8,9-HpCDF	87		25 - 138	03/09/23 04:30	03/20/23 18:25	1
13C-OCDD	94		17 - 167	03/09/23 04:30	03/20/23 18:25	1
13C-OCDF	85		17 - 167	03/09/23 04:30	03/20/23 18:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	88		36 - 197	03/09/23 04:30	03/20/23 18:25	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-129044-1	EPBMC_20230226	88
MB 320-659338/1-A	Method Blank	84

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-659338/2-A	Lab Control Sample	85
LCSD 320-659338/3-A	Lab Control Sample Dup	86

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-129044-1	EPBMC_20230226	76	71	94	83	86	78	79	68
MB 320-659338/1-A	Method Blank	71	62	90	77	78	70	72	59

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-129044-1	EPBMC_20230226	73	78	76	96	77	87	94	86
MB 320-659338/1-A	Method Blank	65	71	69	88	71	81	89	80

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-659338/2-A	Lab Control Sample	65	58	83	71	70	63	62	51
LCSD 320-659338/3-A	Lab Control Sample Dup	77	70	96	82	84	72	68	57

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-659338/2-A	Lab Control Sample	56	65	61	78	63	72	78	71
LCSD 320-659338/3-A	Lab Control Sample Dup	64	75	71	91	71	84	93	84

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-4

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-659338/1-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 659338

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000097	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,7,8-TCDF	ND		0.000010	0.00000055	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000045	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000037	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8-HxCDD	0.00000174	J,DX	0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,6,7,8-HxCDD	0.000000455	J,DX q	0.000050	0.00000029	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000025	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8,9-HxCDF	0.000000967	J,DX	0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,6,7,8-HpCDD	0.00000104	J,DX q	0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,6,7,8-HpCDF	0.00000126	J,DX	0.000050	0.00000029	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000032	ug/L		03/09/23 04:30	03/20/23 13:41	1
OCDD	0.0000112	J,DX	0.00010	0.00000031	ug/L		03/09/23 04:30	03/20/23 13:41	1
OCDF	0.00000213	J,DX q	0.00010	0.00000039	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total TCDD	ND		0.000010	0.00000097	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total TCDF	ND		0.000010	0.00000055	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total PeCDD	ND		0.000050	0.00000045	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total PeCDF	ND		0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HxCDD	0.00000263	J,DX q	0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HxCDF	0.000000967	J,DX	0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HpCDD	0.00000272	J,DX q	0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HpCDF	0.00000126	J,DX	0.000050	0.00000031	ug/L		03/09/23 04:30	03/20/23 13:41	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*03/09/23 04:30*	*03/20/23 13:41*	*1*
13C-2,3,7,8-TCDF	*62*		*24 - 169*	*03/09/23 04:30*	*03/20/23 13:41*	*1*
13C-1,2,3,7,8-PeCDD	*90*		*25 - 181*	*03/09/23 04:30*	*03/20/23 13:41*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-659338/1-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	77		24 - 185	03/09/23 04:30	03/20/23 13:41	1
13C-2,3,4,7,8-PeCDF	78		21 - 178	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8-HxCDD	70		32 - 141	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,6,7,8-HxCDD	72		28 - 130	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8-HxCDF	59		26 - 152	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,6,7,8-HxCDF	65		26 - 123	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,7,8,9-HxCDF	71		29 - 147	03/09/23 04:30	03/20/23 13:41	1
13C-2,3,4,6,7,8-HxCDF	69		28 - 136	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,6,7,8-HpCDD	88		23 - 140	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,6,7,8-HpCDF	71		28 - 143	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	03/09/23 04:30	03/20/23 13:41	1
13C-OCDD	89		17 - 157	03/09/23 04:30	03/20/23 13:41	1
13C-OCDF	80		17 - 157	03/09/23 04:30	03/20/23 13:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	84		35 - 197	03/09/23 04:30	03/20/23 13:41	1

Lab Sample ID: LCS 320-659338/2-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 659338

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000186		ug/L		93	67 - 158		
2,3,7,8-TCDF			0.000200	0.000212		ug/L		106	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000901		ug/L		90	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000947		ug/L		95	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000953		ug/L		95	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000912		ug/L		91	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.000959		ug/L		96	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000963		ug/L		96	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000953		ug/L		95	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000956		ug/L		96	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000924		ug/L		92	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000948		ug/L		95	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000934		ug/L		93	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000984		ug/L		98	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000935		ug/L		94	78 - 138		
OCDD			0.00200	0.00191		ug/L		96	78 - 144		
OCDF			0.00200	0.00195		ug/L		97	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	65		20 - 175
13C-2,3,7,8-TCDF	58		22 - 152
13C-1,2,3,7,8-PeCDD	83		21 - 227
13C-1,2,3,7,8-PeCDF	71		21 - 192
13C-2,3,4,7,8-PeCDF	70		13 - 328
13C-1,2,3,4,7,8-HxCDD	63		21 - 193
13C-1,2,3,6,7,8-HxCDD	62		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-659338/2-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	51		19 - 202
13C-1,2,3,6,7,8-HxCDF	56		21 - 159
13C-1,2,3,7,8,9-HxCDF	65		17 - 205
13C-2,3,4,6,7,8-HxCDF	61		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	78		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	63		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	72		20 - 186
13C-OCDD	78		13 - 199
13C-OCDF	71		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-659338/3-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 659338

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000197		ug/L		98	67 - 158	6	50
2,3,7,8-TCDF			0.000200	0.000218		ug/L		109	75 - 158	3	50
1,2,3,7,8-PeCDD			0.00100	0.000927		ug/L		93	70 - 142	3	50
1,2,3,7,8-PeCDF			0.00100	0.000974		ug/L		97	80 - 134	3	50
2,3,4,7,8-PeCDF			0.00100	0.000961		ug/L		96	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000919		ug/L		92	70 - 164	1	50
1,2,3,6,7,8-HxCDD			0.00100	0.00100		ug/L		100	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.00101		ug/L		101	64 - 162	4	50
1,2,3,4,7,8-HxCDF			0.00100	0.000989		ug/L		99	72 - 134	4	50
1,2,3,6,7,8-HxCDF			0.00100	0.000954		ug/L		95	84 - 130	0	50
1,2,3,7,8,9-HxCDF			0.00100	0.000953		ug/L		95	78 - 130	3	50
2,3,4,6,7,8-HxCDF			0.00100	0.000958		ug/L		96	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000942		ug/L		94	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000988		ug/L		99	82 - 122	0	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000957		ug/L		96	78 - 138	2	50
OCDD			0.00200	0.00195		ug/L		97	78 - 144	2	50
OCDF			0.00200	0.00199		ug/L		99	63 - 170	2	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 175
13C-2,3,7,8-TCDF	70		22 - 152
13C-1,2,3,7,8-PeCDD	96		21 - 227
13C-1,2,3,7,8-PeCDF	82		21 - 192
13C-2,3,4,7,8-PeCDF	84		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 193
13C-1,2,3,6,7,8-HxCDD	68		25 - 163
13C-1,2,3,4,7,8-HxCDF	57		19 - 202
13C-1,2,3,6,7,8-HxCDF	64		21 - 159
13C-1,2,3,7,8,9-HxCDF	75		17 - 205
13C-2,3,4,6,7,8-HxCDF	71		22 - 176

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-659338/3-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	91		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	71		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	84		20 - 186
13C-OCDD	93		13 - 199
13C-OCDF	84		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	86		31 - 191

Specialty Organics

Prep Batch: 659338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	1613B	
MB 320-659338/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-659338/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-659338/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 662109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	1613B	659338
MB 320-659338/1-A	Method Blank	Total/NA	Water	1613B	659338
LCS 320-659338/2-A	Lab Control Sample	Total/NA	Water	1613B	659338
LCSD 320-659338/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	659338

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-4

Client Sample ID: EPBMC_20230226
Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			958 mL	20.0 uL	659338	03/09/23 04:30	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	662109	03/20/23 18:26	DB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-4

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-23 *
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-4

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129044-1	EPBMC_20230226	Water	02/26/23 08:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129044

570-129044 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBMC_20230226	2/26/23	0830	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
5_20230226-1	2/26/23	0830	TB	WM	3	N	N														x				
																									EDBPJOJX
																									Time of Readings 0830
																									DO (mg/L) 13.49
																									pH 7.35
																									Temp (°C/°F) 46.8
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1200
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level I Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, RL 0.005 ug/L

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-23/1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

3.1/3.0, 2.8/2.7 SC12

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1
2

3/21/2023

SAP COC 2019/2020 VERSION 3

129094

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below _____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E625.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBMC_20230226	2/26/23	0830	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	0830	TB	WM	1 2	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold Low limits needed for Mercury (MDL 0 01 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company:	Date/Time: 2-27-23/1100	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1300	Received:		Date/Time: 2/27/23 1600
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

3/21/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		02/28/23 1018				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, AA=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 02/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129044-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Y	Trizma
		Z	other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	2/28/23 1402				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208498.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	7	See Attached Instructions
TB_20230226-2 (570-129044-3)	2/26/23	08:30 Pacific		Water			X				2	See Attached Instructions
							(4)	(2)	(2)	(1)		# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3-1-23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - 1078

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129044-4
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 2/28/23 1402	Company	Received by:	Date/Time: 3:03	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal		Cooler Temperature(s) °C and Other Remarks: 3.3w		

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129044-4

Login Number: 129044
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129044-4

Login Number: 129044
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/01/23 01:40 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/27/2023 10:19:29 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129044-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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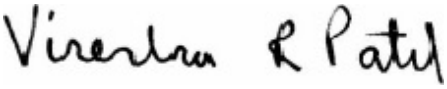
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/27/2023 10:19:29 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129044-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129044-5

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7º C and 3.0º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods EPA 608 - Pesticides/PCBs - PP list, VOCs- 2-CVE only (E624), Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-5

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs- 2-CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129044-1	EPBMC_20230226	Water	02/26/23 08:30	02/27/23 18:00
570-129044-3	TB_20230226-2	Water	02/26/23 08:30	02/27/23 18:00

Work Orders: 3C06016

Project: 570-129044-5

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 4/24/2023
Received Date: 3/1/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #:
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/01/23 with the Chain-of-Custody document. The samples were received in good condition, at 4.1 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: EPBMC_20230226 (570-129044-1) Sampled: 02/26/23 8:30 by Client
3C06016-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 525.2M			**Instr:** GCMS13				
Batch ID: W3C0830 **Preparation:** EPA 525.2/SPE			**Prepared:** 03/09/23 09:07				**Analyst:** EFC
Chlorpyrifos	ND	0.0040	0.010	ug/l	1	03/11/23	
Diazinon	ND	0.0034	0.010	ug/l	1	03/11/23	
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*87%*		*50-141*	*Conc: 0.435*		*03/11/23*	
Triphenyl phosphate	*109%*		*63-200*	*Conc: 0.547*		*03/11/23*	
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C0821 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/09/23 08:27				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.050	ug/l	1	03/28/23	O-05
Surrogate(s)							
Decachlorobiphenyl	*76%*		*33-133*	*Conc: 0.0758*		*03/28/23*	
Tetrachloro-meta-xylene	*79%*		*32-130*	*Conc: 0.0784*		*03/28/23*	
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C0490 **Preparation:** EPA 5030B			**Prepared:** 03/06/23 15:21				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l	1	03/06/23	O-09
Surrogate(s)							
1,2-Dichloroethane-d4	*106%*		*82-125*	*Conc: 53.0*		*03/06/23*	
4-Bromofluorobenzene	*98%*		*88-108*	*Conc: 48.9*		*03/06/23*	
Toluene-d8	*96%*		*92-112*	*Conc: 48.2*		*03/06/23*	
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32				**Analyst:** pjs

Sample Results

(Continued)

Sample: EPBMC_20230226 (570-129044-1) Sampled: 02/26/23 8:30 by Client
3C06016-01 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32				**Analyst:** pjs
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l	1	04/05/23	Q-01

Sample: TB_20230226-2 (570-129044-3) Sampled: 02/26/23 8:30 by Client
3C06016-02 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C0490 **Preparation:** EPA 5030B			**Prepared:** 03/06/23 15:21				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l	1	03/06/23	O-09
Surrogate(s)							
1,2-Dichloroethane-d4	*103%*		*82-125*	*Conc: 51.3*		*03/06/23*	
4-Bromofluorobenzene	*100%*		*88-108*	*Conc: 49.8*		*03/06/23*	
Toluene-d8	*99%*		*92-112*	*Conc: 49.6*		*03/06/23*	

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www.wecklabs.com

Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C0821-BLK1)					**Prepared: 03/09/23**	**Analyzed: 03/28/23**					
Endrin aldehyde	ND	0.0019	0.050	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.105*			*ug/l*	*0.100*		*105*	*33-133*			
Tetrachloro-meta-xylene	*0.0868*			*ug/l*	*0.100*		*87*	*32-130*			
LCS (W3C0821-BS1)					**Prepared: 03/09/23**	**Analyzed: 03/28/23**					
Endrin aldehyde	0.0829	0.0019	0.050	ug/l	0.100		83	18-130			
Surrogate(s)											
Decachlorobiphenyl	*0.107*			*ug/l*	*0.100*		*107*	*33-133*			
Tetrachloro-meta-xylene	*0.0835*			*ug/l*	*0.100*		*84*	*32-130*			
LCS Dup (W3C0821-BSD1)					**Prepared: 03/09/23**	**Analyzed: 03/28/23**					
Endrin aldehyde	0.0899	0.0019	0.050	ug/l	0.100		90	18-130	8	30	
Surrogate(s)											
Decachlorobiphenyl	*0.110*			*ug/l*	*0.100*		*110*	*33-133*			
Tetrachloro-meta-xylene	*0.0808*			*ug/l*	*0.100*		*81*	*32-130*			

Hydrazine by LCMS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2019-BLK1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l							
LCS (W3C2019-BS1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.81	0.62	2.0	ug/l	20.0		14	50-150			Q-01
Matrix Spike (W3C2019-MS1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.11	0.62	2.0	ug/l	20.0	*ND*	11	50-150			Q-01
Matrix Spike Dup (W3C2019-MSD1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.45	0.62	2.0	ug/l	20.0	*ND*	12	50-150	15	30	Q-01

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www.wecklabs.com

Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C0830-BLK1)					**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	ND	0.0040	0.010	ug/l							
Diazinon	ND	0.0034	0.010	ug/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.458*			*ug/l*	*0.500*		*92*	*50-141*			
Triphenyl phosphate	*0.489*			*ug/l*	*0.500*		*98*	*63-200*			
LCS (W3C0830-BS1)					**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	0.0492	0.0040	0.010	ug/l	0.0500		98	63-145			
Diazinon	0.0433	0.0034	0.010	ug/l	0.0500		87	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.451*			*ug/l*	*0.500*		*90*	*50-141*			
Triphenyl phosphate	*0.540*			*ug/l*	*0.500*		*108*	*63-200*			
Matrix Spike (W3C0830-MS1)	**Source: 3C06015-01**				**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	0.0458	0.0040	0.010	ug/l	0.0500	*ND*	92	37-168			
Diazinon	0.0434	0.0034	0.010	ug/l	0.0500	*ND*	87	36-153			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.463*			*ug/l*	*0.500*		*93*	*50-141*			
Triphenyl phosphate	*0.536*			*ug/l*	*0.500*		*107*	*63-200*			
Matrix Spike Dup (W3C0830-MSD1)	**Source: 3C06015-01**				**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	0.0519	0.0040	0.010	ug/l	0.0500	*ND*	104	37-168	12	30	
Diazinon	0.0438	0.0034	0.010	ug/l	0.0500	*ND*	88	36-153	0.9	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.483*			*ug/l*	*0.500*		*97*	*50-141*			
Triphenyl phosphate	*0.551*			*ug/l*	*0.500*		*110*	*63-200*			

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C0490-BLK1)					**Prepared & Analyzed: 03/06/23**						
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l							
Surrogate(s)											
1,2-Dichloroethane-d4	*51.1*			*ug/l*	*50.0*		*102*	*82-125*			
4-Bromofluorobenzene	*50.5*			*ug/l*	*50.0*		*101*	*88-108*			
Toluene-d8	*50.4*			*ug/l*	*50.0*		*101*	*92-112*			
LCS (W3C0490-BS1)					**Prepared & Analyzed: 03/06/23**						
2-Chloroethyl vinyl ether	56.9	0.19	5.0	ug/l	50.0		114	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*50.0*			*ug/l*	*50.0*		*100*	*82-125*			
4-Bromofluorobenzene	*51.9*			*ug/l*	*50.0*		*104*	*88-108*			
Toluene-d8	*54.4*			*ug/l*	*50.0*		*109*	*92-112*			
LCS Dup (W3C0490-BSD1)					**Prepared: 03/06/23 Analyzed: 03/09/23**						
2-Chloroethyl vinyl ether	56.7	0.19	5.0	ug/l	50.0		113	0.1-305	0.4	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*48.0*			*ug/l*	*50.0*		*96*	*82-125*			
4-Bromofluorobenzene	*52.8*			*ug/l*	*50.0*		*106*	*88-108*			
Toluene-d8	*51.6*			*ug/l*	*50.0*		*103*	*92-112*			

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Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
O-05	The extraction for this analyte was performed outside of the EPA recommended holding time.
O-09	This sample was received with the EPA recommended holding time expired.
Q-01	The recovery of this analyte in QC sample was outside control limits. Sample was justified as ND based on the low level standard at or below the reporting limit.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Analyses Accreditation Summary

Analyte	CAS #	Not By NELAP	ANAB ISO 17025
EPA 8315M in Water			
Monomethylhydrazine (MMH)	60-34-4	✓	

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

3C060116

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208498.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	7	See Attached Instructions
TB_20230226-2 (570-129044-3)	2/26/23	08:30 Pacific		Water			X				2	See Attached Instructions
							(4)	(2)	(2)	(1)		# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-1-23 15:40	EC		3-1-23 15:40	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - IR78

ICOC No:
570-208498

Containers

Count	Container Type	Preservative
5	Amber Glass 1 liter - unpreserved	None
4	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (EPA 608 - Pesticides/PCBs - PP list)	Level IV package, MDL, EQUIS 5C
1	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	525.2- 24 hour extraction for Diaznon and Chyloriphcus- level IV package needed.
1	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV package, MDL, EQUIS 5C
1, 3	SUBCONTRACT	SUB (VOCs- 2CVE only(E624))	Level IV package, MDL, EQUIS 5C

7

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: 3C06016
WKO Logged by: Jaime Gomez
Samples Checked by: Jaime Gomez

Date/Time Received: 03/01/23 @ 15:40
# of Samples: 02
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
		☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	4.1 °C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)				
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
		☐	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☒	☐	☐	pH paper Lot# 2071882
	Free Chlorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot# 061221E
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☐	

PM Comments

Sample Receipt Checklist Prepared by:

Signature: Jaime Gomez Date: 03/06/23

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

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129044

570-129044 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
PBMC_20230226	2/26/23	0830	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
FB_20230226-1	2/26/23	0830	TB	WM	3	N	N														x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

EDBPJOUX
Time of Readings 0830
DO (mg/L) 13.49
pH 7.35
Temp (°C/°F) 46.8
TRC (mg/L) 0.00
Checked by:
Date/Time: 2-26-2023/1200

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, RL 0.005 ug/L

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-23/1120	Received by: ECI	Date/Time: 2/27/23 1120
Relinquished by:	Company: ECI	Date/Time: 2/27/23 1800	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

3.1/3.0, 2.8/2.7 SC12

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2

4/27/2023

SAP COC 2019/2020 VERSION 3

129094

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below _____			
(619) 280-9415 FAX	☑ 2 weeks			Job / SDG No.:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Verk L bs Hacie ia H nts, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Veck L bs n Hacl da Height A	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Lab en CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck L n H l- da eig ts, A	Chlorpyrifos, Diazinon (E625.2) Wer Labs n Hacienda Heights CA	Asbestos (E100.2)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBMC_20230226	2/26/23	0830	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	0830	TB	WM	1 2	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☑ Return To Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595

Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@ha eyaldrich com Report Level II Data Package and pro de EDD All dissolved sample are to be filtered within 24 hours of rece p ven those placed on hold Low limits needed for Mercury (MDL 0 01 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by	Company	Date/Time: 2-27-23/1100	Received	EC	Date/Time: 2/27/23 1120
Relinquished by	Company EC	Date/Time: 2/27/23 1300	Received		Date/Time: 2/27/23 1600
Relinquished by	Company	Date/Time:	Received		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:

A HCL
B NaOH
C Zn Acetate
D Nitric Acid
E NaHSO4
F MeOH
G Amchlor
H Ascorbic Acid
I Ice
J DI Water
K EDTA
L EDA
M Hexane
N None
O AsNaO2
P Na2O4S
Q Na2SO3
R Na2S2O3
S H2SO4
T TSP Dodecahydrate
U Acetone
V MCAA
W pH 4-5
Y Trizma
Z other (specify)

Other:

Analysis Requested

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901 1_Cs/Fill_Geo_0 K-40 and Cesium-137	901 1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901 1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 02/28/23 1018	Company: EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	[signature]	02/28/23 1018	EC			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129044-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Y	Trizma
		Z	other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	2/28/23 1402				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/27/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208498.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
Preservation Code:												
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	7	See Attached Instructions
TB_20230226-2 (570-129044-3)	2/26/23	08:30 Pacific		Water			X				2	See Attached Instructions
							(4)	(2)	(2)	(1)		# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	3-1-23 15:40	EC	[signature]	3-1-23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - 1078

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129044-5

Login Number: 129044
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 11:07:35 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129044-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

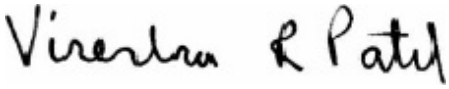
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
4/9/2023 11:07:35 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-6

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129044-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129044-6

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7º C and 3.0º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129044-1	EPBMC_20230226	Water	02/26/23 08:30	02/27/23 18:00

aquatic bioassay & consulting laboratories, inc

March 22, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	EPBMC_20230226
DATE RECEIVED:	27 Feb - 2023
ABC LAB. NO.:	CSE0223.189

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = 0.56 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Report Date: 21 Mar-23 16:51 (p 1 of 1)
Test Code/ID: CSE0223.189cer / 06-7947-7572

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	05-7590-1527	Test Type:	Reproduction-Survival (7d)	Analyst:			
Start Date:	28 Feb-23 14:10	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water		
Ending Date:	07 Mar-23 14:16	Species:	Ceriodaphnia dubia	Brine:	Not Applicable		
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO	Age:	<24
Sample ID:	02-3524-6454	Code:	CSE0223.189cer	Project:			
Sample Date:	26 Feb-23 08:30	Material:	Sample Water	Source:	Bioassay Report		
Receipt Date:	27 Feb-23 13:45	CAS (PC):		Station:	EPBMC_20230226		
Sample Age:	54h (3.5 °C)	Client:	Eurofins Calscience				

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
03-0681-9357	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
04-3171-2696	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
03-0681-9357	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
04-3171-2696	Reproduction	Control Resp	26.55	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	26.55	25.18	27.92	19	31	0.6548	2.929	11.03%	0.00%
100		20	26.4	25.04	27.76	21	31	0.6505	2.909	11.02%	0.56%

7d Survival Rate Detail

MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail

MD5: D63B3EE1BEE513DF83A3045B7A2ABAFA

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	28	29	29	27	25	29	26	29	28	27
		27	28	27	23	26	31	28	24	19	21
100		27	25	31	22	21	22	25	26	26	31
		30	28	27	25	25	25	26	31	28	27

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Report Date: 21 Mar-23 16:51 (p 1 of 2)
Test Code/ID: CSE0223.189cer / 06-7947-7572

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	04-3171-2696	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	21 Mar-23 16:49	Analysis:	Parametric Bioequivalence-Two Sample	Status Level:	1
Edit Date:	18 Mar-23 12:55	MD5 Hash:	D63B3EE1BEE513DF83A3045B7A2ABAF	Editor ID:	007-730-798-8
Batch ID:	05-7590-1527	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	28 Feb-23 14:10	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	07 Mar-23 14:16	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	02-3524-6454	Code:	CSE0223.189cer	Project:	
Sample Date:	26 Feb-23 08:30	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	27 Feb-23 13:45	CAS (PC):		Station:	EPBMC_20230226
Sample Age:	54h (3.5 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	35	7.959	0.852	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	26.55	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.225	0.225	1	0.02641	0.8718	Non-Significant Effect
Error	323.75	8.51974	38			
Total	323.975		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	0.008987	7.353	0.9250	Equal Variances
	Mod Levene Equality of Variance Test	0.05694	7.353	0.8127	Equal Variances
	Variance Ratio F Test	1.013	3.432	0.9772	Equal Variances
Distribution	Anderson-Darling A2 Test	0.6101	3.878	0.1136	Normal Distribution
	D'Agostino Kurtosis Test	0.5948	2.576	0.5520	Normal Distribution
	D'Agostino Skewness Test	1.533	2.576	0.1252	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	2.705	9.21	0.2586	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1203	0.1617	0.1480	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9564	0.9236	0.1257	Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	26.55	25.18	27.92	27	19	31	0.6548	11.03%	0.00%
100		20	26.4	25.04	27.76	26	21	31	0.6505	11.02%	0.56%

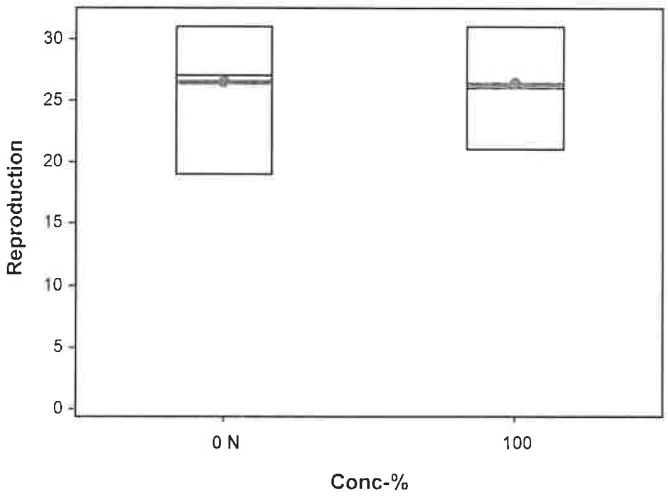
Reproduction Detail

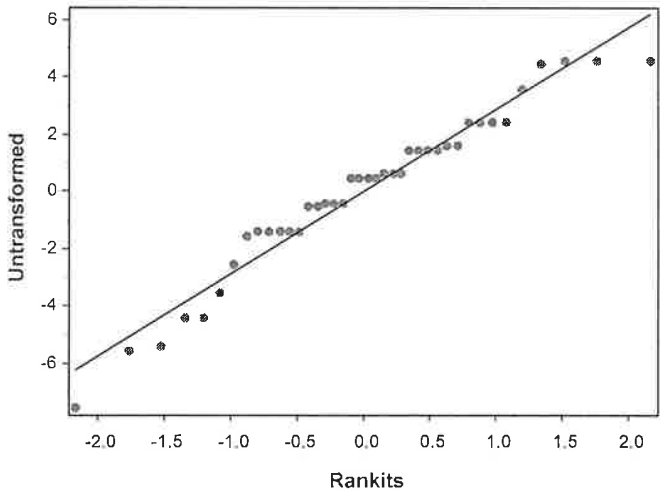
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	28	29	29	27	25	29	26	29	28	27
		27	28	27	23	26	31	28	24	19	21
100		27	25	31	22	21	22	25	26	26	31
		30	28	27	25	25	25	26	31	28	27

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	04-3171-2696	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:49	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	18 Mar-23 12:55	**MD5 Hash:**	D63B3EE1BEE513DF83A3045B7A2ABAF	**Editor ID:**	007-730-798-8

Graphics





CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	03-0681-9357	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:48	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	18 Mar-23 12:55	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	007-730-798-8
Batch ID:	05-7590-1527	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	28 Feb-23 14:10	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	07 Mar-23 14:16	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	02-3524-6454	**Code:**	CSE0223.189cer	**Project:**	
Sample Date:	26 Feb-23 08:30	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	EPBMC_20230226
Sample Age:	54h (3.5 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

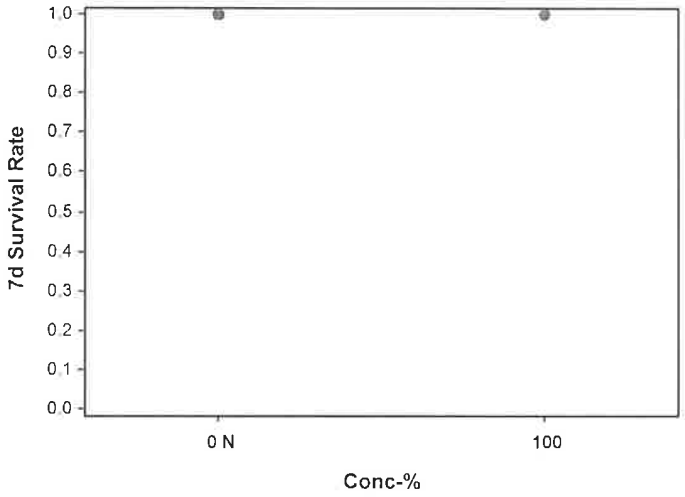
7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	03-0681-9357	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:48	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	18 Mar-23 12:55	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	007-730-798-8

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	05-7590-1527	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**		
Start Date:	28 Feb-23 14:10	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	07 Mar-23 14:16	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24
Sample ID:	02-3524-6454	**Code:**	CSE0223.189cer	**Project:**		
Sample Date:	26 Feb-23 08:30	**Material:**	Sample Water	**Source:**	Bioassay Report	
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	EPBMC_20230226	
Sample Age:	54h (3.5 °C)	**Client:**	Eurofins Calscience			

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	62.62	62.19	63.06	62	63	0.06469	0.5175	0.83%	0
100		8	178	178	178	178	178	0	0	0.00%	0
Overall		16	120.3	88.56	152.1	62	178	14.9	59.58	49.52%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.6	370	377.3	369	380	0.5467	4.373	1.17%	0
100		8	1242	1237	1246	1233	1249	0.6942	5.553	0.45%	0
Overall		16	807.6	568.8	1046	369	1249	112.1	448.3	55.50%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.887	7.712	8.063	7.6	8.2	0.02625	0.21	2.66%	0
100		8	7.775	7.688	7.862	7.6	7.9	0.01294	0.1035	1.33%	0
Overall		16	7.831	7.741	7.922	7.6	8.2	0.04254	0.1702	2.17%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	96.38	95.94	96.81	96	97	0.06469	0.5175	0.54%	0
100		8	395	395	395	395	395	0	0	0.00%	0
Overall		16	245.7	163.5	327.9	96	395	38.55	154.2	62.77%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8.038	7.994	8.081	8	8.1	0.00647	0.05176	0.64%	0
100		8	7.9	7.899	7.901	7.9	7.9	0	0	0.00%	0
Overall		16	7.969	7.926	8.011	7.9	8.1	0.01983	0.07932	1.00%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24	24	24	24	24	0	0	0.00%	0
Overall		16	24	24	24	24	24	0	0	0.00%	0 (0%)

Temp. deg. C = 3.5°C

Chlorine (mg/L) = <0.1

NH3 (mg/L) = <0.1

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

eurofins
Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller
Haley & Aldrich, Inc	Tel/Fax: (520) 289-8606
5333 Mission Center Road, Suite 300	Analysis Turnaround Time
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS
(619) 280-9210 Phone	TAT if different from Below: ____
(619) 243-9415 FAX	☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day
H&A Project Number: 129095-020-001-08	
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	
H&A PO #	

H&A Site Contact:
Lab Contact: Virendra Patel (714) 895-5494

Date: 2-22-2023
Carrier:

COC No: 2 of 2 COCs
Sampler:

For Lab Use Only:
Walk-in Client
Lab Sampling

Job / SDG No:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F)) 1-1L Poly	Conductivity (SM2510B / E120.1) 1-500mL Poly	Oil & Grease (E1664A-HEM) 2-1L Amber	VOCs + only A+A+2CVE (E624) 3-40mL VOA	TPH: gas (GRO(C4-C12)) (SW8015B) 3-40mL VOA	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B) 2-1L Amber	DOC5 (20 degrees C) (E405.1 (SM5310B, D-DOC-AC)) 1-1L Poly	Surfactants (MBAS) (SM5540C/E425.1) 2-500mL Poly	Turbidity, TDS (SM2540C/E160.1) 1-500mL Poly	Ammonia-N (E350.2) 1-500mL Poly	Priority Pollutants-Pesticides+PCBs (E608) 2-1L Amber	Priority Pollutants-SVOCs (E625) 2-1L Amber	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) 8-1 Gal Cube	1,4-Dioxane (E624 (SW8260B_SIM)) 3-40mL VOA	Total Organic Carbon (415.2 (SM 5310B)) 1-1L Amber	Monomethyl hydrazine (SW8315M/DV WC-0077) 1-1L Amber	Chlorpyrifos, Diazinon (E525.2) 2-1L Amber	Asbestos (E100.2) 1-1L Poly	
EPBMC_20230226	2/26/23	0830	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	0830	TB	WM	1/2	N	N				X															
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH, 6=Na2S2O3, 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are used up based on preservation only need to be partially filled to meet the volume requirements as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Disposal By Lab ☐ Archive

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seal Intact ☐ Yes	Custody Seal No.				
Relinquished by	Company: H&A	Date/Time: 2/27/23 1120	Received by	Company: EC	Date/Time: 2/27/23 1120
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company: H&A	Date/Time: 2-27-23 1345	Received by	Company	Date/Time: 2.27.23 1345

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

* Hand-delivered to ABC with copy of COC

SAP COC 2019/2020 VERSION 3

189

Scanned with CamScanner 4/9/2023

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 7 February - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 15.00 ug/l
EC50 = 20.00 ug/l

ENDPOINT: REPRODUCTION

NOEC = 10.00 ug/l

IC25 = 12.18 ug/l
IC50 = 18.12 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon		
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water		
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable		
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:**	<24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX		
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant		
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX		
Sample Age:	---	**Client:**	ABC Labs				

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
12-2134-6724	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	✓	10	30	17.32	---	1
01-7826-1344	Reproduction	Dunnett Multiple Comparison Test	✓	10	30	17.32	14.9%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
10-0781-6132	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	13	13	13	1
				EC20	14	14	14	
				EC25	15	15	15	
				EC40	18	18	18	
				EC50	20	20	20	
20-1572-0105	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	9.744	8.161	12.04	1
			✓	IC20	11	9.214	13.1	
			✓	IC25	12.18	10.33	14.15	
			✓	IC40	15.75	14.27	17.32	
			✓	IC50	18.12	16.89	19.44	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
10-0781-6132	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
12-2134-6724	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
01-7826-1344	Reproduction	Control Resp	21.6	15	<<	Yes	Passes Criteria
20-1572-0105	Reproduction	Control Resp	21.6	15	<<	Yes	Passes Criteria
01-7826-1344	Reproduction	PMSD	0.1488	0.13	0.47	Yes	Passes Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	21.6	18.77	24.43	16	29	1.249	3.95	18.29%	0.00%
3		10	27.1	24.85	29.35	21	32	0.9939	3.143	11.60%	-25.46%
5		10	27.2	25.39	29.01	23	31	0.8	2.53	9.30%	-25.93%
10		10	21.3	18.67	23.93	17	28	1.165	3.683	17.29%	1.39%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail MD5: E68F14682D021D024F00396964E3E9BD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail MD5: B6584EF080BB39328ADF89E906DB2ACD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	01-7826-1344	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	10	30	17.32	---	3.215	14.88%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	-3.649	2.133	3.215	CDF	1.0000	Non-Significant Effect
		5	18	-3.715	2.133	3.215	CDF	1.0000	Non-Significant Effect
		10	18	0.199	2.133	3.215	CDF	0.6730	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	21.6	15	<<	Yes	Passes Criteria
PMSD	0.1488	0.13	0.47	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	325.4	108.467	3	9.547	8.9E-05	Significant Effect
Error	409	11.3611	36			
Total	734.4		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	1.886	11.34	0.5963	Equal Variances
	Levene Equality of Variance Test	0.7841	4.377	0.5107	Equal Variances
	Mod Levene Equality of Variance Test	0.5917	4.377	0.6245	Equal Variances
Distribution	Anderson-Darling A2 Test	0.1802	3.878	0.9718	Normal Distribution
	D'Agostino Kurtosis Test	0.2514	2.576	0.8015	Normal Distribution
	D'Agostino Skewness Test	0.6674	2.576	0.5045	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.5086	9.21	0.7754	Normal Distribution
	Kolmogorov-Smirnov D Test	0.06346	0.1617	1.0000	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9856	0.9236	0.8811	Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	21.6	18.77	24.43	22.75	16	29	1.249	18.29%	0.00%
3		10	27.1	24.85	29.35	27	21	32	0.9939	11.60%	-25.46%
5		10	27.2	25.39	29.01	27.67	23	31	0.8	9.30%	-25.93%
10		10	21.3	18.67	23.93	20.5	17	28	1.165	17.29%	1.39%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

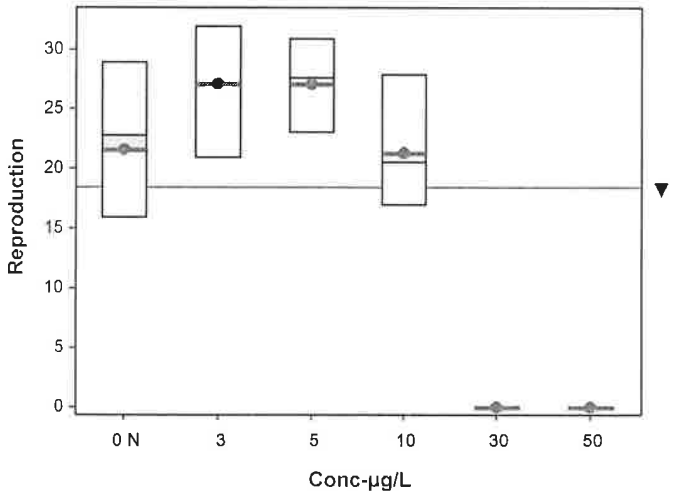
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

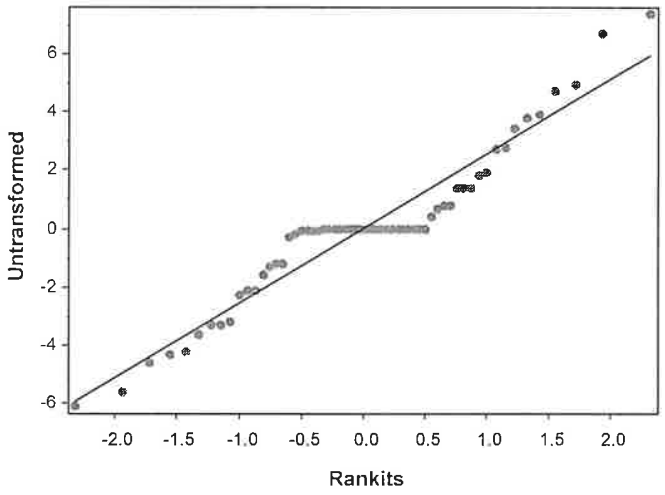
Analysis ID:	01-7826-1344	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Graphics





CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	10-0781-6132	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	13	13	13
EC20	14	14	14
EC25	15	15	15
EC40	18	18	18
EC50	20	20	20

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	**Code**	**Count**	**Mean**	**Median**	**Min**	**Max**	**CV%**	**%Effect**	**ΣA/ΣB**	**Mean**	**%Effect**
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

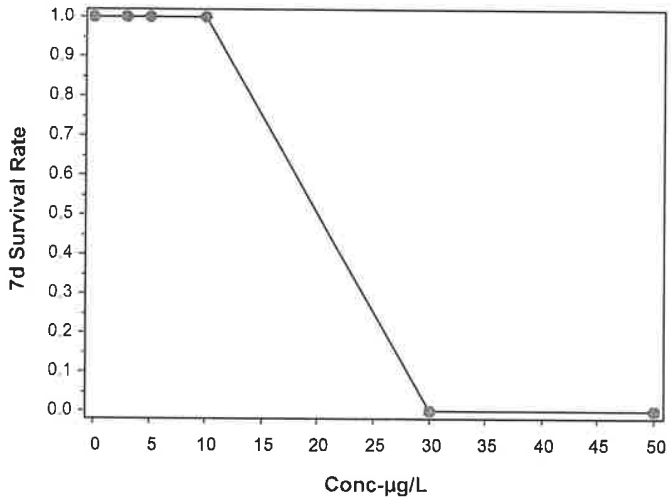
7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	10-0781-6132	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8

Graphics



Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-1572-0105	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1451893	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	21.6	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	9.744	8.161	12.04
IC20	11	9.214	13.1
IC25	12.18	10.33	14.15
IC40	15.75	14.27	17.32
IC50	18.12	16.89	19.44

Reproduction Summary

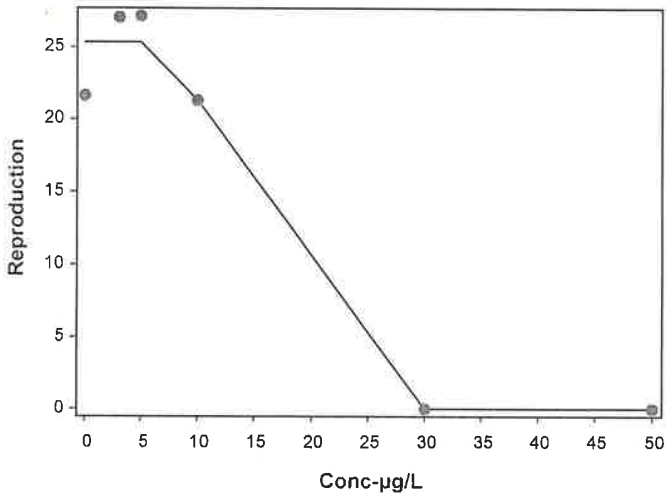
			Calculated Variate						Isotonic Variate	
Conc-µg/L	**Code**	**Count**	**Mean**	**Median**	**Min**	**Max**	**CV%**	**%Effect**	**Mean**	**%Effect**
0	N	10	21.6	22.75	16	29	18.29%	0.00%	25.3	0.00%
3		10	27.1	27	21	32	11.60%	-25.46%	25.3	0.00%
5		10	27.2	27.67	23	31	9.30%	-25.93%	25.3	0.00%
10		10	21.3	20.5	17	28	17.29%	1.39%	21.3	15.81%
30		10	0	0	0	0	---	100.00%	0	100.00%
50		10	0	0	0	0	---	100.00%	0	100.00%

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Analysis ID:	20-1572-0105	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8

Graphics



CETIS Analytical Report

Report Date: 20 Mar-23 12:21 (p 1 of 2)
Test Code/ID: CER020723 / 14-0030-6243

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-2134-6724	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	10 Mar-23 17:02	MD5 Hash:	E68F14682D021D024F00396964E3E9BD	Editor ID:	004-984-722-8
Batch ID:	19-0270-0407	Test Type:	Reproduction-Survival (7d)	Analyst:	Tina DeLeon
Start Date:	07 Feb-23 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Feb-23 15:45	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 2h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO
					Age: <24
Sample ID:	18-3831-7124	Code:	CER020723	Project:	REF TOX
Sample Date:	07 Feb-23 14:00	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0000	Exact	2.7E-05	Significant Effect
		50*	0.0000	Exact	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		0	10	10	0.0000	1.0000	100.00%
50		0	10	10	0.0000	1.0000	100.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

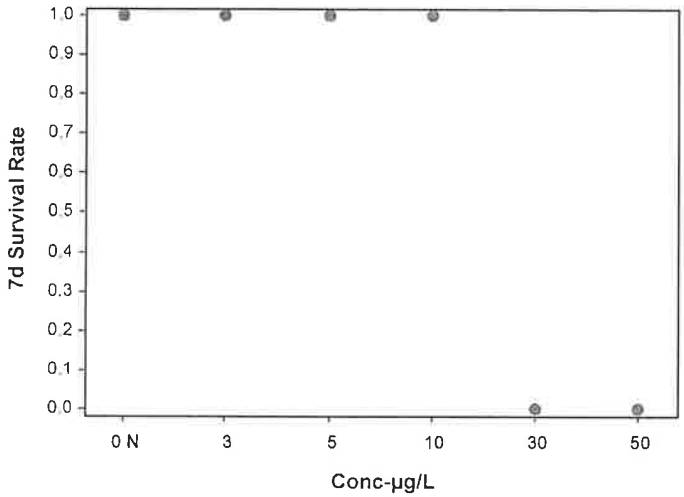
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-2134-6724	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon	
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX	
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant	
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX	
Sample Age:	---	**Client:**	ABC Labs			

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	65	65	65	65	65	0	0	0.00%	0
50		4	60	60	60	60	60	0	0	0.00%	0
Overall		12	63.33	61.77	64.9	60	65	0.7107	2.462	3.89%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.4	370.2	376.6	369	380	0.4815	3.852	1.03%	0
3		8	376.2	370.9	381.6	370	386	0.7955	6.364	1.69%	0
5		8	369.1	365.8	372.4	364	373	0.493	3.944	1.07%	0
10		8	369.9	368.6	371.2	367	372	0.1941	1.553	0.42%	0
30		6	370.3	368.9	371.8	369	373	0.2277	1.366	0.37%	0
50		3	370	365	375	368	372	0.6667	2	0.54%	0
Overall		41	371.7	370.3	373.2	364	386	0.7063	4.522	1.22%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.838	7.677	7.998	7.6	8.1	0.02403	0.1923	2.45%	0
3		8	7.763	7.596	7.929	7.5	8.1	0.02494	0.1996	2.57%	0
5		8	7.713	7.537	7.888	7.5	8.1	0.02625	0.21	2.72%	0
10		8	7.675	7.509	7.841	7.4	8	0.02478	0.1982	2.58%	0
30		6	7.617	7.295	7.938	7.1	8	0.05101	0.3061	4.02%	0
50		3	7.867	7.58	8.154	7.8	8	0.03849	0.1155	1.47%	0
Overall		41	7.737	7.668	7.805	7.1	8.1	0.03381	0.2165	2.80%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	98	98	98	98	98	0	0	0.00%	0
50		4	99	99	99	99	99	0	0	0.00%	0
Overall		12	98.33	98.02	98.65	98	99	0.1421	0.4924	0.50%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.95	7.841	8.059	7.7	8.1	0.01637	0.1309	1.65%	0
3		8	7.975	7.901	8.049	7.8	8.1	0.01108	0.08864	1.11%	0
5		8	7.95	7.841	8.059	7.7	8.1	0.01637	0.1309	1.65%	0
10		8	7.95	7.85	8.05	7.7	8.1	0.01494	0.1195	1.50%	0
30		6	7.917	7.794	8.039	7.7	8	0.01948	0.1169	1.48%	0
50		3	7.9	7.652	8.148	7.8	8	0.03333	0.1	1.27%	0
Overall		41	7.946	7.911	7.982	7.7	8.1	0.01749	0.112	1.41%	0 (0%)

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		5	24	24	24	24	24	0	0	0.00%	0
50		3	24	24	24	24	24	0	0	0.00%	0
Overall		40	24	24	24	24	24	0	0	0.00%	0 (0%)

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129044

570-129044 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBMC_20230226	2/26/23	0830	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
5_20230226-1	2/26/23	0830	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 0830
																									DO (mg/L) 13.49
																									pH 7.35
																									Temp (°C/°F) 46.8
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1200
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level I Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, RL 0.005 ug/L

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-23/1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

3.1/3.0, 2.8/2.7 SC12

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2

4/9/2023

SAP COC 2019/2020 VERSION 3

129094

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below _____			
(619) 280-9415 FAX	☑ 2 weeks			Job / SDG No.:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E625.2) Weck Labs in Hacienda Heights CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBMC_20230226	2/26/23	0830	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	0830	TB	WM	1	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☑ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595

Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold Low limits needed for Mercury (MDL 0 01 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by	Company	Date/Time: 2-27-23/1100	Received	EC	Date/Time: 2/27/23 1120
Relinquished by	Company EC	Date/Time: 2/27/23 1300	Received		Date/Time: 2/27/23 1600
Relinquished by	Company	Date/Time:	Received		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

4/9/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	02/28/23 1018	[illegible]			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, AnAir)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 02/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129044-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Y	Trizma
		Z	other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	2/28/23 1402				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208498.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230226-2 (570-129044-3)	2/26/23	08:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3-1-23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - 1078

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129044-6

Login Number: 129044
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:22:31 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129044-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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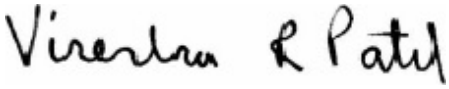
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
4/9/2023 10:22:31 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-7

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129044-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129044-7

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7º C and 3.0º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-7

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129044-1	EPBMC_20230226	Water	02/26/23 08:30	02/27/23 18:00

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322305469
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/01/2023
Analyzed: 03/11/2023

Proj: 570-208637.1/ 570-129044-7/ 57014595/ Boeing SSFL ISRA and BMP

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS				
					Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
							MFL (million fibers per liter)		
EPBMC_20230226 (570-129044-1) 322305469-0001	3/2/2023 01:50 PM	0.10	1288	0.2580	≥ 0.5 µm	None Detected	ND	50.00	<50.00	0.00 - 180.00
					> 10 µm only	None Detected	ND	50.00	<50.00	0.00 - 180.00

Collection Date/Time: *02/26/2023 08:30 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Sherrie Ahmad (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 03/12/2023 18:28:43

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

#322305469

Chain of Custody Record

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OrderID: 322305469

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208637.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-7
Address: 520 Mission Street, ,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

0.8°c

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: (fx)

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	02/28/23 11:27	EC	Annette McKissack	03/01/23 935	UA Testing
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

#322305469

McKissack, Annette

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, March 1, 2023 11:51 AM
To: McKissack, Annette
Cc: LA Testing Lab - Pasadena
Subject: RE: 570-208637.1 | 570-129044-7

[EXTERNAL E-MAIL]

Thanks sorry for the confusion, thanks for your help today!

Best Regards,

Virendra Patel
Project Manager

Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: McKissack, Annette <amckissack@latesting.com>
Sent: Wednesday, March 1, 2023 11:50 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: LA Testing Lab - Pasadena <pasadenalab@EMSL.com>
Subject: RE: 570-208637.1 | 570-129044-7

EXTERNAL EMAIL*

Thank you! I will log them all as waste water

Annette McKissack
Laboratory Administrative Assistant
LA Testing 520 Mission Street South Pasadena, CA 91030
Phone: 323-254-9960 Toll Free: 800-303-0047

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From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, March 1, 2023 11:49 AM
To: McKissack, Annette <amckissack@latesting.com>
Cc: LA Testing Lab - Pasadena <pasadenalab@EMSL.com>
Subject: RE: 570-208637.1 | 570-129044-7

[EXTERNAL E-MAIL]

Sorry waste water both levels of reporting.

Best Regards,

Virendra Patel
Project Manager

Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: Virendra Patel
Sent: Wednesday, March 1, 2023 10:47 AM
To: McKissack, Annette <amckissack@latesting.com>
Cc: LA Testing Lab - Pasadena <pasadenalab@EMSL.com>
Subject: RE: 570-208637.1 | 570-129044-7

Drinking water to provide both screening levels. Thank you!

Best Regards,

Virendra Patel
Project Manager

Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

#322305469

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: McKissack, Annette <amckissack@latesting.com>
Sent: Wednesday, March 1, 2023 10:44 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: LA Testing Lab - Pasadena <pasadenalab@EMSL.com>
Subject: 570-208637.1 | 570-129044-7

EXTERNAL EMAIL*

Hello,

Please confirm if the above mentioned project will be analyzed as a drinking water or waste water analysis.

Thank you,

Annette McKissack
Laboratory Administrative Assistant
LA Testing 520 Mission Street South Pasadena, CA 91030
Phone: 323-254-9960 Toll Free: 800-303-0047

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Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

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129044

570-129044 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
SPBMC_20230226	2/26/23	0830	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-1	2/26/23	0830	TB	WM	3	N	N														x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

EDBPJOUX
Time of Readings 0830
DO (mg/L) 13.49
pH 7.35
Temp (°C/°F) 46.8
TRC (mg/L) 0.00
Checked by:
Date/Time: 2-26-2023/1200

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level I Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, RL 0.005 ug/L

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-23/1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

3.1/3.0, 2.8/2.7 SC12

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2

4/9/2023

SAP COC 2019/2020 VERSION 3

129094

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below _____			
(619) 280-9415 FAX	☑ 2 weeks			Job / SDG No.:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E625.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBMC_20230226	2/26/23	0830	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	0830	TB	WM	1 2	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold Low limits needed for Mercury (MDL 0 01 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company:	Date/Time: 2-27-23/1100	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1300	Received:		Date/Time: 2/27/23 1600
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

4/9/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		02/28/23 10:18				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wwater, Ssolid, Owaste/oil, BT=Tissue, AnAir)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 02/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129044-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Y	Trizma
		Z	other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	2/28/23 1402				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208498.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230226-2 (570-129044-3)	2/26/23	08:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-1-23 15:40	EC		3-1-23 15:40	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - 1070

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129044-7

Login Number: 129044
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 6:48:14 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129044-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

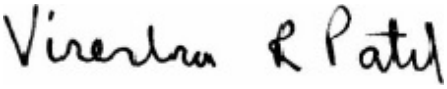
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Qualifiers

Rad

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129044-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129044-8

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7º C and 3.0º C.

RAD
Methods 900.0, 9310: Gross Alpha and Gross Beta batch 605627
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: EPBMC_20230226 (570-129044-1), (180-153809-B-1-A) and (180-153809-B-1-E DU). Analytical results are reported with the detection limit achieved.

Methods 900.0, 9310: Gross Alpha and Gross Beta batch 605627
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230226 (570-129044-1), (LCS 160-605627/2-A), (LCSB 160-605627/3-A), (MB 160-605627/1-A), (180-153809-B-1-A), (180-153809-B-1-E DU), (180-153809-B-1-D MS) and (180-153809-B-1-C MSBT)

Method 900.0: Gross Alpha Beta prep batch 160-606326:

The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass: EPBMC_20230226 (570-129044-1). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha Beta prep batch 160-606236:

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-606326 and analytical batch 160-606671 were outside control limits for one or more analytes. In addition RER/RPD was also outside of control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 900.0: Gross Alpha Beta prep batch 160-606326:

The detection goal was not met for the following sample(s). The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank achieved the detection goal demonstrating acceptable sample preparation and instrument performance. (570-129852-R-1-F)

Method 900.0: Gross Alpha Beta prep batch 160-606326:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230226 (570-129044-1), (LCS 160-606326/2-A), (LCSB 160-606326/3-A), (MB 160-606326/1-A), (570-129852-R-1-F), (570-129852-R-1-J MS), (570-129852-R-1-L MSBT), (570-129852-R-1-M MSBTD) and (570-129852-R-1-K MSD)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234

Job ID: 570-129044-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBMC_20230226 (570-129044-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 901.1: Gamma Prep Batch 160-604032
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Job ID: 570-129044-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

**The method blank (MB) Z-score is within limits and is located in the level IV raw data.

EPBMC_20230226 (570-129044-1), (570-128840-R-1-D) and (570-128840-R-1-E DU)

Method 903.0: Radium-226 batch 602356
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230226 (570-129044-1), (LCS 160-602356/2-A), (LCSD 160-602356/3-A) and (MB 160-602356/1-A)

Methods 903.0, 9315: Radium-226 batch 603854
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Method 904.0: Radium-228 batch 602360
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: EPBMC_20230226 (570-129044-1). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 602360
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230226 (570-129044-1), (LCS 160-602360/2-A), (LCSD 160-602360/3-A) and (MB 160-602360/1-A)

Methods 904.0, 9320: Radium-228 batch 603857
The LCS recovered at (128%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCSD 160-603857/25-A)

Methods 904.0, 9320: Radium-228 batch 603857
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230226 (570-129044-1), (LCS 160-603857/2-A), (LCSD 160-603857/25-A), (MB 160-603857/1-A), (570-129852-R-1-B), (570-129852-L-1-C MS) and (570-129852-L-1-D MSD)

Method 905: Strontium-90 prep batch 160-603495:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230226 (570-129044-1), (LCS 160-603033/2-A), (LCSD 160-603033/3-A) and (MB 160-603033/1-A)

Method 905: Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is

Job ID: 570-129044-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample-specific unless otherwise stated elsewhere in this narrative.

Method 905: Strontium-90 batch 604379
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230226 (570-129044-1), (LCS 160-604379/2-A), (MB 160-604379/1-A), (570-129852-R-1-D), (570-129852-L-1-E MS) and (570-129852-L-1-F MSD)

Method 906.0: Tritium 605397
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBMC_20230226 (570-129044-1), (LCS 160-605397/2-A), (MB 160-605397/1-A), (570-129852-Q-1-B), (570-129852-K-1-D MS) and (570-129852-K-1-E MSD)

Method 906.0: The matrix spike duplicate (MSD) recovery was inadvertently not spiked. However the matrix spike (MS) was within range and all other QC was within limits. Per client, the data will be reported with this narrative.EPBMC_20230226 (570-129044-1), (570-129852-Q-1-B), (570-129852-K-1-D MS) and (570-129852-K-1-E MSD)

Method A-01-R: Isotopic Uranium Batch 605724
The detection goal was not met for the following sample(s). The sample was prepped at a reduced volume due to the presence of matrix interferences: EPBMC_20230226 (570-129044-1). Analytical results are reported with the detection limit achieved.

Method A-01-R: Isotopic Uranium Batch 605724
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.EPBMC_20230226 (570-129044-1), (LCS 160-605724/2-A), (MB 160-605724/1-A), (570-129852-R-1-E), (570-129852-L-1-G MS) and (570-129852-L-1-H MSD)

Method A-01-R: Isotopic Uranium batch 605729
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230226 (570-129044-1), (LCS 160-605729/2-A), (MB 160-605729/1-A), (570-131449-AX-1-B) and (570-131449-AX-1-C DU)

Method ExtChrom: Uranium Prep Batch 160-605729:
The following sample was prepared at a reduced aliquot due to discoloration: EPBMC_20230226 (570-129044-1).

Method ExtChrom: Uranium Prep Batch 160-605724:
The following sample was prepared at a reduced aliquot due to sediment and discoloration: EPBMC_20230226 (570-129044-1).

Method PrecSep_0: Radium-228 Prep Batch 160-602360

The following sample was prepared at a reduced aliquot due to Matrix: EPBMC_20230226 (570-129044-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0:

Method PrecSep-21: Radium-226 Prep Batch 160-602356

The following sample was prepared at a reduced aliquot due to Matrix: EPBMC_20230226 (570-129044-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21:

Job ID: 570-129044-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method PrecSep-7: Strontium 90 Prep Batch 160-603033

The following sample was prepared at a reduced aliquot due to Matrix: EPBMC_20230226 (570-129044-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Client Sample ID: EPBMC_20230226 **Lab Sample ID: 570-129044-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	22.3	G	11.7	12.0	3.00	16.3	pCi/L	03/30/23 11:34	04/04/23 13:06	1
Gross Beta	21.W	G	4.86	5.32	4.00	5.32	pCi/L	03/30/23 11:34	04/04/23 13:06	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	4.04	U G F	3.69	3.72	3.00	5.83	pCi/L	04/06/23 10:28	04/10/23 20:49	1
Gross Beta	1.75	U	1.21	1.22	4.00	1.80	pCi/L	04/06/23 10:28	04/10/23 20:49	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.340	U	10.5	10.5	20.0	12.9	pCi/L	03/17/23 14:08	03/28/23 21:53	1
Potassium-40	**107**		55.4	56.9		52.7	pCi/L	03/17/23 14:08	03/28/23 21:53	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	**8.85**		6.32	6.41	20.0	6.53	pCi/L	03/22/23 16:26	03/30/23 05:35	1
Potassium-40	52.5	U	93.1	93.3		101	pCi/L	03/22/23 16:26	03/30/23 05:35	1

Method: EPA 903.0 - Radium-22W(GFPC)

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-22W	**0.W18**		0.345	0.350	1.00	0.450	pCi/L	03/06/23 09:11	03/29/23 21:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.3*		*30 - 110*	*03/06/23 09:11*	*03/29/23 21:59*	*1*

Method: EPA 903.0 - Radium-22W(GFPC) - Dissolved

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0392	U	0.0760	0.0760	1.00	0.137	pCi/L	03/16/23 07:58	04/07/23 10:42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.1*		*30 - 110*	*03/16/23 07:58*	*04/07/23 10:42*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.153	U G	1.53	1.53	1.00	2.78	pCi/L	03/06/23 09:48	03/16/23 12:14	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*74.3*		*30 - 110*	*03/06/23 09:48*	*03/16/23 12:14*	*1*
Y Carrier	*87.9*		*30 - 110*	*03/06/23 09:48*	*03/16/23 12:14*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.9W3		0.525	0.533	1.00	0.751	pCi/L	03/16/23 09:45	03/30/23 12:05	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.1*		*30 - 110*	*03/16/23 09:45*	*03/30/23 12:05*	*1*
Y Carrier	*84.1*		*30 - 110*	*03/16/23 09:45*	*03/30/23 12:05*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.0430	U	0.459	0.459	3.00	0.819	pCi/L	03/09/23 13:03	03/17/23 18:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*63.4*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:33*	*1*
Y Carrier	*93.1*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:33*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	**1.02**		0.644	0.649	3.00	0.992	pCi/L	03/20/23 13:22	03/29/23 16:01	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*68.0*		*30 - 110*	*03/20/23 13:22*	*03/29/23 16:01*	*1*
Y Carrier	*81.5*		*30 - 110*	*03/20/23 13:22*	*03/29/23 16:01*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Method: EPA 90W0 - Tritium, Total (LSC)

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-13.1	U F	137	137	500	258	pCi/L	03/29/23 11:02	04/04/23 17:36	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	**4.18**	**G**	1.72	1.73	1.00	1.04	pCi/L	03/30/23 15:31	04/04/23 20:40	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBMC62023022W
Date Collected: 02/2W23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	3.09		0.931	0.949	1.00	0.354	pCi/L	03/30/23 16:34	04/03/23 20:56	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-129044-1	EPBMC_20230226	74.3
LCS 160-602356/2-A	Lab Control Sample	87.6
LCS 160-603854/2-A	Lab Control Sample	94.8
LCSD 160-602356/3-A	Lab Control Sample Dup	83.3
LCSD 160-603854/25-A	Lab Control Sample Dup	89.2
MB 160-602356/1-A	Method Blank	87.6
MB 160-603854/1-A	Method Blank	91.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-129044-1	EPBMC_20230226	88.1

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129044-1	EPBMC_20230226	74.3	87.9
LCS 160-602360/2-A	Lab Control Sample	87.6	87.1
LCS 160-603857/2-A	Lab Control Sample	94.8	81.5
LCSD 160-602360/3-A	Lab Control Sample Dup	83.3	87.1
LCSD 160-603857/25-A	Lab Control Sample Dup	89.2	87.5
MB 160-602360/1-A	Method Blank	87.6	87.9
MB 160-603857/1-A	Method Blank	91.5	83.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129044-1	EPBMC_20230226	88.1	84.1

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129044-8
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129044-1	EPBMC_20230226	63.4	93.1
LCS 160-603033/2-A	Lab Control Sample	79.1	82.2
LCS 160-604379/2-A	Lab Control Sample	85.6	76.6
LCSD 160-603033/3-A	Lab Control Sample Dup	80.1	82.2
MB 160-603033/1-A	Method Blank	87.1	81.1
MB 160-604379/1-A	Method Blank	79.3	70.3

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129044-1	EPBMC_20230226	68.0	81.5

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-605724/2-A	Lab Control Sample	92.1
LCS 160-605729/2-A	Lab Control Sample	38.1
MB 160-605724/1-A	Method Blank	92.8
MB 160-605729/1-A	Method Blank	46.2

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-605627/1-A
Matrix: Water
Analysis Batch: 606125

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605627

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.08907	U	0.318	0.318	3.00	0.709	pCi/L	03/30/23 11:38	08/08/23 12:50	1
Gross Beta	0.6100	U	0.507	0.507	8.00	0.997	pCi/L	03/30/23 11:38	08/08/23 12:50	1

Lab Sample ID: LCS 160-605627/2-A
Matrix: Water
Analysis Batch: 606125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605627

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.37		7.71	3.00	2.02	pCi/L	102	75 - 125

Lab Sample ID: LCSB 160-605627/3-A
Matrix: Water
Analysis Batch: 606125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605627

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.8	78.38		7.96	8.00	0.916	pCi/L	101	75 - 125

Lab Sample ID: MB 160-606326/1-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606326

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.3133	U	0.657	0.65C	3.00	1.12	pCi/L	08/06/23 10:20	08/10/23 20:37	1
Gross Beta	0.2677	U	0.896	0.896	8.00	0.978	pCi/L	08/06/23 10:20	08/10/23 20:37	1

Lab Sample ID: LCS 160-606326/2-A
Matrix: Water
Analysis Batch: 606895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.96		7.62	3.00	2.05	pCi/L	103	75 - 125

Lab Sample ID: LCSB 160-606326/3-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.8	78.51		7.90	8.00	0.927	pCi/L	102	75 - 125

QC Sample Results

Client: Haylin & Adirondack, Lt hP
Job ID: 570-129088-C
Job co/nhHSBeH: gone F BBLRIBMd yt r gGj

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604032/1-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604032

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Lnpeum-137	-0P8655	4	10P3	10P3	20P0	12P1	Ul eSR	03S17S23 18:0C	03S22S23 19:89	1
joHyppeum-80	12P53	4	7CP9	7CP9		135	Ul eSR	03S17S23 18:0C	03S22S23 19:89	1

Lab Sample ID: LCS 160-604032/2-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604032

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
dmncheum-281	135000	183200		17000		815	Ul eSR	106	75 - 125
Lnpeum-137	80900	817C0		89C0	20P0	92P9	Ul eSR	102	75 - 125
Lobyi-H60	17C00	1C360		2190		50P3	Ul eSR	103	75 - 125

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Lnpeum-137	5P575	4	11P5	11P5	20P0	18P5	Ul eSR	03S22S23 16:26	03S29S23 21:25	1
joHyppeum-80	-139P9	4	1C0	1C0		2C5	Ul eSR	03S22S23 16:26	03S29S23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
dmncheum-281	135000	135500		16100		883	Ul eSR	100	75 - 125
Lnpeum-137	80C00	82170		5030	20P0	105	Ul eSR	103	75 - 125
Lobyi-H60	17C00	1C660		2230		58PC	Ul eSR	105	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-602356/1-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 602356

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Myreum-226	0P03C27	4	0P0681	0P0682	1P00	0P111	Ul eSR	03S06S23 09:11	03S29S23 20:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*478*		*30 - 110*	*03/20/23 09:11*	*03/29/23 60:10*	*1*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-602356/2-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 602356

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Myr eum-226			11P3	11F79		1P20	1P00	0P11C	Ui eSR	108	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*478*		*30 - 110*

Lab Sample ID: LCSD 160-602356/3-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 602356

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Myr eum-226			11P3	11P01		1P18	1P00	0P107	Ui eSR	97	75 - 125	0P33	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*438*		*30 - 110*

Lab Sample ID: MB 160-603854/1-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603854

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Myr eum-226	-0P006C58	4	0P08C1	0P08C1	1P00	0P106	Ui eSR	03S16S23 07:5C	08S07S23 10:81	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*918*		*30 - 110*	*032/ 263 07:54*	*0. 207263 10:. 1*	*1*

Lab Sample ID: LCS 160-603854/2-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603854

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Myr eum-226			11P3	11P81		1P1C	1P00	0P07C5	Ui eSR	101	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*9. 84*		*30 - 110*

Lab Sample ID: LCSD 160-603854/25-A
Matrix: Water
Analysis Batch: 606587

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603854

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Myr eum-226			11P3	10P67		1P13	1P00	0P155	Ui eSR	98	75 - 125	0P32	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-603854/25-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 606587 **Prep Batch: 603854**

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	498.6		30 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-602360/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 603871 **Prep Batch: 602360**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Myrtle-22C	0.29C5	4	0.293	0.298	1.00	0.86C	Ul eSR	03S06S23 09:8C	03S16S23 12:10	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	478.7		30 - 110	03/20/23 09:.4	03/21/23 16:10	1
Y Carrier	478.9		30 - 110	03/20/23 09:.4	03/21/23 16:10	1

Lab Sample ID: LCS 160-602360/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 603871 **Prep Batch: 602360**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Myrtle-22C			0.11	0.303		1.17	1.00	0.855	Ul eSR	102	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	478.7		30 - 110
Y Carrier	478.1		30 - 110

Lab Sample ID: LCSD 160-602360/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 603871 **Prep Batch: 602360**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Myrtle-22C			0.11	9.1C2		1.2C	1.00	0.521	Ul eSR	113	75 - 125	0.36	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	438.3		30 - 110
Y Carrier	478.1		30 - 110

Lab Sample ID: MB 160-603857/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605623 **Prep Batch: 603857**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Myrtle-22C	0.8585		0.30C	0.311	1.00	0.852	Ul eSR	03S16S23 09:85	03S30S23 12:11	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-603857/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605623 **Prep Batch: 603857**

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	9185		30 - 110	03/21/23 09:.5	03/30/23 16:11	1
Y Carrier	4387		30 - 110	03/21/23 09:.5	03/30/23 16:11	1

Lab Sample ID: LCS 160-603857/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605623 **Prep Batch: 603857**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Myrcum-22C	0.0C	9.9C1		1.32	1.00	0.866	Uni&R	128	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	9.84		30 - 110
Y Carrier	4185		30 - 110

Lab Sample ID: LCSD 160-603857/25-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605624 **Prep Batch: 603857**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Myrcum-22C	0.0C	10.32		1.36	1.00	0.879	Uni&R	12C	75 - 125	0.13	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	4986		30 - 110
Y Carrier	4785		30 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-603033/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 604031 **Prep Batch: 603033**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Bhot Helium-90	-0.1395	4	0.189	0.189	3.00	0.303	Uni&R	03/09/23 13:03	03/17/23 1C:29	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	4781		30 - 110	03/09/23 13:03	03/17/23 14:69	1
Y Carrier	4181		30 - 110	03/09/23 13:03	03/17/23 14:69	1

Lab Sample ID: LCS 160-603033/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 604031 **Prep Batch: 603033**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Bhot Helium-90	7.35	6.0C1		0.000	3.00	0.299	Uni&R	98	75 - 125

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	798		30 - 110
Y Carrier	468		30 - 110

Lab Sample ID: LCSD 160-603033/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 604031 **Prep Batch: 603033**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Bhot Helium-90			7.35	7.895		0.25C	3.00	0.360	Uiesr	102	75 - 125	0.37	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	408		30 - 110
Y Carrier	468		30 - 110

Lab Sample ID: MB 160-604379/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605413 **Prep Batch: 604379**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Bhot Helium-90	-0.1030	4	0.26C	0.26C	3.00	0.892	Uiesr	03/20/23 13:22	03/29/23 15:59	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	798		30 - 110	03/20/23 13:66	03/29/23 15:59	1
Y Carrier	708		30 - 110	03/20/23 13:66	03/29/23 15:59	1

Lab Sample ID: LCS 160-604379/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605413 **Prep Batch: 604379**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Bhot Helium-90			7.35	7.805		0.32C	3.00	0.323	Uiesr	101	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	458		30 - 110
Y Carrier	7/8		30 - 110

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-605397/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 606179 **Prep Batch: 605397**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tcelium	C1.53	4	151	151	500	263	Uiesr	03/29/23 11:02	08/08/23 16:05	1

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: LCS 160-605397/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 606179 **Prep Batch: 605397**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2090	1788		317	500	251	Units	3	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605724/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 606117 **Prep Batch: 605724**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tohyi 4 cyt eum	0.03189	4	0.0996	0.09003	1.00	0.18	Units	03/30/23 15:31	08/08/23 20:80	1

Lab Sample ID: LCS 160-605724/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 606357 **Prep Batch: 605724**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
4 cyt eum-238	12.7	13.25		1.55	1.00	0.113	Units	108	75 - 125
4 cyt eum-23C	13.0	13.61		1.5C	1.00	0.123	Units	105	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-636	*968*		*30 - 110*

Lab Sample ID: MB 160-605729/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605912 **Prep Batch: 605729**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Deppoivnr 4 cyt eum	0.16C6	4	0.206	0.207	1.00	0.300	Units	03/30/23 16:38	08/03/23 20:56	1

Lab Sample ID: LCS 160-605729/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605927 **Prep Batch: 605729**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
4 cyt eum-238	12.7	13.57		1.9C	1.00	0.356	Units	107	75 - 125
4 cyt eum-23C	13.0	13.66		1.99	1.00	0.311	Units	105	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-636	*348*		*30 - 110*

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Prep Batch: 602356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	PrecSep-21	
MB 160-602356/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-602356/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-602356/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 602360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	PrecSep_0	
MB 160-602360/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-602360/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-602360/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Filtration Batch: 602821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	Filtration	
570-129044-1	EPBMC_20230226	Dissolved	Water	Filtration	
570-129044-1	EPBMC_20230226	Dissolved	Water	Filtration	

Prep Batch: 603033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	PrecSep-7	
MB 160-603033/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-603033/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-603033/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 603854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	PrecSep-21	602821
MB 160-603854/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-603854/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-603854/25-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 603857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	PrecSep_0	602821
MB 160-603857/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-603857/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-603857/25-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 604032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	Fill_Geo-0	
MB 160-604032/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604032/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 604379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	PrecSep-7	602821
MB 160-604379/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-604379/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Rad

Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	Fill_Geo-0	602821
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	LSC_Dist_Susp	
MB 160-605397/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-605397/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 605627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	Evaporation	
MB 160-605627/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-605627/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-605627/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 605724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Total/NA	Water	ExtChrom	
MB 160-605724/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605724/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 605729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	ExtChrom	602821
MB 160-605729/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605729/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129044-1	EPBMC_20230226	Dissolved	Water	Evaporation	602821
MB 160-606326/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606326/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606326/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124066-3

Client Sample ID: EPBMC_20230226

Date Collected: 02/26/23 08:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129044-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Divvolmed	Filtration	Filtration			T300 p L	T300 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	Ema8oration			100.s6 p L	1.0 g	s0sT2s	06/0s/2T 10:23	MS9	EE9 SL
Divvolmed	Analyviv	400.0		1			s0sss3	06/10/2T 20:64	FLC	EE9 SL
	Invtrup ent ID: GFPCPURPLE									
9otal/NA	Pre8	Ema8oration			Ts.26 p L	1.0 g	s05s27	0T/T0/2T 11:T6	MS9	EE9 SL
9otal/NA	Analyviv	400.0		1	1.0 p L	1.0 p L	s0s12T	06/06/2T 1T:0s	FLC	EE9 SL
	Invtrup ent ID: GFPCBLUE									
Divvolmed	Filtration	Filtration			T300 p L	T300 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	Fill_Geo-0			1000 p L	1.0 g	s067T5	0T/22/2T 1s:2s	SEH	EE9 SL
Divvolmed	Analyviv	401.1		1			s05s02	0T/T0/2T 05:T5	CAH	EE9 SL
	Invtrup ent ID: GAMMAVISION									
9otal/NA	Pre8	Fill_Geo-0			1000 p L	1.0 g	s060T2	0T/17/2T 16:03	SEH	EE9 SL
9otal/NA	Analyviv	401.1		1			s05206	0T/23/2T 21:5T	EMH	EE9 SL
	Invtrup ent ID: GAMMAVISION									
Divvolmed	Filtration	Filtration			1400 p L	1400 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	PrecSe8-21			764.55 p L	1.0 g	s0T356	0T/1s/2T 07:53	DJP	EE9 SL
Divvolmed	Analyviv	40T.0		1	1.0 p L	1.0 p L	s0s5sT	06/07/2T 10:62	EMH	EE9 SL
	Invtrup ent ID: GFPCRED									
9otal/NA	Pre8	PrecSe8-21			255.s2 p L	1.0 g	s02T5s	0T/0s/2T 04:11	DJP	EE9 SL
9otal/NA	Analyviv	40T.0		1			s05612	0T/24/2T 21:54	FLC	EE9 SL
	Invtrup ent ID: GFPCPURPLE									
Divvolmed	Filtration	Filtration			1400 p L	1400 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	PrecSe8_0			764.55 p L	1.0 g	s0T357	0T/1s/2T 04:65	DJP	EE9 SL
Divvolmed	Analyviv	406.0		1			s05s2T	0T/T0/2T 12:05	FLC	EE9 SL
	Invtrup ent ID: GFPCRED									
9otal/NA	Pre8	PrecSe8_0			255.s2 p L	1.0 g	s02Ts0	0T/0s/2T 04:63	DJP	EE9 SL
9otal/NA	Analyviv	406.0		1			s0T370	0T/1s/2T 12:16	FLC	EE9 SL
	Invtrup ent ID: GFPCBLUE									
Divvolmed	Filtration	Filtration			T300 p L	T300 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	PrecSe8-7			643.s6 p L	1.0 g	s06T74	0T/20/2T 1T:22	DJP	EE9 SL
Divvolmed	Analyviv	405		1			s0561T	0T/24/2T 1s:01	FLC	EE9 SL
	Invtrup ent ID: GFPCBLUE									
9otal/NA	Pre8	PrecSe8-7			507.23 p L	1.0 g	s0T0TT	0T/04/2T 1T:0T	DJP	EE9 SL
9otal/NA	Analyviv	405		1			s060T0	0T/17/2T 13:TT	FLC	EE9 SL
	Invtrup ent ID: GFPCBLUE									
9otal/NA	Pre8	LSC_Divt_Suv8			44.34 p L	1.0 g	s05T47	0T/24/2T 11:02	SEH	EE9 SL
9otal/NA	Analyviv	40s.0		1			s0s174	06/06/2T 17:Ts	REV	EE9 SL
	Invtrup ent ID: LSCAQUA									
Divvolmed	Filtration	Filtration			T300 p L	T300 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	ExtChrop			T01.T p L	1.0 p L	s05724	0T/T0/2T 1s:T6	CMM	EE9 SL
Divvolmed	Analyviv	A-01-R		1			s054T1	06/0T/2T 20:5s	FLC	EE9 SL
	Invtrup ent ID: ALPHAVISION									
9otal/NA	Pre8	ExtChrop			101.1 p L	1.0 p L	s05726	0T/T0/2T 15:T1	CMM	EE9 SL
9otal/NA	Analyviv	A-01-R		1			s0s0s3	06/06/2T 20:60	EJS	EE9 SL
	Invtrup ent ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124066-3

Laboratory References:

EE9 SL = Eurofinv St. Louiv, 1T715 Rider 9rail North, Earth City, MO sT065, 9EL (T16)243-35ss

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129044-8
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129044-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129044-1	EPBMC_20230226	Water	02/26/23 08:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129044

570-129044 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBMC_20230226	2/26/23	0830	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EB_20230226-1	2/26/23	0830	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 0830
																									DO (mg/L) 13.49
																									pH 7.35
																									Temp (°C/°F) 46.8
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1200
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level I Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.0007 ug/L, RL 0.005 ug/L

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-23/1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

3.1/3.0, 2.8/2.7 SC12

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4/12/2023

SAP COC 2019/2020 VERSION 3

129094

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below _____			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Verk L bs Hacie ia H nts, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Veck L bs n Hacl da Height A	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Lab en CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck L n H l- rda eig hts, A	Chlorpyrifos, Diazinon (E625.2) Wer Labs n Hacienda Heights CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBMC_20230226	2/26/23	0830	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	0830	TB	WM	1 2	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich com and post to Total Access Bill to Haley & Aldrich at AP@ha eyaldrich com Report Level II Data Package and pro de EDD All dissolved sample are to be filtered within 24 hours of rece pt ven those placed on hold Low limits needed for Mercury (MDL 0 01 ug/L, RL 0 05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company:	Date/Time: 2-27-23/1100	Receiv	EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Receiv		Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

4/12/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		02/28/23 10:18				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
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Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 02/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129044-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A	HCL	M	Hexane
B	NaOH	N	None
C	Zn Acetate	O	AsNaO2
D	Nitric Acid	P	Na2O4S
E	NaHSO4	Q	Na2SO3
F	MeOH	R	Na2S2O3
G	Amchlor	S	H2SO4
H	Ascorbic Acid	T	TSP Dodecahydrate
I	Ice	U	Acetone
J	DI Water	V	MCAA
K	EDTA	W	pH 4-5
L	EDA	Y	Trizma
		Z	other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

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Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	2/28/23 1402				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/12/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208498.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	7	See Attached Instructions
TB_20230226-2 (570-129044-3)	2/26/23	08:30 Pacific		Water			X				2	See Attached Instructions
							(4)	(2)	(2)	(1)		# of containers

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Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-1-23 15:40	EC		3-1-23 15:40	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - 1078

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PrecSep_21 (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

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Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature] FED EX	02/28/23 10:13	FC	FED EX		
2	FED EX			Sierra Worthington	MAR 0 1 2023 0900	ETAS
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129044-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBMC_20230226 (570-129044-1)	2/26/23	08:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	FED EX	02/28/23 10:18	FE	FED EX		
2	FED EX	Date/Time:	Company	Sierra Worthington	MAR 0 1 2023 0900	GDASR
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129044-8

Login Number: 129044
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129044-8

Login Number: 129044
List Number: 4
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 03/02/23 12:00 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/16/2023 6:50:01 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129045-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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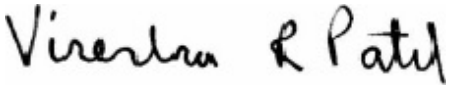

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Qualifiers

GC/MS mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Sep i mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits
LR	LCS/LCSD recovery below method control limits

HPLC/IC

Qualifier	Qualifier DesAriction
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier DesAriction
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chep istry

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive

Glossary (Continued)

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129045-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129045-1

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.2º C.

GC/MS VOA
Method 624.1: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 570-307642 recovered outside control limits for the following analyte: Ethanol Laboratory control sample / laboratory control sample duplicate (LCS/LCSD) percent recovery is in control for affected analytes.

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: TB_20230226-1 (570-129045-2). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-307642.

Method 8260B SIM: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: EPBLLC_20230226 (570-129045-1). Elevated reporting limits (RLs) are provided.

Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-307594.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-307149 and analytical batch 570-307279 recovered outside control limits for the following analytes: 2,4-Dinitrotoluene, 4,6-Dinitro-2-methylphenol, Di-n-octyl phthalate and Di-n-butyl phthalate. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-307608 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: EPBLLC_20230226 (570-129045-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following sample was received and analyzed outside of holding time: EPBLLC_20230226 (570-129045-1).

Method 218.6: The following sample was received, filtered, preserved and analyzed outside of holding time: EPBLLC_20230226 (570-129045-1).

Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-307135 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Sulfate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 300.0: Dilutions were performed for the following samples due to sample matrix properties: EPBLLC_20230226 (570-129045-1).

Job ID: 570-129045-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 300.0: Dilutions were performed for the following samples due to sample matrix properties: EPBLLC_20230226 (570-129045-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-307628 and analytical batch 570-307918 contained Chromium and Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-308039 and analytical batch 570-308100 were outside control limits for Antimony. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 200.8: The method blank for preparation batch 570-308039 and analytical batch 570-308100 contained Chromium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBLLC_20230226 (570-129045-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBLLC_20230226 (570-129045-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: Insufficient sample volume was available to perform sample duplicate (DUP) associated with analytical batch 570-307843.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-308085.
Method: 1664.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Client Sample ID: EPBLLC_20230226 — Lab Sample ID: 570-129045-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.031	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.036	J,DX BU	0.20	0.019	ug/L	1		218.6	Dissolved
Chloride	38		5.0	1.8	mg/L	5		300.0	Total/NA
Nitrate as N	2.6		0.50	0.098	mg/L	5		300.0	Total/NA
Sulfate	77		5.0	1.2	mg/L	5		300.0	Total/NA
Nitrate Nitrite as N	2.6		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	1200		500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	1100	BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Aluminum	21000		150	86	ug/L	10		200.8	Total Recoverable
Silver	0.29	J,DX	1.0	0.23	ug/L	1		200.8	Total Recoverable
Arsenic	11		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	310		1.0	0.17	ug/L	1		200.8	Total Recoverable
Beryllium	1.3		0.50	0.26	ug/L	1		200.8	Total Recoverable
Cadmium	3.7		1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	36	MB	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	53		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	46000	MB	200	37	ug/L	10		200.8	Total Recoverable
Manganese	890		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	58		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	22		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	1.2	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Zinc	140		20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	29		2.0	0.52	ug/L	1		200.8	Total Recoverable
Thallium	0.46	J,DX	1.0	0.11	ug/L	1		200.8	Total Recoverable
Cobalt	18		1.0	0.14	ug/L	1		200.8	Total Recoverable
Arsenic	1.4	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	57	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Cadmium	0.16	J,DX BU	1.0	0.13	ug/L	1		200.8	Dissolved
Chromium	0.64	J,DX BU MB	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	3.4	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	8.0	J,DX BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	9.2	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	11	BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	1.2	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	29	BU	2.0	0.52	ug/L	1		200.8	Dissolved
Cobalt	0.29	J,DX BU	1.0	0.14	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Client Sample ID: EPBLLC_20230226 (Continued)

Lab Sample ID: 570-129045-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cr (III)	0.036	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Ammonia	0.057	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	130		0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	580		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	1600		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	2000		33	28	mg/L	1		SM 2540D	Total/NA
Settleable Solids	5.0		0.10	0.10	mL/L	1		SM 2540F	Total/NA
Carbon, Total Organic	17		4.0	2.1	mg/L	8		SM 5310D	Total/NA
MBAS	0.059	J,DX	0.20	0.050	mg/L	1		SM 5540C	Total/NA
Clay (less than 0.00391 mm)	13.15		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	81.73		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	94.88		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	5.12		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: TB_20230226-1

Lab Sample ID: 570-129045-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 17:54	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 17:54	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 17:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 17:54	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 17:54	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 17:54	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 17:54	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 17:54	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 17:54	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 17:54	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 17:54	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 17:54	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 17:54	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 17:54	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 17:54	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 17:54	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 17:54	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 17:54	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 17:54	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 17:54	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 17:54	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 17:54	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 17:54	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 17:54	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 17:54	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 17:54	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 17:54	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 17:54	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 17:54	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 17:54	1
Acetone	ND		20	16	ug/L			02/28/23 17:54	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 17:54	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 17:54	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 17:54	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 17:54	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 17:54	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 17:54	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 17:54	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 17:54	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 17:54	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 17:54	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 17:54	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 17:54	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 17:54	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 17:54	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 17:54	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 17:54	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 17:54	1
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 17:54	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 17:54	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 17:54	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 17:54	1
Ethanol	ND	BA	100	65	ug/L			02/28/23 17:54	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 17:54	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 17:54	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 17:54	1
Isopropanol	ND		250	120	ug/L			02/28/23 17:54	1
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 17:54	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 17:54	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 17:54	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 17:54	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 17:54	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 17:54	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 17:54	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 17:54	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 17:54	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 17:54	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 17:54	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 17:54	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 17:54	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 17:54	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 17:54	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 17:54	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 17:54	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 17:54	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 17:54	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 17:54	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 17:54	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 17:54	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 17:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*60 - 140*		*02/28/23 17:54*	*1*
4-Bromofluorobenzene (Surr)	*101*		*60 - 140*		*02/28/23 17:54*	*1*
Dibromofluoromethane (Surr)	*90*		*60 - 140*		*02/28/23 17:54*	*1*
Toluene-d8 (Surr)	*97*		*60 - 140*		*02/28/23 17:54*	*1*

Client Sample ID: TB_20230226-1
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 16:03	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 16:03	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 16:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 16:03	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 16:03	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 16:03	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 16:03	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 16:03	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB_20230226-1
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 16:03	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 16:03	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 16:03	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 16:03	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 16:03	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 16:03	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 16:03	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 16:03	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 16:03	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 16:03	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 16:03	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 16:03	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 16:03	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 16:03	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 16:03	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 16:03	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 16:03	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 16:03	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 16:03	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 16:03	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 16:03	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 16:03	1
Acetone	ND		20	16	ug/L			02/28/23 16:03	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 16:03	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 16:03	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 16:03	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 16:03	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 16:03	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 16:03	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 16:03	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 16:03	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 16:03	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 16:03	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 16:03	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 16:03	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 16:03	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 16:03	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 16:03	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 16:03	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 16:03	1
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 16:03	1
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 16:03	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 16:03	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 16:03	1
Ethanol	ND	BA	100	65	ug/L			02/28/23 16:03	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 16:03	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 16:03	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 16:03	1
Isopropanol	ND		250	120	ug/L			02/28/23 16:03	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB_20230226-1
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 16:03	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 16:03	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 16:03	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 16:03	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 16:03	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 16:03	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 16:03	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 16:03	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 16:03	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 16:03	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 16:03	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 16:03	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 16:03	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 16:03	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 16:03	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 16:03	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 16:03	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 16:03	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 16:03	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 16:03	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 16:03	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 16:03	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 16:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*92*		*60 - 140*		*02/28/23 16:03*	*1*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*02/28/23 16:03*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*		*02/28/23 16:03*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*02/28/23 16:03*	*1*

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBLLC_20230226
Lab Sample ID: 570-129045-1
Date Collected: 02/26/23 10:30
Matrix: Water
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		2.0	1.1	ug/L			02/28/23 18:33	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*111*		*67 - 133*		*02/28/23 18:33*	*2*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND	LR	0.19	0.12	ug/L		02/28/23 05:19	02/28/23 17:15	1
1,2-Dichlorobenzene	ND		0.19	0.11	ug/L		02/28/23 05:19	02/28/23 17:15	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.19	0.087	ug/L		02/28/23 05:19	02/28/23 17:15	1
1,3-Dichlorobenzene	ND		0.19	0.11	ug/L		02/28/23 05:19	02/28/23 17:15	1
1,4-Dichlorobenzene	ND		0.19	0.13	ug/L		02/28/23 05:19	02/28/23 17:15	1
2,4,6-Trichlorophenol	ND		0.95	0.13	ug/L		02/28/23 05:19	02/28/23 17:15	1
Bis(2-ethylhexyl) phthalate	ND		4.8	3.4	ug/L		02/28/23 05:19	02/28/23 17:15	1
2,4-Dichlorophenol	ND		0.95	0.13	ug/L		02/28/23 05:19	02/28/23 17:15	1
2,4-Dimethylphenol	ND		0.19	0.12	ug/L		02/28/23 05:19	02/28/23 17:15	1
2,4-Dinitrophenol	ND		4.8	4.1	ug/L		02/28/23 05:19	02/28/23 17:15	1
2,4-Dinitrotoluene	ND	LQ	0.19	0.11	ug/L		02/28/23 05:19	02/28/23 17:15	1
2,6-Dinitrotoluene	ND		0.19	0.17	ug/L		02/28/23 05:19	02/28/23 17:15	1
2-Chloronaphthalene	ND	BA	0.19	0.14	ug/L		02/28/23 05:19	02/28/23 17:15	1
2-Chlorophenol	ND		0.19	0.091	ug/L		02/28/23 05:19	02/28/23 17:15	1
2-Nitrophenol	ND		4.8	3.3	ug/L		02/28/23 05:19	02/28/23 17:15	1
3,3'-Dichlorobenzidine	ND		4.8	2.9	ug/L		02/28/23 05:19	02/28/23 17:15	1
4,6-Dinitro-2-methylphenol	ND	LQ	4.8	4.3	ug/L		02/28/23 05:19	02/28/23 17:15	1
4-Bromophenyl phenyl ether	ND		0.19	0.095	ug/L		02/28/23 05:19	02/28/23 17:15	1
4-Chloro-3-methylphenol	ND		0.95	0.13	ug/L		02/28/23 05:19	02/28/23 17:15	1
4-Chlorophenyl phenyl ether	ND		0.19	0.16	ug/L		02/28/23 05:19	02/28/23 17:15	1
4-Nitrophenol	ND		4.8	3.2	ug/L		02/28/23 05:19	02/28/23 17:15	1
Acenaphthene	ND		0.19	0.094	ug/L		02/28/23 05:19	02/28/23 17:15	1
Acenaphthylene	ND		0.19	0.12	ug/L		02/28/23 05:19	02/28/23 17:15	1
Anthracene	ND		0.19	0.080	ug/L		02/28/23 05:19	02/28/23 17:15	1
Benzidine	ND	BA	4.8	2.6	ug/L		02/28/23 05:19	02/28/23 17:15	1
Benzo[a]anthracene	ND		0.19	0.12	ug/L		02/28/23 05:19	02/28/23 17:15	1
Benzo[a]pyrene	ND		0.19	0.15	ug/L		02/28/23 05:19	02/28/23 17:15	1
Benzo[b]fluoranthene	ND		0.19	0.11	ug/L		02/28/23 05:19	02/28/23 17:15	1
Benzo[g,h,i]perylene	ND		0.19	0.10	ug/L		02/28/23 05:19	02/28/23 17:15	1
Benzo[k]fluoranthene	ND		0.19	0.11	ug/L		02/28/23 05:19	02/28/23 17:15	1
bis (2-chloroisopropyl) ether	ND		0.19	0.12	ug/L		02/28/23 05:19	02/28/23 17:15	1
Bis(2-chloroethoxy)methane	ND		0.19	0.10	ug/L		02/28/23 05:19	02/28/23 17:15	1
Bis(2-chloroethyl)ether	ND		0.19	0.099	ug/L		02/28/23 05:19	02/28/23 17:15	1
Bis(2-ethylhexyl) phthalate	ND		4.8	3.4	ug/L		02/28/23 05:19	02/28/23 17:15	1
Butyl benzyl phthalate	ND		0.95	0.64	ug/L		02/28/23 05:19	02/28/23 17:15	1
Chrysene	ND		0.19	0.11	ug/L		02/28/23 05:19	02/28/23 17:15	1
Dibenz(a,h)anthracene	ND		0.19	0.15	ug/L		02/28/23 05:19	02/28/23 17:15	1
Diethyl phthalate	ND		1.9	0.17	ug/L		02/28/23 05:19	02/28/23 17:15	1
Dimethyl phthalate	ND		1.9	0.093	ug/L		02/28/23 05:19	02/28/23 17:15	1
Di-n-butyl phthalate	ND	LQ	1.9	1.8	ug/L		02/28/23 05:19	02/28/23 17:15	1
Di-n-octyl phthalate	ND	LQ	2.9	0.51	ug/L		02/28/23 05:19	02/28/23 17:15	1
Fluoranthene	ND		0.19	0.096	ug/L		02/28/23 05:19	02/28/23 17:15	1
Fluorene	ND		0.19	0.090	ug/L		02/28/23 05:19	02/28/23 17:15	1
Hexachlorobenzene	ND		0.19	0.13	ug/L		02/28/23 05:19	02/28/23 17:15	1
Hexachlorobutadiene	ND		0.19	0.15	ug/L		02/28/23 05:19	02/28/23 17:15	1
Hexachlorocyclopentadiene	ND		0.19	0.15	ug/L		02/28/23 05:19	02/28/23 17:15	1
Hexachloroethane	ND		0.19	0.12	ug/L		02/28/23 05:19	02/28/23 17:15	1
Indeno[1,2,3-cd]pyrene	ND		0.19	0.12	ug/L		02/28/23 05:19	02/28/23 17:15	1
Isophorone	ND		0.19	0.094	ug/L		02/28/23 05:19	02/28/23 17:15	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.19	0.10	ug/L		02/28/23 05:19	02/28/23 17:15	1
Nitrobenzene	ND		0.19	0.14	ug/L		02/28/23 05:19	02/28/23 17:15	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		02/28/23 05:19	02/28/23 17:15	1
N-Nitrosodi-n-propylamine	ND		0.19	0.14	ug/L		02/28/23 05:19	02/28/23 17:15	1
N-Nitrosodiphenylamine	ND		0.19	0.10	ug/L		02/28/23 05:19	02/28/23 17:15	1
Pentachlorophenol	ND		0.95	0.81	ug/L		02/28/23 05:19	02/28/23 17:15	1
Phenanthrene	ND		0.19	0.16	ug/L		02/28/23 05:19	02/28/23 17:15	1
Phenol	ND		0.95	0.50	ug/L		02/28/23 05:19	02/28/23 17:15	1
Pyrene	ND		0.19	0.082	ug/L		02/28/23 05:19	02/28/23 17:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*82*		*28 - 127*	*02/28/23 05:19*	*02/28/23 17:15*	*1*
2-Fluorobiphenyl (Surr)	*64*		*31 - 120*	*02/28/23 05:19*	*02/28/23 17:15*	*1*
2-Fluorophenol (Surr)	*36*		*17 - 120*	*02/28/23 05:19*	*02/28/23 17:15*	*1*
Nitrobenzene-d5 (Surr)	*68*		*27 - 120*	*02/28/23 05:19*	*02/28/23 17:15*	*1*
Phenol-d6 (Surr)	*28*		*10 - 120*	*02/28/23 05:19*	*02/28/23 17:15*	*1*
2,4,6-Tribromophenol	*82*		*28 - 127*	*02/28/23 05:19*	*02/28/23 17:15*	*1*
p-Terphenyl-d14 (Surr)	*71*		*45 - 120*	*02/28/23 05:19*	*02/28/23 17:15*	*1*
2-Fluorobiphenyl (Surr)	*64*		*31 - 120*	*02/28/23 05:19*	*02/28/23 17:15*	*1*
2-Fluorophenol	*36*		*17 - 120*	*02/28/23 05:19*	*02/28/23 17:15*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*02/28/23 05:19*	*02/28/23 17:15*	*1*
Phenol-d6 (Surr)	*28*		*10 - 120*	*02/28/23 05:19*	*02/28/23 17:15*	*1*
p-Terphenyl-d14 (Surr)	*71*		*45 - 120*	*02/28/23 05:19*	*02/28/23 17:15*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/07/23 21:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*20 - 144*		*03/07/23 21:32*	*1*

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: EPBLLC_20230226
Lab Sample ID: 570-129045-1
Date Collected: 02/26/23 10:30
Matrix: Water
Date Received: 02/27/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.049	0.035	mg/L		03/03/23 17:08	03/13/23 16:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*94*		*53 - 151*	*03/03/23 17:08*	*03/13/23 16:39*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.031	J,DX BU BV	0.20	0.019	ug/L			02/28/23 02:55	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.036	J,DX BU	0.20	0.019	ug/L			02/28/23 05:54	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**38**		5.0	1.8	mg/L			02/28/23 01:01	5
Nitrite as N	ND		0.50	0.22	mg/L			02/28/23 01:01	5
Fluoride	ND		0.50	0.23	mg/L			02/28/23 01:01	5
Nitrate as N	**2.6**		0.50	0.098	mg/L			02/28/23 01:01	5
Sulfate	**77**		5.0	1.2	mg/L			02/28/23 01:01	5

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/28/23 23:17	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	2.6		0.10	0.020	mg/L			03/03/23 14:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1200		500	3.5	ug/L		02/28/23 08:01	02/28/23 20:19	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1100	BU	500	3.5	ug/L			02/28/23 23:46	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	21000		150	86	ug/L		02/28/23 10:21	02/28/23 15:36	10
Silver	0.29	J,DX	1.0	0.23	ug/L		02/28/23 10:21	02/28/23 14:31	1
Arsenic	11		1.0	0.16	ug/L		02/28/23 10:21	02/28/23 14:31	1
Barium	310		1.0	0.17	ug/L		02/28/23 10:21	02/28/23 14:31	1
Beryllium	1.3		0.50	0.26	ug/L		02/28/23 10:21	02/28/23 14:31	1
Cadmium	3.7		1.0	0.13	ug/L		02/28/23 10:21	02/28/23 14:31	1
Chromium	36	MB	2.0	0.14	ug/L		02/28/23 10:21	02/28/23 14:31	1
Copper	53		2.0	0.32	ug/L		02/28/23 10:21	02/28/23 14:31	1
Iron	46000	MB	200	37	ug/L		02/28/23 10:21	02/28/23 15:36	10
Manganese	890		1.0	0.41	ug/L		02/28/23 10:21	02/28/23 14:31	1
Nickel	58		2.0	0.17	ug/L		02/28/23 10:21	02/28/23 14:31	1
Lead	22		1.0	0.12	ug/L		02/28/23 10:21	02/28/23 14:31	1
Antimony	1.2	J,DX	2.0	0.36	ug/L		02/28/23 10:21	02/28/23 14:31	1
Zinc	140		20	2.8	ug/L		02/28/23 10:21	02/28/23 14:31	1
Selenium	29		2.0	0.52	ug/L		02/28/23 10:21	02/28/23 14:31	1
Thallium	0.46	J,DX	1.0	0.11	ug/L		02/28/23 10:21	02/28/23 14:31	1
Cobalt	18		1.0	0.14	ug/L		02/28/23 10:21	02/28/23 14:31	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	BU	15	8.6	ug/L			03/01/23 14:38	1
Silver	ND	BU	1.0	0.23	ug/L			03/01/23 14:38	1
Arsenic	**1.4**	**BU**	1.0	0.16	ug/L			03/01/23 14:38	1
Barium	**57**	**BU**	1.0	0.17	ug/L			03/01/23 14:38	1
Beryllium	ND	BU	0.50	0.26	ug/L			03/01/23 14:38	1
Cadmium	**0.16**	**J,DX BU**	1.0	0.13	ug/L			03/01/23 14:38	1
Chromium	**0.64**	**J,DX BU MB**	2.0	0.14	ug/L			03/01/23 14:38	1
Copper	**3.4**	**BU**	2.0	0.32	ug/L			03/01/23 14:38	1
Iron	**8.0**	**J,DX BU**	20	3.7	ug/L			03/01/23 14:38	1
Manganese	**9.2**	**BU**	1.0	0.41	ug/L			03/01/23 14:38	1
Nickel	**11**	**BU**	2.0	0.17	ug/L			03/01/23 14:38	1
Lead	ND	BU	1.0	0.12	ug/L			03/01/23 14:38	1
Antimony	**1.2**	**J,DX BU**	2.0	0.36	ug/L			03/01/23 14:38	1
Zinc	ND	BU	20	2.8	ug/L			03/01/23 14:38	1
Selenium	**29**	**BU**	2.0	0.52	ug/L			03/01/23 14:38	1
Cobalt	**0.29**	**J,DX BU**	1.0	0.14	ug/L			03/01/23 14:38	1
Thallium	ND	BU	1.0	0.11	ug/L			03/01/23 14:38	1

General Chemistry

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		1.0	0.51	mg/L		03/01/23 14:04	03/02/23 12:27	1
Cr (III) (EPA 218.6 CR3)	**0.036**	**J,DX**	0.050	0.0030	mg/L			03/06/23 11:03	1
Ammonia (EPA 350.1)	**0.057**	**J,DX**	0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:54	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/03/23 20:26	1
Turbidity (SM 2130B)	**130**		0.05	0.05	NTU			02/27/23 23:06	1
Total Dissolved Solids (SM 2540C)	**1600**		10	8.7	mg/L			03/02/23 16:27	1
Total Suspended Solids (SM 2540D)	**2000**		33	28	mg/L			03/03/23 18:43	1
Carbon, Total Organic (SM 5310D)	**17**		4.0	2.1	mg/L			03/08/23 22:08	8
MBAS (SM 5540C)	**0.059**	**J,DX**	0.20	0.050	mg/L		02/27/23 20:28	02/27/23 21:58	1
Biochemical Oxygen Demand (SM5210B)	ND		2.0	1.0	mg/L			02/27/23 21:40	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**580**		1.0	1.0	umhos/cm			03/13/23 23:54	1
Settleable Solids (SM 2540F)	**5.0**		0.10	0.10	mL/L			02/27/23 20:30	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

General Chemistry - Dissolved

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			03/06/23 11:03	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**13.15**		0.01	0.01	%			03/14/23 14:48	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/14/23 14:48	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			03/14/23 14:48	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/14/23 14:48	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/14/23 14:48	1
Silt (0.00391 to 0.0625mm)	**81.73**		0.01	0.01	%			03/14/23 14:48	1
Total Silt and Clay (0 to 0.0626mm)	**94.88**		0.01	0.01	%			03/14/23 14:48	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/14/23 14:48	1
Very Fine Sand (0.0625 to 0.125 mm)	**5.12**		0.01	0.01	%			03/14/23 14:48	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

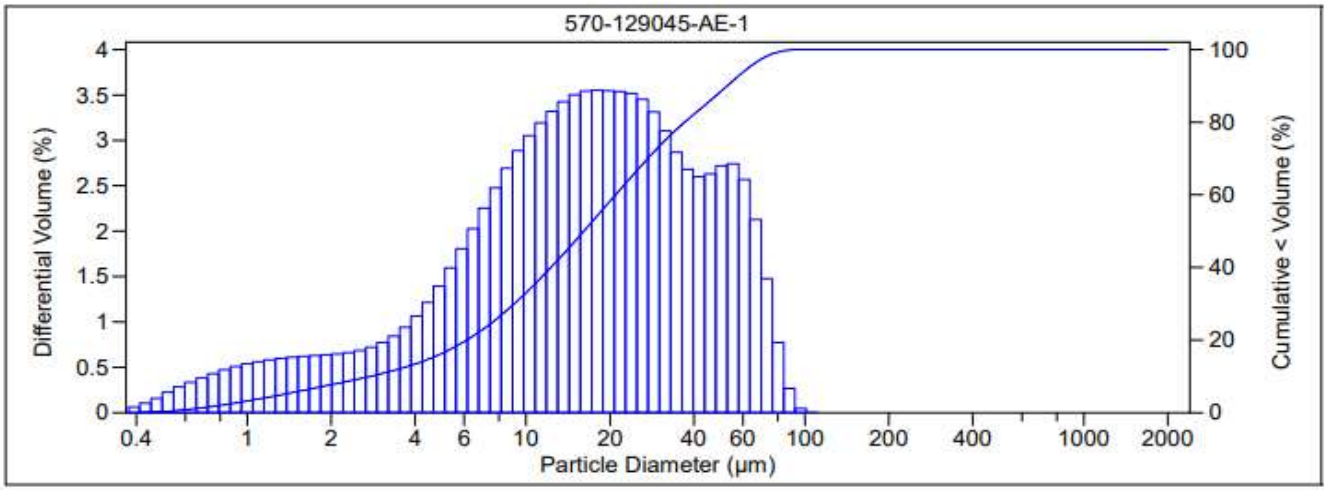
Haley & Aldrich, Inc.

Date Sampled:	02/26/23
Date Received:	02/27/23
Work Order No:	570-129045
Date Analyzed:	03/14/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBMLLC_20230226		NA	0.022

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	5.12	81.73	13.15	94.88



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

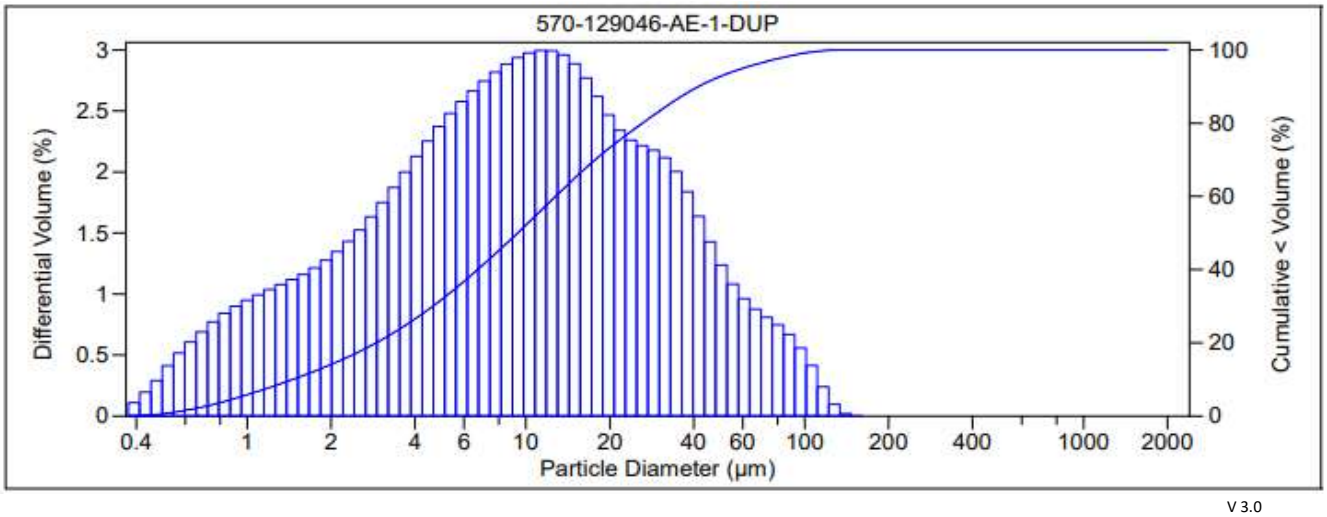
Haley & Aldrich, Inc.

Date Sampled:	02/26/23
Date Received:	02/27/23
Work Order No:	570-129046
Date Analyzed:	03/14/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230226		NA	0.017

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.09	4.50	69.41	26.00	95.41



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

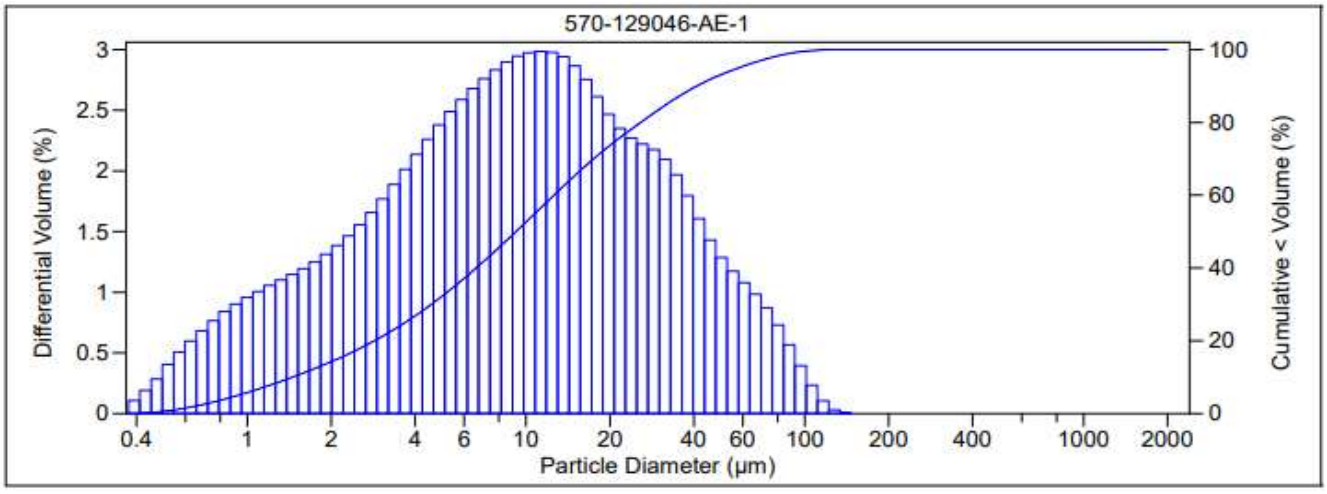
Haley & Aldrich, Inc.

Date Sampled:	02/26/23
Date Received:	02/27/23
Work Order No:	570-129046
Date Analyzed:	03/14/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230226		NA	0.016

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.03	4.07	69.58	26.32	95.90



V 3.0

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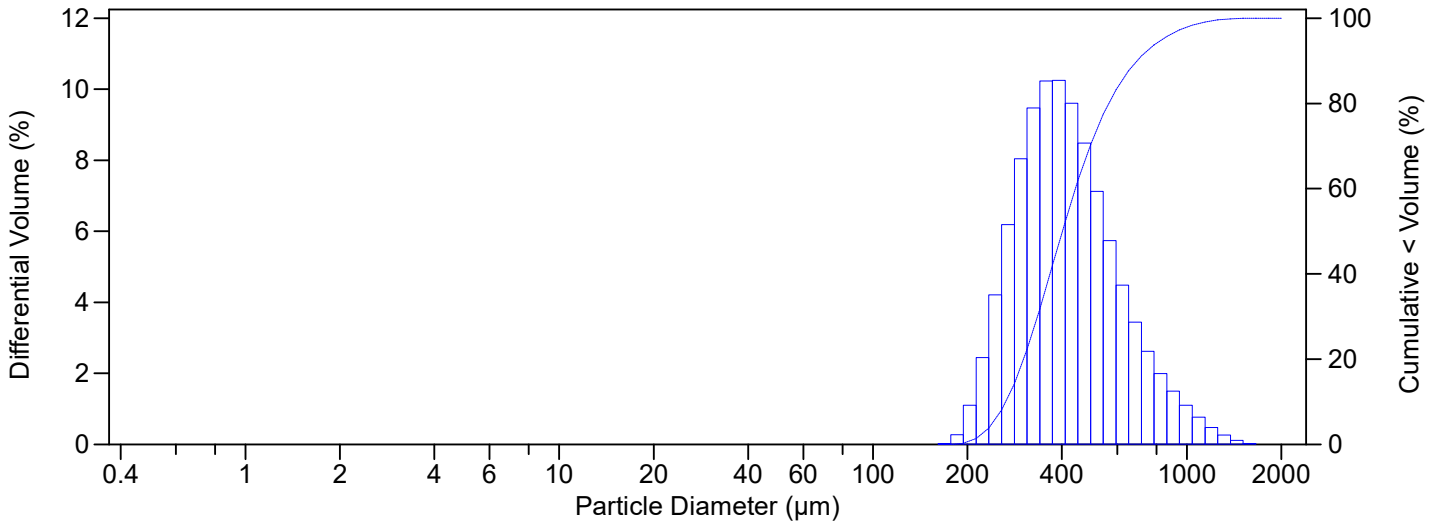
	STD SAND_14 Mar 2023_15.23.15.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	6		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.73%		
LS 13 320	Aqueous Liquid Module		
Start time:	15:22 14 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_14 Mar 2023_15.23.15.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	448.8 µm	S.D.:	189.4 µm
Median:	401.6 µm	Variance:	35886 µm^2
Mean/Median ratio:	1.117	Skewness:	1.667 Right skewed
Mode:	391.0 µm	Kurtosis:	3.705 Leptokurtic

d_{10}: 264.8 µm d_{50}: 401.6 µm d_{90}: 696.1 µm

Folk and Ward Statistics (Phi)

Mean:	1.28	Median:	1.32	Deviation:	0.54
Skewness:	-0.14	Kurtosis:	1.02		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
240.4 µm	288.1 µm	318.3 µm	366.7 µm	401.6 µm	525.3 µm	605.4 µm	835.4 µm

Particle Diameter µm	STD SAND _14 Mar 2023_15.23 .15.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.78
250	64.5
500	26.6
1000	2.14
2000	

STD SAND_14 Mar 2023_15.23.15.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.48
0.412	0	22.73	0	1255	0.27
0.452	0	24.95	0	1377	0.12
0.496	0	27.39	0	1512	0.026
0.545	0	30.07	0	1660	0.0014
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.017		
3.206	0	176.9	0.27		
3.519	0	194.2	1.10		
3.863	0	213.2	2.45		
4.241	0	234.1	4.21		
4.656	0	256.9	6.19		
5.111	0	282.1	8.05		
5.611	0	309.6	9.47		
6.159	0	339.9	10.2		
6.761	0	373.1	10.3		
7.422	0	409.6	9.61		
8.148	0	449.7	8.48		
8.944	0	493.6	7.12		
9.819	0	541.9	5.74		
10.78	0	594.9	4.48		
11.83	0	653.0	3.44		
12.99	0	716.9	2.62		
14.26	0	786.9	2.00		
15.65	0	863.9	1.50		
17.18	0	948.3	1.10		
18.86	0	1041	0.76		

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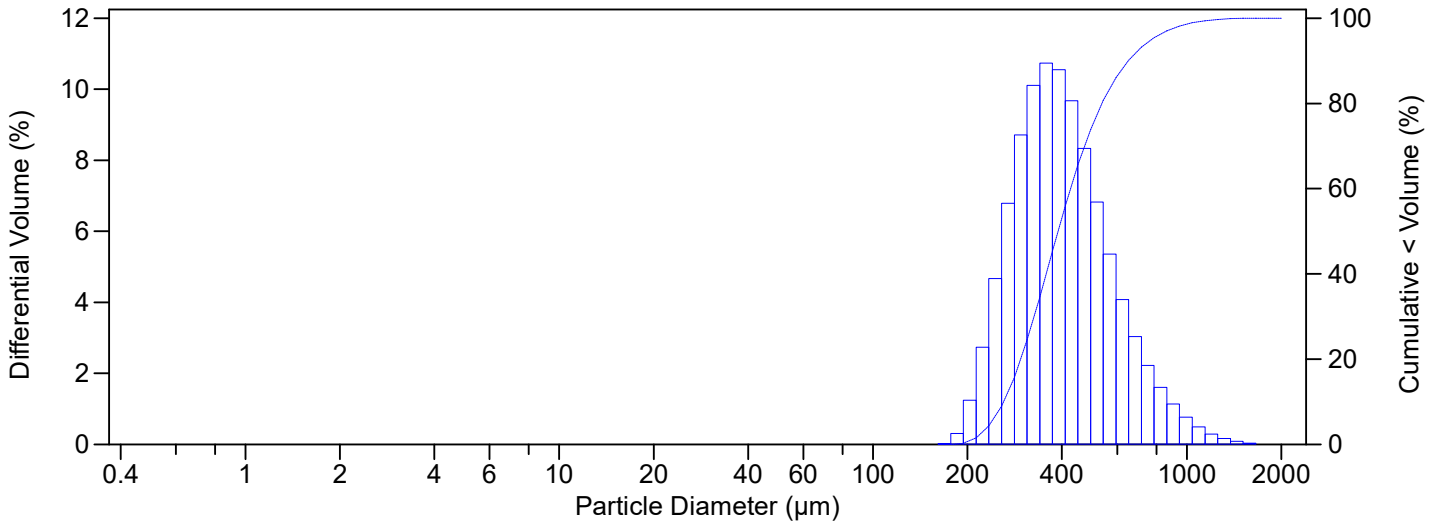
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	8		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.67%		
LS 13 320	Aqueous Liquid Module		
Start time:	15:48 14 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	11%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_14 Mar 2023_15.49.46.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	430.5 µm	S.D.:	174.0 µm
Median:	389.3 µm	Variance:	30293 µm^2
Mean/Median ratio:	1.106	Skewness:	1.746 Right skewed
Mode:	356.1 µm	Kurtosis:	4.555 Leptokurtic

d_{10}: 260.7 µm d_{50}: 389.3 µm d_{90}: 650.8 µm

Folk and Ward Statistics (Phi)

Mean:	1.33	Median:	1.36	Deviation:	0.51
Skewness:	-0.13	Kurtosis:	1.01		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
237.4 µm	282.8 µm	311.2 µm	356.6 µm	389.3 µm	501.4 µm	574.3 µm	773.8 µm

Particle Diameter µm	STD SAND _14 Mar 2023_15.49 .46.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.56
250	67.2
500	23.8
1000	1.41
2000	

STD SAND_14 Mar 2023_15.49.46.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.29
0.412	0	22.73	0	1255	0.16
0.452	0	24.95	0	1377	0.089
0.496	0	27.39	0	1512	0.031
0.545	0	30.07	0	1660	0.0027
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.019		
3.206	0	176.9	0.31		
3.519	0	194.2	1.24		
3.863	0	213.2	2.74		
4.241	0	234.1	4.67		
4.656	0	256.9	6.79		
5.111	0	282.1	8.72		
5.611	0	309.6	10.1		
6.159	0	339.9	10.7		
6.761	0	373.1	10.6		
7.422	0	409.6	9.67		
8.148	0	449.7	8.34		
8.944	0	493.6	6.82		
9.819	0	541.9	5.36		
10.78	0	594.9	4.08		
11.83	0	653.0	3.04		
12.99	0	716.9	2.23		
14.26	0	786.9	1.61		
15.65	0	863.9	1.13		
17.18	0	948.3	0.77		
18.86	0	1041	0.49		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-129045-1	EPBLLC_20230226	86	101	90	97
570-129045-2	TB_20230226-1	92	98	93	100
LCS 570-307642/1003	Lab Control Sample	94	98	95	100
LCSD 570-307642/4	Lab Control Sample Dup	94	98	96	98
MB 570-307642/6	Method Blank	90	95	96	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		14DCBTN
Lab Sample ID	Client Sample ID	(67-133)
570-129045-1	EPBLLC_20230226	111
LCS 570-307594/4	Lab Control Sample	95
LCSD 570-307594/5	Lab Control Sample Dup	99
MB 570-307594/7	Method Blank	101

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
		TBP	TBP	FBP	FBP	2FP	2FP	NBZ	NBZ
Lab Sample ID	Client Sample ID	(28-127)	(28-127)	(31-120)	(31-120)	(17-120)	(17-120)	(27-120)	(27-120)
570-129045-1	EPBLLC_20230226	82	82	64	64	36	36	68	68

		Percent Surrogate Recovery (Acceptance Limits)			
		PHL6	PHL6	TPHd14	TPHd14
Lab Sample ID	Client Sample ID	(10-120)	(10-120)	(45-120)	(45-120)
570-129045-1	EPBLLC_20230226	28	28	71	71

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TBP (28-127)	TBP (28-127)	FBP (31-120)	2FP (17-120)	2FP (17-120)	NBZ (27-120)	NBZ (27-120)	PHL6 (10-120)
LCS 570-307149/2-A	Lab Control Sample	107	107	84	48	48	76	76	34
LCSD 570-307149/3-A	Lab Control Sample Dup	95	95	69	44	44	66	66	31
MB 570-307149/1-A	Method Blank	81	81	60	42	42	68	68	29

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	TPHd14 (45-120)
LCS 570-307149/2-A	Lab Control Sample	106
LCSD 570-307149/3-A	Lab Control Sample Dup	86
MB 570-307149/1-A	Method Blank	78

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BFB1 (20-144)
570-129045-1	EPBLLC_20230226	89
LCS 570-309605/3	Lab Control Sample	87
LCSD 570-309605/4	Lab Control Sample Dup	86
MB 570-309605/5	Method Blank	64

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OTCSN1 (53-151)
570-129045-1	EPBLLC_20230226	94
LCS 570-308878/2-A	Lab Control Sample	99
LCSD 570-308878/3-A	Lab Control Sample Dup	110
MB 570-308878/1-A	Method Blank	105

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-307642/6
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 12:54	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 12:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 12:54	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 12:54	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 12:54	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 12:54	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 12:54	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 12:54	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 12:54	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 12:54	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 12:54	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 12:54	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 12:54	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 12:54	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 12:54	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 12:54	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 12:54	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 12:54	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 12:54	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 12:54	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 12:54	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 12:54	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 12:54	1
Acetone	ND		20	16	ug/L			02/28/23 12:54	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 12:54	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 12:54	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 12:54	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 12:54	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 12:54	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 12:54	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 12:54	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 12:54	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 12:54	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 12:54	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 12:54	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 12:54	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-307642/6
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 12:54	1
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 12:54	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Ethanol	ND		100	65	ug/L			02/28/23 12:54	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 12:54	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 12:54	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Isopropanol	ND		250	120	ug/L			02/28/23 12:54	1
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 12:54	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 12:54	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 12:54	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 12:54	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 12:54	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 12:54	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 12:54	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 12:54	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 12:54	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 12:54	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 12:54	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 12:54	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 12:54	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 12:54	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 12:54	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 12:54	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 12:54	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 12:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*60 - 140*		*02/28/23 12:54*	*1*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*02/28/23 12:54*	*1*
Dibromofluoromethane (Surr)	*96*		*60 - 140*		*02/28/23 12:54*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*02/28/23 12:54*	*1*

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.5		ug/L		105	60 - 140
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.1		ug/L		101	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.5		ug/L		115	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloroethane	10.0	10.4		ug/L		104	70 - 130
1,1-Dichloroethene	10.0	10.8		ug/L		108	50 - 150
1,1-Dichloropropene	10.0	11.1		ug/L		111	60 - 140
1,2,3-Trichlorobenzene	10.0	11.1		ug/L		111	60 - 140
1,2,3-Trichloropropane	10.0	9.85		ug/L		99	60 - 140
1,2,4-Trichlorobenzene	10.0	10.9		ug/L		109	60 - 140
1,2,4-Trimethylbenzene	10.0	10.3		ug/L		103	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	9.21		ug/L		92	60 - 140
1,2-Dibromoethane	10.0	10.6		ug/L		106	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	11.0		ug/L		110	60 - 140
1,2-Dichlorobenzene	10.0	10.7		ug/L		107	65 - 135
1,2-Dichloroethane	10.0	9.48		ug/L		95	70 - 130
1,2-Dichloropropane	10.0	10.5		ug/L		105	35 - 165
1,3,5-Trimethylbenzene	10.0	10.8		ug/L		108	60 - 140
1,3-Dichlorobenzene	10.0	11.0		ug/L		110	70 - 130
1,3-Dichloropropane	10.0	10.8		ug/L		108	60 - 140
1,4-Dichlorobenzene	10.0	10.8		ug/L		108	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	11.2		ug/L		112	60 - 140
2,2-Dichloropropane	10.0	11.3		ug/L		113	60 - 140
2-Butanone (MEK)	10.0	9.16		ug/L		92	60 - 140
2-Chloroethyl vinyl ether	10.0	8.35		ug/L		83	1 - 225
2-Chlorotoluene	10.0	10.4		ug/L		104	60 - 140
2-Hexanone	10.0	9.57		ug/L		96	60 - 140
4-Chlorotoluene	10.0	10.3		ug/L		103	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	9.75		ug/L		98	60 - 140
Acetone	10.0	ND		ug/L		110	60 - 140
Acrolein	20.0	19.6		ug/L		98	60 - 140
Acrylonitrile	10.0	9.84		ug/L		98	60 - 140
Benzene	10.0	10.9		ug/L		109	65 - 135
Bromobenzene	10.0	10.9		ug/L		109	60 - 140
Bromochloromethane	10.0	10.8		ug/L		108	60 - 140
Bromodichloromethane	10.0	10.4		ug/L		104	65 - 135
Bromoform	10.0	11.1		ug/L		111	70 - 130
Bromomethane	10.0	9.20		ug/L		92	15 - 185
Carbon disulfide	10.0	11.7		ug/L		117	60 - 140
Carbon tetrachloride	10.0	10.7		ug/L		107	70 - 130
Chlorobenzene	10.0	10.9		ug/L		109	65 - 135
Chloroethane	10.0	11.4		ug/L		114	40 - 160
Chloroform	10.0	9.95		ug/L		99	70 - 135
Chloromethane	10.0	8.96		ug/L		90	1 - 205
cis-1,2-Dichloroethene	10.0	10.7		ug/L		107	60 - 140
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	25 - 175
Cyclohexane	10.0	11.5		ug/L		115	60 - 140
Dibromochloromethane	10.0	10.8		ug/L		108	70 - 135
Dibromomethane	10.0	10.2		ug/L		102	60 - 140
Dichlorodifluoromethane	10.0	10.6		ug/L		106	60 - 140
Di-isopropyl ether (DIPE)	10.0	10.3		ug/L		103	60 - 140
Ethanol	100	128		ug/L		128	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	10.4		ug/L		104	60 - 140
Ethylbenzene	10.0	10.9		ug/L		109	60 - 140
Hexachloro-1,3-butadiene	10.0	11.0		ug/L		110	60 - 140
Isopropanol	50.0	ND		ug/L		97	60 - 140
Isopropylbenzene	10.0	11.3		ug/L		113	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	10.6		ug/L		106	60 - 140
Methylene Chloride	10.0	10.1		ug/L		101	60 - 140
Naphthalene	10.0	10.7		ug/L		107	60 - 140
n-Butylbenzene	10.0	11.3		ug/L		113	60 - 140
N-Propylbenzene	10.0	11.3		ug/L		113	60 - 140
o-Xylene	10.0	10.7		ug/L		107	60 - 140
m,p-Xylene	20.0	22.0		ug/L		110	60 - 140
p-Isopropyltoluene	10.0	11.0		ug/L		110	60 - 140
sec-Butylbenzene	10.0	11.2		ug/L		112	60 - 140
Styrene	10.0	11.0		ug/L		110	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	10.2		ug/L		102	60 - 140
tert-Butyl alcohol (TBA)	50.0	57.4		ug/L		115	60 - 140
tert-Butylbenzene	10.0	11.1		ug/L		111	60 - 140
Tetrachloroethene	10.0	11.5		ug/L		115	70 - 130
Tetrahydrofuran	10.0	9.15	J,DX	ug/L		92	60 - 140
Toluene	10.0	10.8		ug/L		108	70 - 130
trans-1,2-Dichloroethene	10.0	11.2		ug/L		112	70 - 130
trans-1,3-Dichloropropene	10.0	10.5		ug/L		105	50 - 150
Trichloroethene	10.0	10.6		ug/L		106	65 - 135
Trichlorofluoromethane	10.0	10.9		ug/L		109	50 - 150
Vinyl acetate	10.0	9.59		ug/L		96	60 - 140
Vinyl chloride	10.0	11.2		ug/L		112	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*60 - 140*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Dibromofluoromethane (Surr)	*95*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.7		ug/L		107	60 - 140	2	30
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	70 - 130	1	36
1,1,2,2-Tetrachloroethane	10.0	9.96		ug/L		100	60 - 140	2	61
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.8		ug/L		118	60 - 140	3	30
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	70 - 130	1	45
1,1-Dichloroethane	10.0	10.7		ug/L		107	70 - 130	3	40
1,1-Dichloroethene	10.0	10.8		ug/L		108	50 - 150	0	32
1,1-Dichloropropene	10.0	11.2		ug/L		112	60 - 140	1	30
1,2,3-Trichlorobenzene	10.0	10.6		ug/L		106	60 - 140	4	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichloropropane			10.0	10.1		ug/L		101	60 - 140	3	30
1,2,4-Trichlorobenzene			10.0	10.7		ug/L		107	60 - 140	2	30
1,2,4-Trimethylbenzene			10.0	10.3		ug/L		103	60 - 140	0	30
1,2-Dibromo-3-Chloropropane			10.0	9.70		ug/L		97	60 - 140	5	30
1,2-Dibromoethane			10.0	10.7		ug/L		107	60 - 140	1	30
1,2-Dichloro-1,1,2-trifluoroethane			10.0	11.4		ug/L		114	60 - 140	3	30
1,2-Dichlorobenzene			10.0	10.2		ug/L		102	65 - 135	4	57
1,2-Dichloroethane			10.0	9.66		ug/L		97	70 - 130	2	49
1,2-Dichloropropane			10.0	10.3		ug/L		103	35 - 165	2	55
1,3,5-Trimethylbenzene			10.0	11.1		ug/L		111	60 - 140	3	30
1,3-Dichlorobenzene			10.0	10.8		ug/L		108	70 - 130	2	43
1,3-Dichloropropane			10.0	10.6		ug/L		106	60 - 140	2	30
1,4-Dichlorobenzene			10.0	10.7		ug/L		107	65 - 135	0	57
2,2-Dichloro-1,1,1-trifluoroethane			10.0	10.9		ug/L		109	60 - 140	2	30
2,2-Dichloropropane			10.0	11.4		ug/L		114	60 - 140	1	30
2-Butanone (MEK)			10.0	8.23		ug/L		82	60 - 140	11	30
2-Chloroethyl vinyl ether			10.0	8.67		ug/L		87	1 - 225	4	71
2-Chlorotoluene			10.0	10.9		ug/L		109	60 - 140	4	30
2-Hexanone			10.0	9.54		ug/L		95	60 - 140	0	30
4-Chlorotoluene			10.0	10.3		ug/L		103	60 - 140	0	30
4-Methyl-2-pentanone (MIBK)			10.0	10.2		ug/L		102	60 - 140	5	30
Acetone			10.0	ND		ug/L		108	60 - 140	2	30
Acrolein			20.0	19.6		ug/L		98	60 - 140	0	60
Acrylonitrile			10.0	10.0		ug/L		100	60 - 140	2	60
Benzene			10.0	11.0		ug/L		110	65 - 135	1	61
Bromobenzene			10.0	11.1		ug/L		111	60 - 140	2	30
Bromochloromethane			10.0	11.2		ug/L		112	60 - 140	3	30
Bromodichloromethane			10.0	10.4		ug/L		104	65 - 135	0	56
Bromoform			10.0	10.5		ug/L		105	70 - 130	6	42
Bromomethane			10.0	8.84		ug/L		88	15 - 185	4	61
Carbon disulfide			10.0	11.3		ug/L		113	60 - 140	3	30
Carbon tetrachloride			10.0	10.6		ug/L		106	70 - 130	0	41
Chlorobenzene			10.0	11.0		ug/L		110	65 - 135	1	53
Chloroethane			10.0	11.5		ug/L		115	40 - 160	1	78
Chloroform			10.0	10.1		ug/L		101	70 - 135	2	30
Chloromethane			10.0	9.80		ug/L		98	1 - 205	9	60
cis-1,2-Dichloroethene			10.0	10.8		ug/L		108	60 - 140	1	30
cis-1,3-Dichloropropene			10.0	10.8		ug/L		108	25 - 175	1	58
Cyclohexane			10.0	12.1		ug/L		121	60 - 140	5	30
Dibromochloromethane			10.0	10.6		ug/L		106	70 - 135	2	50
Dibromomethane			10.0	10.2		ug/L		102	60 - 140	0	30
Dichlorodifluoromethane			10.0	11.0		ug/L		110	60 - 140	4	30
Di-isopropyl ether (DIPE)			10.0	10.3		ug/L		103	60 - 140	0	30
Ethanol			100	89.0	J,DX BA	ug/L		89	60 - 140	36	30
Ethyl-t-butyl ether (ETBE)			10.0	10.8		ug/L		108	60 - 140	3	30
Ethylbenzene			10.0	11.0		ug/L		110	60 - 140	0	63
Hexachloro-1,3-butadiene			10.0	11.1		ug/L		111	60 - 140	1	30
Isopropanol			50.0	ND		ug/L		102	60 - 140	5	30
Isopropylbenzene			10.0	11.2		ug/L		112	60 - 140	1	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	10.5		ug/L		105	60 - 140	0	30
Methylene Chloride	10.0	10.1		ug/L		101	60 - 140	0	28
Naphthalene	10.0	10.7		ug/L		107	60 - 140	0	30
n-Butylbenzene	10.0	11.4		ug/L		114	60 - 140	1	30
N-Propylbenzene	10.0	11.5		ug/L		115	60 - 140	1	30
o-Xylene	10.0	10.7		ug/L		107	60 - 140	0	30
m,p-Xylene	20.0	22.2		ug/L		111	60 - 140	1	30
p-Isopropyltoluene	10.0	10.9		ug/L		109	60 - 140	1	30
sec-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	2	30
Styrene	10.0	11.2		ug/L		112	60 - 140	1	30
Tert-amyl-methyl ether (TAME)	10.0	10.2		ug/L		102	60 - 140	0	30
tert-Butyl alcohol (TBA)	50.0	50.9		ug/L		102	60 - 140	12	30
tert-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	1	30
Tetrachloroethene	10.0	11.7		ug/L		117	70 - 130	2	39
Tetrahydrofuran	10.0	9.39	J,DX	ug/L		94	60 - 140	3	30
Toluene	10.0	10.6		ug/L		106	70 - 130	2	41
trans-1,2-Dichloroethene	10.0	11.5		ug/L		115	70 - 130	2	45
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	50 - 150	3	86
Trichloroethene	10.0	10.7		ug/L		107	65 - 135	1	48
Trichlorofluoromethane	10.0	10.9		ug/L		109	50 - 150	0	84
Vinyl acetate	10.0	9.94		ug/L		99	60 - 140	4	30
Vinyl chloride	10.0	11.6		ug/L		116	5 - 195	4	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*60 - 140*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Dibromofluoromethane (Surr)	*96*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-307594/7
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			02/28/23 12:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*101*		*67 - 133*		*02/28/23 12:05*	*1*

Lab Sample ID: LCS 570-307594/4
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	18.4		ug/L		92	75 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307594/4
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*95*		*67 - 133*

Lab Sample ID: LCSD 570-307594/5
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	18.7		ug/L		93	75 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*99*		*67 - 133*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-307149/1-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Chlorophenol	ND		0.20	0.096	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Nitrophenol	ND		5.0	3.5	ug/L		02/27/23 05:32	02/27/23 17:25	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		02/27/23 05:32	02/27/23 17:25	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Nitrophenol	ND		5.0	3.4	ug/L		02/27/23 05:32	02/27/23 17:25	1
Acenaphthene	ND		0.20	0.098	ug/L		02/27/23 05:32	02/27/23 17:25	1
Acenaphthylene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Anthracene	ND		0.20	0.084	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzidine	ND		5.0	2.7	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[b]fluoranthene	0.123	J,DX	0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-307149/1-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		02/27/23 05:32	02/27/23 17:25	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		02/27/23 05:32	02/27/23 17:25	1
Chrysene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		02/27/23 05:32	02/27/23 17:25	1
Diethyl phthalate	ND		2.0	0.18	ug/L		02/27/23 05:32	02/27/23 17:25	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		02/27/23 05:32	02/27/23 17:25	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		02/27/23 05:32	02/27/23 17:25	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		02/27/23 05:32	02/27/23 17:25	1
Fluoranthene	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
Fluorene	ND		0.20	0.095	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachloroethane	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Isophorone	ND		0.20	0.099	ug/L		02/27/23 05:32	02/27/23 17:25	1
Naphthalene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Nitrobenzene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Pentachlorophenol	ND		1.0	0.84	ug/L		02/27/23 05:32	02/27/23 17:25	1
Phenanthrene	ND		0.20	0.16	ug/L		02/27/23 05:32	02/27/23 17:25	1
Phenol	ND		1.0	0.52	ug/L		02/27/23 05:32	02/27/23 17:25	1
Pyrene	ND		0.20	0.086	ug/L		02/27/23 05:32	02/27/23 17:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*81*		*28 - 127*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2,4,6-Tribromophenol (Surr)	*81*		*28 - 127*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorobiphenyl (Surr)	*60*		*31 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorophenol	*42*		*17 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorophenol (Surr)	*42*		*17 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Nitrobenzene-d5 (Surr)	*68*		*27 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Phenol-d6 (Surr)	*29*		*10 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
p-Terphenyl-d14 (Surr)	*78*		*45 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	12.1		ug/L		61	57 - 130
1,2-Dichlorobenzene	20.0	13.7		ug/L		69	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	18.7		ug/L		93	60 - 115

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3-Dichlorobenzene	20.0	12.6		ug/L		63	37 - 120
1,4-Dichlorobenzene	20.0	13.1		ug/L		66	39 - 120
2,4,6-Trichlorophenol	20.0	21.3		ug/L		107	52 - 129
2,4-Dichlorophenol	20.0	17.6		ug/L		88	53 - 122
2,4-Dimethylphenol	20.0	17.3		ug/L		86	42 - 120
2,4-Dinitrophenol	20.0	21.2		ug/L		106	1 - 173
2,4-Dinitrotoluene	20.0	25.8	LQ	ug/L		129	48 - 127
2,6-Dinitrotoluene	20.0	25.4		ug/L		127	68 - 137
2-Chloronaphthalene	20.0	16.4		ug/L		82	65 - 120
2-Chlorophenol	20.0	16.6		ug/L		83	36 - 120
2-Nitrophenol	20.0	20.2		ug/L		101	45 - 167
3,3'-Dichlorobenzidine	20.0	22.3		ug/L		111	8 - 213
4,6-Dinitro-2-methylphenol	20.0	27.5	LQ	ug/L		138	53 - 130
4-Bromophenyl phenyl ether	20.0	17.8		ug/L		89	65 - 120
4-Chloro-3-methylphenol	20.0	20.1		ug/L		101	41 - 128
4-Chlorophenyl phenyl ether	20.0	18.4		ug/L		92	38 - 145
4-Nitrophenol	20.0	12.6		ug/L		63	13 - 129
Acenaphthene	20.0	17.9		ug/L		89	60 - 132
Acenaphthylene	20.0	21.3		ug/L		107	54 - 126
Anthracene	20.0	21.0		ug/L		105	43 - 120
Benzidine	20.0	9.42		ug/L		47	20 - 164
Benzo[a]anthracene	20.0	23.4		ug/L		117	42 - 133
Benzo[a]pyrene	20.0	25.1		ug/L		126	32 - 148
Benzo[b]fluoranthene	20.0	23.5		ug/L		117	42 - 140
Benzo[g,h,i]perylene	20.0	23.9		ug/L		120	1 - 195
Benzo[k]fluoranthene	20.0	24.9		ug/L		124	25 - 146
bis (2-chloroisopropyl) ether	20.0	16.6		ug/L		83	63 - 139
Bis(2-chloroethoxy)methane	20.0	14.9		ug/L		75	49 - 165
Bis(2-chloroethyl)ether	20.0	16.1		ug/L		80	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	25.7		ug/L		128	29 - 137
Butyl benzyl phthalate	20.0	25.3		ug/L		126	1 - 140
Chrysene	20.0	22.3		ug/L		111	44 - 140
Dibenz(a,h)anthracene	20.0	22.4		ug/L		112	1 - 200
Diethyl phthalate	20.0	22.9		ug/L		115	1 - 120
Dimethyl phthalate	20.0	22.7		ug/L		113	1 - 120
Di-n-butyl phthalate	20.0	24.2	LQ	ug/L		121	8 - 120
Di-n-octyl phthalate	20.0	28.5	LQ	ug/L		142	19 - 132
Fluoranthene	20.0	22.7		ug/L		114	43 - 121
Fluorene	20.0	19.1		ug/L		95	70 - 120
Hexachlorobenzene	20.0	17.8		ug/L		89	8 - 142
Hexachlorobutadiene	20.0	11.9		ug/L		59	38 - 120
Hexachlorocyclopentadiene	20.0	22.1		ug/L		110	43 - 145
Hexachloroethane	20.0	13.1		ug/L		66	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	22.4		ug/L		112	1 - 151
Isophorone	20.0	17.4		ug/L		87	47 - 180
Naphthalene	20.0	12.5		ug/L		62	36 - 120
Nitrobenzene	20.0	16.2		ug/L		81	54 - 158
N-Nitrosodimethylamine	20.0	9.35		ug/L		47	20 - 120
N-Nitrosodi-n-propylamine	20.0	17.7		ug/L		88	14 - 198

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
N-Nitrosodiphenylamine	20.0	21.4		ug/L		107	65 - 133
Pentachlorophenol	20.0	14.9		ug/L		74	38 - 152
Phenanthrene	20.0	19.3		ug/L		96	65 - 120
Phenol	20.0	7.24		ug/L		36	17 - 120
Pyrene	20.0	21.0		ug/L		105	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*107*		*28 - 127*
2,4,6-Tribromophenol (Surr)	*107*		*28 - 127*
2-Fluorobiphenyl (Surr)	*84*		*31 - 120*
2-Fluorophenol	*48*		*17 - 120*
2-Fluorophenol (Surr)	*48*		*17 - 120*
Nitrobenzene-d5	*76*		*27 - 120*
Nitrobenzene-d5 (Surr)	*76*		*27 - 120*
Phenol-d6 (Surr)	*34*		*10 - 120*
p-Terphenyl-d14 (Surr)	*106*		*45 - 120*

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	20.0	10.8	LR	ug/L		54	57 - 130	12	30
1,2-Dichlorobenzene	20.0	12.4		ug/L		62	40 - 120	10	20
1,2-Diphenylhydrazine(as Azobenzene)	20.0	16.4		ug/L		82	60 - 115	13	30
1,3-Dichlorobenzene	20.0	11.8		ug/L		59	37 - 120	7	20
1,4-Dichlorobenzene	20.0	12.2		ug/L		61	39 - 120	7	20
2,4,6-Trichlorophenol	20.0	17.5		ug/L		88	52 - 129	20	35
2,4-Dichlorophenol	20.0	15.3		ug/L		76	53 - 122	14	30
2,4-Dimethylphenol	20.0	15.3		ug/L		76	42 - 120	12	35
2,4-Dinitrophenol	20.0	16.7		ug/L		84	1 - 173	23	79
2,4-Dinitrotoluene	20.0	21.5		ug/L		107	48 - 127	18	25
2,6-Dinitrotoluene	20.0	21.0		ug/L		105	68 - 137	19	29
2-Chloronaphthalene	20.0	13.9	BA	ug/L		69	65 - 120	17	15
2-Chlorophenol	20.0	15.2		ug/L		76	36 - 120	9	37
2-Nitrophenol	20.0	18.1		ug/L		91	45 - 167	11	33
3,3'-Dichlorobenzidine	20.0	19.0		ug/L		95	8 - 213	16	65
4,6-Dinitro-2-methylphenol	20.0	24.6		ug/L		123	53 - 130	11	122
4-Bromophenyl phenyl ether	20.0	15.9		ug/L		80	65 - 120	11	26
4-Chloro-3-methylphenol	20.0	16.9		ug/L		84	41 - 128	18	44
4-Chlorophenyl phenyl ether	20.0	15.3		ug/L		76	38 - 145	18	36
4-Nitrophenol	20.0	10.3		ug/L		51	13 - 129	20	79
Acenaphthene	20.0	15.0		ug/L		75	60 - 132	17	29
Acenaphthylene	20.0	17.9		ug/L		89	54 - 126	17	45
Anthracene	20.0	18.3		ug/L		91	43 - 120	14	40
Benzidine	20.0	6.51	BA	ug/L		33	20 - 164	37	30
Benzo[a]anthracene	20.0	19.2		ug/L		96	42 - 133	20	32
Benzo[a]pyrene	20.0	20.7		ug/L		103	32 - 148	19	43

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzo[b]fluoranthene			20.0	19.6		ug/L		98	42 - 140	18	43
Benzo[g,h,i]perylene			20.0	20.9		ug/L		105	1 - 195	13	61
Benzo[k]fluoranthene			20.0	20.8		ug/L		104	25 - 146	18	38
bis (2-chloroisopropyl) ether			20.0	15.2		ug/L		76	63 - 139	9	46
Bis(2-chloroethoxy)methane			20.0	12.9		ug/L		65	49 - 165	14	32
Bis(2-chloroethyl)ether			20.0	14.1		ug/L		71	43 - 126	13	65
Bis(2-ethylhexyl) phthalate			20.0	22.7		ug/L		114	29 - 137	12	50
Butyl benzyl phthalate			20.0	22.0		ug/L		110	1 - 140	14	36
Chrysene			20.0	18.6		ug/L		93	44 - 140	18	53
Dibenz(a,h)anthracene			20.0	19.4		ug/L		97	1 - 200	14	75
Diethyl phthalate			20.0	19.1		ug/L		96	1 - 120	18	60
Dimethyl phthalate			20.0	18.6		ug/L		93	1 - 120	20	110
Di-n-butyl phthalate			20.0	20.5		ug/L		103	8 - 120	16	28
Di-n-octyl phthalate			20.0	26.1		ug/L		131	19 - 132	9	42
Fluoranthene			20.0	18.9		ug/L		95	43 - 121	18	40
Fluorene			20.0	16.1		ug/L		80	70 - 120	17	23
Hexachlorobenzene			20.0	15.4		ug/L		77	8 - 142	15	33
Hexachlorobutadiene			20.0	10.6		ug/L		53	38 - 120	11	38
Hexachlorocyclopentadiene			20.0	18.5		ug/L		92	43 - 145	18	22
Hexachloroethane			20.0	12.0		ug/L		60	55 - 120	9	32
Indeno[1,2,3-cd]pyrene			20.0	19.5		ug/L		97	1 - 151	14	60
Isophorone			20.0	15.1		ug/L		75	47 - 180	14	56
Naphthalene			20.0	11.5		ug/L		57	36 - 120	9	39
Nitrobenzene			20.0	14.2		ug/L		71	54 - 158	13	37
N-Nitrosodimethylamine			20.0	9.77		ug/L		49	20 - 120	4	21
N-Nitrosodi-n-propylamine			20.0	15.6		ug/L		78	14 - 198	12	52
N-Nitrosodiphenylamine			20.0	19.0		ug/L		95	65 - 133	12	20
Pentachlorophenol			20.0	12.6		ug/L		63	38 - 152	16	52
Phenanthrene			20.0	16.7		ug/L		83	65 - 120	15	24
Phenol			20.0	6.65		ug/L		33	17 - 120	8	39
Pyrene			20.0	16.9		ug/L		84	70 - 120	22	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*95*		*28 - 127*
2,4,6-Tribromophenol (Surr)	*95*		*28 - 127*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*
2-Fluorophenol	*44*		*17 - 120*
2-Fluorophenol (Surr)	*44*		*17 - 120*
Nitrobenzene-d5	*66*		*27 - 120*
Nitrobenzene-d5 (Surr)	*66*		*27 - 120*
Phenol-d6 (Surr)	*31*		*10 - 120*
p-Terphenyl-d14 (Surr)	*86*		*45 - 120*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-309605/5
Matrix: Water
Analysis Batch: 309605

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/07/23 14:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*64*		*20 - 144*		*03/07/23 14:47*	*1*

Lab Sample ID: LCS 570-309605/3
Matrix: Water
Analysis Batch: 309605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Gasoline Range Organics (C4-C13)	1920	2030		ug/L		106	71 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*87*		*20 - 144*

Lab Sample ID: LCSD 570-309605/4
Matrix: Water
Analysis Batch: 309605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)	1920	1940		ug/L		101	71 - 120	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*86*		*20 - 144*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-308878/1-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/03/23 17:08	03/05/23 03:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*105*		*53 - 151*	*03/03/23 17:08*	*03/05/23 03:27*	*1*

Lab Sample ID: LCS 570-308878/2-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308878

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28	4.00	3.67		mg/L		92	65 - 129

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*99*		*53 - 151*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: LCSD 570-308878/3-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308878

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			4.00	3.89		mg/L		97	65 - 129	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*110*		*53 - 151*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-307526/4
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			02/28/23 02:19	1

Lab Sample ID: LCS 570-307526/5
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.5		ug/L		101	95 - 107		

Lab Sample ID: LCSD 570-307526/6
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.4		ug/L		101	95 - 107	0	20

Lab Sample ID: 570-129045-1 MS
Matrix: Water
Analysis Batch: 307526

Client Sample ID: EPBLLC_20230226
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	0.031	J,DX BU BV	50.1	49.0		ug/L		98	85 - 121		

Lab Sample ID: 570-129045-1 MSD
Matrix: Water
Analysis Batch: 307526

Client Sample ID: EPBLLC_20230226
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.031	J,DX BU BV	50.1	48.6		ug/L		97	85 - 121	1	25

Lab Sample ID: MB 570-307529/1-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			02/28/23 05:18	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: LCS 570-307529/2-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.4		ug/L		101	95 - 107		

Lab Sample ID: LCSD 570-307529/3-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.7		ug/L		101	95 - 107	1	20

Lab Sample ID: 570-129045-1 MS
Matrix: Water
Analysis Batch: 307526

Client Sample ID: EPBLLC_20230226
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	0.036	J,DX BU	50.1	52.9		ug/L		106	85 - 121		

Lab Sample ID: 570-129045-1 MSD
Matrix: Water
Analysis Batch: 307526

Client Sample ID: EPBLLC_20230226
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.036	J,DX BU	50.1	50.5		ug/L		101	85 - 121	5	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-307134/6
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			02/27/23 06:29	1
Nitrate as N	ND		0.10	0.020	mg/L			02/27/23 06:29	1

Lab Sample ID: LCS 570-307134/7
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N			2.50	2.55		mg/L		102	90 - 110		
Nitrate as N			5.00	4.98		mg/L		100	90 - 110		

Lab Sample ID: LCSD 570-307134/8
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.51		mg/L		100	90 - 110	1	15
Nitrate as N			5.00	4.91		mg/L		98	90 - 110	1	15

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 570-307135/6
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			02/27/23 06:29	1
Fluoride	ND		0.10	0.046	mg/L			02/27/23 06:29	1
Sulfate	ND		1.0	0.24	mg/L			02/27/23 06:29	1

Lab Sample ID: LCS 570-307135/7
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.6		mg/L		99	90 - 110
Fluoride	2.50	2.56		mg/L		102	90 - 110
Sulfate	50.0	49.1		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-307135/8
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	48.7		mg/L		97	90 - 110	2	15
Fluoride	2.50	2.52		mg/L		101	90 - 110	1	15
Sulfate	50.0	48.3		mg/L		97	90 - 110	2	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-307808/7
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/28/23 19:27	1

Lab Sample ID: LCS 570-307808/8
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.2		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-307808/9
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.1		ug/L		96	85 - 115	0	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-307563/1-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		02/28/23 08:01	02/28/23 19:24	1

Lab Sample ID: LCS 570-307563/2-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	489	J,DX	ug/L		98	85 - 115

Lab Sample ID: LCSD 570-307563/3-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	492	J,DX	ug/L		98	85 - 115	1	20

Lab Sample ID: MB 570-307724/1-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			02/28/23 23:34	1

Lab Sample ID: LCS 570-307724/2-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	434	J,DX	ug/L		87	85 - 115

Lab Sample ID: LCSD 570-307724/3-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	431	J,DX	ug/L		86	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-307628/1-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		02/28/23 10:21	02/28/23 13:23	1
Silver	ND		1.0	0.23	ug/L		02/28/23 10:21	02/28/23 13:23	1
Arsenic	ND		1.0	0.16	ug/L		02/28/23 10:21	02/28/23 13:23	1
Barium	ND		1.0	0.17	ug/L		02/28/23 10:21	02/28/23 13:23	1
Beryllium	ND		0.50	0.26	ug/L		02/28/23 10:21	02/28/23 13:23	1
Cadmium	ND		1.0	0.13	ug/L		02/28/23 10:21	02/28/23 13:23	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-307628/1-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.267	J,DX	2.0	0.14	ug/L		02/28/23 10:21	02/28/23 13:23	1
Copper	ND		2.0	0.32	ug/L		02/28/23 10:21	02/28/23 13:23	1
Iron	5.33	J,DX	20	3.7	ug/L		02/28/23 10:21	02/28/23 13:23	1
Manganese	ND		1.0	0.41	ug/L		02/28/23 10:21	02/28/23 13:23	1
Nickel	ND		2.0	0.17	ug/L		02/28/23 10:21	02/28/23 13:23	1
Lead	ND		1.0	0.12	ug/L		02/28/23 10:21	02/28/23 13:23	1
Antimony	ND		2.0	0.36	ug/L		02/28/23 10:21	02/28/23 13:23	1
Zinc	ND		20	2.8	ug/L		02/28/23 10:21	02/28/23 13:23	1
Selenium	ND		2.0	0.52	ug/L		02/28/23 10:21	02/28/23 13:23	1
Cobalt	ND		1.0	0.14	ug/L		02/28/23 10:21	02/28/23 13:23	1
Thallium	ND		1.0	0.11	ug/L		02/28/23 10:21	02/28/23 13:23	1

Lab Sample ID: LCS 570-307628/2-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	77.7		ug/L		97	85 - 115
Silver	80.0	75.4		ug/L		94	85 - 115
Arsenic	80.0	76.7		ug/L		96	85 - 115
Barium	80.0	76.7		ug/L		96	85 - 115
Beryllium	80.0	76.3		ug/L		95	85 - 115
Cadmium	80.0	76.1		ug/L		95	85 - 115
Chromium	80.0	75.5		ug/L		94	85 - 115
Copper	80.0	74.3		ug/L		93	85 - 115
Iron	800	770		ug/L		96	85 - 115
Manganese	80.0	77.4		ug/L		97	85 - 115
Nickel	80.0	75.1		ug/L		94	85 - 115
Lead	80.0	76.9		ug/L		96	85 - 115
Antimony	80.0	77.4		ug/L		97	85 - 115
Zinc	80.0	75.3		ug/L		94	85 - 115
Selenium	80.0	79.2		ug/L		99	85 - 115
Cobalt	80.0	74.2		ug/L		93	85 - 115
Thallium	80.0	75.7		ug/L		95	85 - 115

Lab Sample ID: LCSD 570-307628/3-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	80.2		ug/L		100	85 - 115	3	20
Silver	80.0	77.2		ug/L		96	85 - 115	2	20
Arsenic	80.0	77.7		ug/L		97	85 - 115	1	20
Barium	80.0	78.0		ug/L		98	85 - 115	2	20
Beryllium	80.0	74.5		ug/L		93	85 - 115	2	20
Cadmium	80.0	78.0		ug/L		97	85 - 115	2	20
Chromium	80.0	77.9		ug/L		97	85 - 115	3	20
Copper	80.0	76.4		ug/L		96	85 - 115	3	20
Iron	800	798		ug/L		100	85 - 115	4	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-307628/3-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese			80.0	80.1		ug/L		100	85 - 115	3	20
Nickel			80.0	77.6		ug/L		97	85 - 115	3	20
Lead			80.0	78.1		ug/L		98	85 - 115	2	20
Antimony			80.0	81.2		ug/L		102	85 - 115	5	20
Zinc			80.0	77.4		ug/L		97	85 - 115	3	20
Selenium			80.0	81.9		ug/L		102	85 - 115	3	20
Cobalt			80.0	76.9		ug/L		96	85 - 115	4	20
Thallium			80.0	78.3		ug/L		98	85 - 115	3	20

Lab Sample ID: MB 570-308039/1-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			03/01/23 14:16	1
Silver	ND		1.0	0.23	ug/L			03/01/23 14:16	1
Arsenic	ND		1.0	0.16	ug/L			03/01/23 14:16	1
Barium	ND		1.0	0.17	ug/L			03/01/23 14:16	1
Beryllium	ND		0.50	0.26	ug/L			03/01/23 14:16	1
Cadmium	ND		1.0	0.13	ug/L			03/01/23 14:16	1
Chromium	0.163	J,DX	2.0	0.14	ug/L			03/01/23 14:16	1
Copper	ND		2.0	0.32	ug/L			03/01/23 14:16	1
Iron	ND		20	3.7	ug/L			03/01/23 14:16	1
Manganese	ND		1.0	0.41	ug/L			03/01/23 14:16	1
Nickel	ND		2.0	0.17	ug/L			03/01/23 14:16	1
Lead	ND		1.0	0.12	ug/L			03/01/23 14:16	1
Antimony	ND		2.0	0.36	ug/L			03/01/23 14:16	1
Zinc	ND		20	2.8	ug/L			03/01/23 14:16	1
Selenium	ND		2.0	0.52	ug/L			03/01/23 14:16	1
Cobalt	ND		1.0	0.14	ug/L			03/01/23 14:16	1
Thallium	ND		1.0	0.11	ug/L			03/01/23 14:16	1

Lab Sample ID: LCS 570-308039/2-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum			80.0	79.4		ug/L		99	85 - 115
Silver			80.0	79.7		ug/L		100	85 - 115
Arsenic			80.0	79.7		ug/L		100	85 - 115
Barium			80.0	79.3		ug/L		99	85 - 115
Beryllium			80.0	79.5		ug/L		99	85 - 115
Cadmium			80.0	80.0		ug/L		100	85 - 115
Chromium			80.0	80.1		ug/L		100	85 - 115
Copper			80.0	77.6		ug/L		97	85 - 115
Iron			800	814		ug/L		102	85 - 115
Manganese			80.0	81.3		ug/L		102	85 - 115
Nickel			80.0	78.1		ug/L		98	85 - 115
Lead			80.0	80.3		ug/L		100	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-308039/2-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	80.0	79.8		ug/L		100	85 - 115
Zinc	80.0	78.5		ug/L		98	85 - 115
Selenium	80.0	82.2		ug/L		103	85 - 115
Cobalt	80.0	78.7		ug/L		98	85 - 115
Thallium	80.0	80.5		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-308039/3-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	81.3		ug/L		102	85 - 115	2	20
Silver	80.0	79.8		ug/L		100	85 - 115	0	20
Arsenic	80.0	80.6		ug/L		101	85 - 115	1	20
Barium	80.0	79.2		ug/L		99	85 - 115	0	20
Beryllium	80.0	83.7		ug/L		105	85 - 115	5	20
Cadmium	80.0	80.5		ug/L		101	85 - 115	1	20
Chromium	80.0	80.0		ug/L		100	85 - 115	0	20
Copper	80.0	78.2		ug/L		98	85 - 115	1	20
Iron	800	814		ug/L		102	85 - 115	0	20
Manganese	80.0	81.5		ug/L		102	85 - 115	0	20
Nickel	80.0	78.2		ug/L		98	85 - 115	0	20
Lead	80.0	80.5		ug/L		101	85 - 115	0	20
Antimony	80.0	82.8		ug/L		103	85 - 115	4	20
Zinc	80.0	81.1		ug/L		101	85 - 115	3	20
Selenium	80.0	83.1		ug/L		104	85 - 115	1	20
Cobalt	80.0	78.8		ug/L		99	85 - 115	0	20
Thallium	80.0	80.5		ug/L		101	85 - 115	0	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-308085/1-A
Matrix: Water
Analysis Batch: 308437

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/01/23 14:04	03/02/23 12:27	1

Lab Sample ID: LCS 570-308085/2-A
Matrix: Water
Analysis Batch: 308437

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308085

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	36.6		mg/L		92	78 - 114

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCSD 570-308085/3-A
Matrix: Water
Analysis Batch: 308437

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308085

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	37.1		mg/L		93	78 - 114	1	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-309909/5-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:21	1

Lab Sample ID: LCS 570-309909/6-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309909

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.483		mg/L		97	90 - 110		

Lab Sample ID: LCSD 570-309909/7-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309909

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.488		mg/L		98	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309199/12
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/03/23 20:26	1

Lab Sample ID: LCS 570-309199/13
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			250	229		ug/L		92	90 - 110		

Lab Sample ID: LCSD 570-309199/15
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	231		ug/L		92	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: MRL 570-309199/11
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	5.41		ug/L		108	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-307521/1
Matrix: Water
Analysis Batch: 307521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		100.8	99.0 - 101.0

Lab Sample ID: LCSSRM 570-307521/2
Matrix: Water
Analysis Batch: 307521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-307521/3
Matrix: Water
Analysis Batch: 307521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-311349/9
Matrix: Water
Analysis Batch: 311349

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/13/23 20:08	1

Lab Sample ID: 570-129045-1 DU
Matrix: Water
Analysis Batch: 311349

Client Sample ID: EPBLLC_20230226
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Specific Conductance	580		583		umhos/cm		0.2	25

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-308515/1
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/02/23 16:27	1

Lab Sample ID: LCS 570-308515/2
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	978		mg/L		98	84 - 108

Lab Sample ID: LCSD 570-308515/3
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	84 - 108	4	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-308912/1
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/03/23 18:43	1

Lab Sample ID: LCS 570-308912/2
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.0		mg/L		96	77 - 116

Lab Sample ID: LCSD 570-308912/3
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	96.0		mg/L		96	77 - 116	0	10

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-310352/3
Matrix: Water
Analysis Batch: 310352

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			03/08/23 08:36	1

Method: SM 5310D - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 570-310352/4
Matrix: Water
Analysis Batch: 310352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon, Total Organic	5.03	5.02		mg/L		100	85 - 115

Lab Sample ID: LCSD 570-310352/5
Matrix: Water
Analysis Batch: 310352

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic	5.03	4.92		mg/L		98	85 - 115	2	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-307522/5-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307522

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		02/27/23 20:28	02/27/23 21:49	1

Lab Sample ID: LCS 570-307522/6-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307522

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	0.500	0.546		mg/L		109	83 - 122

Lab Sample ID: LCSD 570-307522/7-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307522

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.500	0.538		mg/L		108	83 - 122	1	10

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-309219/2
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			02/27/23 11:01	1

Lab Sample ID: LCS 570-309219/4
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	201		mg/L		101	84.6 - 115.4

GC/MS VOA

Analysis Batch: 307594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	8260B SIM	
MB 570-307594/7	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-307594/4	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-307594/5	Lab Control Sample Dup	Total/NA	Water	8260B SIM	

Analysis Batch: 307642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	624.1	
570-129045-2	TB_20230226-1	Total/NA	Water	624.1	
MB 570-307642/6	Method Blank	Total/NA	Water	624.1	
LCS 570-307642/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-307642/4	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 307149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	625	
MB 570-307149/1-A	Method Blank	Total/NA	Water	625	
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 307279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-307149/1-A	Method Blank	Total/NA	Water	625.1 SIM	307149
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	307149
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	307149

Analysis Batch: 307608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	625.1 SIM	307149

GC VOA

Analysis Batch: 309605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	8015B	
MB 570-309605/5	Method Blank	Total/NA	Water	8015B	
LCS 570-309605/3	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-309605/4	Lab Control Sample Dup	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 308878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	3510C	
MB 570-308878/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-308878/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-308878/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA

Analysis Batch: 309032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308878/1-A	Method Blank	Total/NA	Water	8015B	308878
LCS 570-308878/2-A	Lab Control Sample	Total/NA	Water	8015B	308878
LCSD 570-308878/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	308878

Analysis Batch: 311027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	8015B	308878

HPLC/IC

Analysis Batch: 307134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	300.0	
MB 570-307134/6	Method Blank	Total/NA	Water	300.0	
LCS 570-307134/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307134/8	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 307135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	300.0	
MB 570-307135/6	Method Blank	Total/NA	Water	300.0	
LCS 570-307135/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307135/8	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 307526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	218.6	307529
570-129045-1	EPBLLC_20230226	Total/NA	Water	218.6	
MB 570-307526/4	Method Blank	Total/NA	Water	218.6	
MB 570-307529/1-A	Method Blank	Dissolved	Water	218.6	307529
LCS 570-307526/5	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-307529/2-A	Lab Control Sample	Dissolved	Water	218.6	307529
LCSD 570-307526/6	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-307529/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	307529
570-129045-1 MS	EPBLLC_20230226	Dissolved	Water	218.6	307529
570-129045-1 MS	EPBLLC_20230226	Total/NA	Water	218.6	
570-129045-1 MSD	EPBLLC_20230226	Dissolved	Water	218.6	307529
570-129045-1 MSD	EPBLLC_20230226	Total/NA	Water	218.6	

Filtration Batch: 307529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	Filtration	
MB 570-307529/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-307529/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-307529/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-129045-1 MS	EPBLLC_20230226	Dissolved	Water	Filtration	
570-129045-1 MSD	EPBLLC_20230226	Dissolved	Water	Filtration	

Analysis Batch: 307808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	314.0	

HPLC/IC (Continued)

Analysis Batch: 307808 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-307808/7	Method Blank	Total/NA	Water	314.0	
LCS 570-307808/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-307808/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 308826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	NO2NO3 Calc	

Metals

Prep Batch: 307563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total Recoverable	Water	200.7	
MB 570-307563/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-307563/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-307563/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	

Prep Batch: 307628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total Recoverable	Water	200.8	
MB 570-307628/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-307628/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-307628/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Filtration Batch: 307724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	Filtration	
MB 570-307724/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-307724/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-307724/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 307737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-307628/1-A	Method Blank	Total Recoverable	Water	200.8	307628
LCS 570-307628/2-A	Lab Control Sample	Total Recoverable	Water	200.8	307628
LCSD 570-307628/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	307628

Analysis Batch: 307880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total Recoverable	Water	200.7 Rev 4.4	307563
MB 570-307563/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	307563
LCS 570-307563/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	307563
LCSD 570-307563/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	307563

Analysis Batch: 307917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	200.7 Rev 4.4	307724
MB 570-307724/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	307724
LCS 570-307724/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	307724
LCSD 570-307724/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	307724

Metals

Analysis Batch: 307918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total Recoverable	Water	200.8	307628
570-129045-1	EPBLLC_20230226	Total Recoverable	Water	200.8	307628

Filtration Batch: 308039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	Filtration	
MB 570-308039/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 308100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	200.8	308039
MB 570-308039/1-A	Method Blank	Dissolved	Water	200.8	308039
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	200.8	308039
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	308039

General Chemistry

Analysis Batch: 307520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	SM 5540C	307522
MB 570-307522/5-A	Method Blank	Total/NA	Water	SM 5540C	307522
LCS 570-307522/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	307522
LCSD 570-307522/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	307522

Analysis Batch: 307521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	SM 2130B	
LCSSRM 570-307521/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-307521/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-307521/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Prep Batch: 307522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	SM 5540C	
MB 570-307522/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-307522/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-307522/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Analysis Batch: 307843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	SM 2540F	

Prep Batch: 308085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	1664A	
MB 570-308085/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-308085/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-308085/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

General Chemistry

Analysis Batch: 308437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	1664A	308085
MB 570-308085/1-A	Method Blank	Total/NA	Water	1664A	308085
LCS 570-308085/2-A	Lab Control Sample	Total/NA	Water	1664A	308085
LCSD 570-308085/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	308085

Analysis Batch: 308515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	SM 2540C	
MB 570-308515/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-308515/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-308515/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 308912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	SM 2540D	
MB 570-308912/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-308912/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-308912/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 309199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	Kelada 01	
MB 570-309199/12	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309199/13	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309199/15	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-309199/11	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 309200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	218.6 CR3	
570-129045-1	EPBLLC_20230226	Total/NA	Water	218.6 CR3	

Analysis Batch: 309219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	SM5210B	
USB 570-309219/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-309219/4	Lab Control Sample	Total/NA	Water	SM5210B	

Prep Batch: 309909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	Distill/Ammonia	
MB 570-309909/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 309958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	350.1	309909
MB 570-309909/5-A	Method Blank	Total/NA	Water	350.1	309909
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	350.1	309909
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	309909

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

General Chemistry

Analysis Batch: 310352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	SM 5310D	
MB 570-310352/3	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-310352/4	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-310352/5	Lab Control Sample Dup	Total/NA	Water	SM 5310D	

Analysis Batch: 311349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	SM 2510B	
MB 570-311349/9	Method Blank	Total/NA	Water	SM 2510B	
570-129045-1 DU	EPBLLC_20230226	Total/NA	Water	SM 2510B	

Geotechnical

Analysis Batch: 311510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	D4464	
LCS 570-311510/6	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-311510/8	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Client Sample ID: EPBLLC_20230226

Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	307642	02/28/23 17:54	KHF2	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		2	25 mL	25 mL	307594	02/28/23 18:33	G6NI	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			1048.2 mL	2 mL	307149	02/28/23 05:19	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	307608	02/28/23 17:15	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	309605	03/07/23 21:32	P1R	EET CAL 4
	Instrument ID: GC1									
Total/NA	Prep	3510C			256.5 mL	2.5 mL	308878	03/03/23 17:08	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	311027	03/13/23 16:39	N5Y3	EET CAL 4
	Instrument ID: GC69A									
Dissolved	Filtration	Filtration			100 mL	100 mL	307529	02/28/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	307526	02/28/23 05:54	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	307526	02/28/23 02:55	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		5	4 mL	4 mL	307134	02/28/23 01:01	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		5	4 mL	4 mL	307135	02/28/23 01:01	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	307808	02/28/23 23:17	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			308826	03/03/23 14:06	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Dissolved	Filtration	Filtration			50 mL	50 mL	307724	02/28/23 13:46	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			307917	02/28/23 23:46	K1UV	EET CAL 4
	Instrument ID: ICP10									
Total Recoverable	Prep	200.7			50 mL	50 mL	307563	02/28/23 08:01	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			307880	02/28/23 20:19	P1R	EET CAL 4
	Instrument ID: ICP10									
Dissolved	Filtration	Filtration			50 mL	50 mL	308039	03/01/23 12:58	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			308100	03/01/23 14:38	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	307628	02/28/23 10:21	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			307918	02/28/23 14:31	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	307628	02/28/23 10:21	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		10			307918	02/28/23 15:36	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	1664A			1002 mL	1000 mL	308085	03/01/23 14:04	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			308437	03/02/23 12:27	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Dissolved	Analysis	218.6 CR3		1			309200	03/06/23 11:03	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Client Sample ID: EPBLLC_20230226

Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	218.6 CR3		1			309200	03/06/23 11:03	WH6J	EET CAL 4
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	309909	03/08/23 09:40	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	309958	03/08/23 11:54	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309199	03/03/23 20:26	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			307521	02/27/23 23:06	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			311349	03/13/23 23:54	UAPD	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	308515	03/02/23 16:27	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	30 mL	1000 mL	308912	03/03/23 18:43	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	307843	02/27/23 20:30	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 5310D		8	40 mL	40 mL	310352	03/08/23 22:08	UAPD	EET CAL 4
	Instrument ID: TOC12									
Total/NA	Prep	SM 5540C			100 mL	100 mL	307522	02/27/23 20:28	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	307520	02/27/23 21:58	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	SM5210B		1			309219	02/27/23 21:40	U7UR	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	D4464		1			311510	03/14/23 14:48	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB_20230226-1

Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	307642	02/28/23 16:03	KHF2	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124065-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-1u-23
California	Los Angeles Co9nty Sanitation Districts	10104	07-31-23
California	SCAQMD LAP	17LA0414	11-30-23
California	State	3082	07-31-26
Nevada	State	CA00111	08-01-23
Oregon	NELAP	6175	02-02-26
USDA	US Federal Programs	P330-22-00054	05-26-23
Washington	State	C41u-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

1664A = EPA-821-98-002
ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129045-1	EPBLLC_20230226	Water	02/26/23 10:30	02/27/23 18:00
570-129045-2	TB_20230226-1	Water	02/26/23 10:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

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129045

570-129045 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Trifluralin (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1 2-DCE (E624) Week abs in Hermosa Heights, CA	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221) Enthalpy Analytical in Orange CA	
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
PBLLC_20230226	2/26/23	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
_20230226-1	2/26/23	1030	TB	WM	3	N	N														x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

EDBPJOVX

Time of Readings 1030

DO (mg/L) 8.37

pH 6.51

Temp (°C/°F) 50.9

TRC (mg/L) 0.00

Checked by:

Date/Time: 2-26-2023/1205

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company:	Date/Time: 2/27/23 1720	Received by: EC
Relinquished by: EC	Company:	Date/Time: 2/27/23 1800	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: 2/27/23 1800

Date/Time: 2/27/23 1720
Date/Time:
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2/1.8/1.7 SC12

129045

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE(E624) Weck Labs in Hacienda Heights CA	TPH gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Vers Labs in Harbor Blvd Irvine CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Santa CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs In Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs Hacienda Heights CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBLLC_20230226	2/26/23	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1030	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H/A	Date/Time: 2-27-2023/1120	Receiv	EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Receiv		Date/Time:
Relinquished by:	Company:	Date/Time:	Receiv	2/27/23 1800	Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

3/16/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 2/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		02/28/23 9:34	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

3/16/2023

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129045-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 2/28/23 1402	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208500.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)	Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X			7	See Attached Instructions
TB_20230226-2 (570-129045-3)	2/26/23	10:30 Pacific		Water			X						2	See Attached Instructions
							(4)	(2)	(2)	(1)				# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3/1/23 15:40	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - IR Gun

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129045-1

Login Number: 129045
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/20/2023 3:48:17 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129045-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

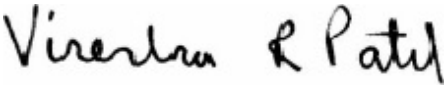
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-2

Job ID: 570-129045-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129045-2

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.2º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-2

Client Sample ID: EPBLLC_20230226

Lab Sample ID: 570-129045-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.041		0.0025	0.00040	ug/L	5		1631E	Total/NA
Mercury	0.0031		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.041		0.0025	0.00040	ug/L			03/02/23 14:28	5

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0031		0.00050	0.000079	ug/L			03/02/23 15:14	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-419455/13
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:07	1

Lab Sample ID: MB 580-419455/14
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:11	1

Lab Sample ID: MB 580-419455/15
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:15	1

Lab Sample ID: LCS 580-419455/16
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00484		ug/L		97	77 - 123		

Lab Sample ID: LCSD 580-419455/17
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00474		ug/L		95	77 - 123	2	24

Lab Sample ID: 570-129045-1 MS
Matrix: Water
Analysis Batch: 419455

Client Sample ID: EPBLLC_20230226
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.041		0.0750	0.103		ug/L		84	71 - 125		

Lab Sample ID: 570-129045-1 MSD
Matrix: Water
Analysis Batch: 419455

Client Sample ID: EPBLLC_20230226
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.041		0.0750	0.105		ug/L		85	71 - 125	1	24

Lab Sample ID: MB 580-419236/1-A
Matrix: Water
Analysis Batch: 419455

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 16:08	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-2

Metals

Filtration Batch: 419236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	Filtration	
MB 580-419236/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 419455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	1631E	419236
570-129045-1	EPBLLC_20230226	Total/NA	Water	1631E	
MB 580-419236/1-A	Method Blank	Dissolved	Water	1631E	419236
MB 580-419455/13	Method Blank	Total/NA	Water	1631E	
MB 580-419455/14	Method Blank	Total/NA	Water	1631E	
MB 580-419455/15	Method Blank	Total/NA	Water	1631E	
LCS 580-419455/16	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-419455/17	Lab Control Sample Dup	Total/NA	Water	1631E	
570-129045-1 MS	EPBLLC_20230226	Total/NA	Water	1631E	
570-129045-1 MSD	EPBLLC_20230226	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-2

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	419236	03/01/23 13:20	DRM	EET SEA
Dissolved	Analysis	1631E		1			419455	03/02/23 15:14	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		5			419455	03/02/23 14:28	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129045-2
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129045-1	EPBLLC_20230226	Water	02/26/23 10:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129045

570-129045 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Trifluralin (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1 2-DCE (E624) Week abs in Hermosa Heights, CA	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221) Enthalpy Analytical in Orange CA	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
SPBLLC_20230226	2/26/23	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
FB_20230226-1	2/26/23	1030	TB	WM	3	N	N														x				
																									EDBPJOVX
																									Time of Readings 1030
																									DO (mg/L) 8.37
																									pH 6.51
																									Temp (°C/°F) 50.9
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1205
								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____	
Relinquished by:	Company:	Date/Time: 2/27/23 1720	Received by: EC
Relinquished by: EC	Company:	Date/Time: 2/27/23 1800	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: 2/27/23 1800

Date/Time: 2/27/23 1720
Date/Time:
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2/1.8/1.7 SC12

SAP COC 2019/2020 VERSION 3

129045

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS/MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE(E624) Weck Labs in Hacienda Heights CA	TPH gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Vers Labs in Harbor Blvd Huntington Beach CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Santa CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs Hacienda Heights CA	Asbestos (E100.2)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBLLC_20230226	2/26/23	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1030	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023/1120	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received:	2/27/23	Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

3/20/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/28/23 1018	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		02/28/23 9:34	EC			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129045-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 2/28/23 1402	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208500.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)	Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X			7	See Attached Instructions
TB_20230226-2 (570-129045-3)	2/26/23	10:30 Pacific		Water			X						2	See Attached Instructions
							(4)	(2)	(2)	(1)				# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3/1/23 15:40	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - IR Gun

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208636.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129045-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	02/26/23 1129	FE		3/1/23 9:45	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: NA | Cooler Temperature(s) °C and Other Remarks: 4.0 D.J 4 13

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129045-2

Login Number: 129045
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129045-2

Login Number: 129045
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/01/23 01:18 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/11/2023 1:01:32 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129045-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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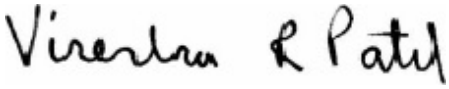
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/11/2023 1:01:32 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Case Narrative 5
Method Summary 6
Sample Summary 7
Subcontract Data 8
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Receipt Checklists 25

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-123095-4

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Haley & Aldrich, Inc.
j ro/ectSite: goeinF BBLRIBMA and gNj

Job ID: 570-129035-P

Job ID: 570-129045-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129045-3

Comments
mo additional cos s entT.

Receipt
phe Tas wleT v ere recei6ed on 2S27S202P U:00 j N. q nleTT otherv iTe noted belov , the Tas wleT arri6ed in Food condition, and v here reuf ired, wrowerly wreTer6ed and on ice. phe tes weratf reT o° the 2 coolerT at receiwt tis e v ere 1.7GC and 2.2GC.

Lab Admin
mo analytical or uf ality iTTf eT v ere noted, other than thoTe deTcribed in the De°initionTSQloTTary waFe.

Subcontract Work
Nethod Ef ant-pray - 4. Coli - le6el 3 reuf ired: phiT s ethod v aT Tf bcontracted to 4nthalwy Analytical - garkley. phe Tf bcontract laboratory certi°ication iT di°erent °ros that o° the °acility iTTf inF the °inal rewort.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-3

Method	Method Description	Protocol	Laboratory
Subcontract	Quant-Tray - E. Coli - level 4 required	None	Enthalpy

Protocol References:

None = None

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
/ roSectBite: FoeinL ggRMIgEA and FW/

Job ID: 570-1290P5-j

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-1290P5-1	_/ FMMC3202j 0224	6 ater	02B24B2j 10:j 0	02B27B2j 18:00

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 480482
Report Level: IV
Report Date: 03/08/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780		Lab Job #: Date Received:	480482 02/27/23

Sample ID	Lab ID	Collected	Matrix
EPBLLC_20230226 (570-129045-1)	480482-001	02/26/23 10:30	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Virendra Patel

Lab Job Number: 480482
Date Received: 02/27/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 02/27/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

480482

3.4/14

Chain of Custody Record

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208494.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-129045-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 3/10/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		2/27/23 1721	EC		2-27-23 1721	EA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins

Project: Boeing SSFL ISRA and BMP

Date Received: 2/27/23

Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: _____ #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: _____ #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✓
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?	✓		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 2-27-23

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 480482 **Project#:** STANDARD

Client: Eurofins Calscience Tustin **Location:**

Field ID:	EPBLLC_20230226 (570-129045-1)	**Batch#:**	308595	**Analyzed:**	02/28/23 14:42
Lab ID:	480482-001	**Sampled:**	02/26/23 10:30	**Prep:**	
Matrix:	Water	**Received:**	02/27/23	**Analysis:**	SM 9223Bb
DiIn Fac:	1.000	**Prepared:**	02/27/23 18:19	**Analyst:**	VLC

480482-001 Analyte	Result	RL	Units	Qual
Coliform, E. Coli	**42**	1.0	MPN/100ml	H

Legend

H: Holding time was exceeded

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: JA Prep Date/Time: 2/27/23 1819 QC Batch ID: 309595 Batch Page 1 of 1

Read Analyst: VC Read Date/Time 2/28/23 1442

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: FV330 Pipette Lot #: A104222

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 2/1/23 Bottle Lot #: DV0060 Comparator Lot #: A0148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 1040 35.1 Incubator Out, Temp/Time: 35.2°C 1441

Fecal Coliform: Water Bath ID: NA Water Bath In, Temp/Time: NA Water Bath Out, Temp/Time: NA

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		480480-001	1X	48	48	1611.2	1000	30	7	55.4	55					EC-01
		↓ ↓	10X	49	29	579.4	5800	7	0	7.5	75					↓ 10X
		↓ ↓	100X	33	3	56.5	5600	1	0	1.0	100					↓ 100X
		480481-001	1X	49	48	>2419.6	72400	48	16	228.2	230					EP-01
		↓ ↓	10X	49	42	1299.7	13,000	13	0	14.0	150					↓ 10X
		↓ ↓	100X	45	11	89.6	14,000	1	0	1.0	100					↓ 100X
		480482-001	1X	49	48	>2419.6	>24200	27	3	42.0	42					EV-01
		↓ ↓	10X	49	32	686.7	6900	7	0	7.5	75					↓ 10X
		↓ ↓	100X	32	5	57.3	5700	0	0	<1	<100					↓ 100X
		480483-001	1X	49	48	>2419.6	>24200	27	7	48.1	48					CA-01
		↓ ↓	10X	49	34	770.1	7700	4	0	4.1	41					↓ 10X
		↓ ↓	100X	39	10	93.4	9,300	1	8	1.0	100					↓ 100X
								JA	3/5/23							ok to run past hold
Quality Control	**Culture ID**															per PM 3/2/23
Positive +/+ (E. Coli)	2/26/23			49	48	>2419.6	>2400	49	48	>2419.6	>2400					
Positive +/- (K. Pneumonia)	↓			49 JA 3/5/23	48 JA 3/5/23	>2419.6	>2400	0	0	<1	<1					
Negative -/- (P. Aeruginosa)				0	0	<1	<1	0	0	<1	<1					

Data Entered By: 3/5/23 Data Reviewed By:

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129045

570-129045 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #:	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Trifluralin (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 113, Freon 123A, Cyclohexane, cis-1 2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
1 PBLLC_20230226	2/26/23	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2 FB_20230226-1	2/26/23	1030	TB	WM	3	N	N														x				
																									EDBPJOVX
																									Time of Readings 1030
																									DO (mg/L) 8.37
																									pH 6.51
																									Temp (°C/°F) 50.9
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1205
								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company:	Date/Time: 2/27/23 1720	Received by: EC
Relinquished by: EC	Company:	Date/Time: 2/27/23 1800	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: 2/27/23 1800

Date/Time: 2/27/23 1720
Date/Time:
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2/1.8/1.7 SC12

SAP COC 2019/2020 VERSION 3

4/11/2023

129045

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS/MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE(E624) Weck Labs in Industry, CA	TPH gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Vers Labs in Harbor Blvd, Garden Grove, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs, Inc. Mira Loma, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs In Industry, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs Huntington Beach, CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBLLC_20230226	2/26/23	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
TB_20230226-2	2/26/23	1030	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H/A	Date/Time: 2-27-2023/1120	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received:	2/27/23	1800 Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/11/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 2/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		02/28/23 9:34	EC			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/11/2023

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129045-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Wewater, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		2/28/23 1402				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/11/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208500.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)	Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X			7	See Attached Instructions
TB_20230226-2 (570-129045-3)	2/26/23	10:30 Pacific		Water			X						2	See Attached Instructions
							(4)	(2)	(2)	(1)				# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3/1/23 15:40	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - IR Gun

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129045-3

Login Number: 129045
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129045-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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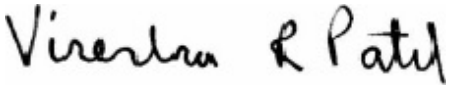
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-4

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129045-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129045-4

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.2º C.

Dioxin
Method 1613B: The automated ending resolution check scheduled to be performed on March 20, 2023 at approximately 22:23 did not print. A manual resolution check was performed, without retuning, at the end of the second sequence on March 21, 2023 at 10:21, which indicated that the instrument maintained 10,000 resolution. The approximately 12 hour delay in printing the ending resolution check has no impact on the data.

EPBLLC_20230226 (570-129045-1), (CCV 320-662109/2), (LCS 320-659338/2-A), (LCSD 320-659338/3-A), (MB 320-659338/1-A) and (WDM 320-662109/1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-4

Client Sample ID: EPBLLC_20230226

Lab Sample ID: 570-129045-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000019	J,DX q MB	0.000050	0.00000049	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000068	J,DX q MB	0.000050	0.00000050	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000033	J,DX MB	0.000050	0.00000042	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000014	J,DX q MB	0.000050	0.00000047	ug/L	1		1613B	Total/NA
OCDD	0.000021	J,DX q MB	0.00010	0.00000044	ug/L	1		1613B	Total/NA
OCDF	0.0000011	J,DX q MB	0.00010	0.00000059	ug/L	1		1613B	Total/NA
Total TCDF	0.0000013	J,DX q	0.000010	0.00000049	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000026	J,DX q MB	0.000050	0.00000048	ug/L	1		1613B	Total/NA
Total HxCDF	0.00000079	J,DX MB	0.000050	0.00000034	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000074	J,DX q MB	0.000050	0.00000042	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000014	J,DX q MB	0.000050	0.00000046	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000013	ug/L		03/09/23 04:30	03/20/23 19:14	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000055	ug/L		03/09/23 04:30	03/20/23 19:14	1
1,2,3,7,8-PeCDF	ND		0.000050	0.0000012	ug/L		03/09/23 04:30	03/20/23 19:14	1
2,3,4,7,8-PeCDF	ND		0.000050	0.0000014	ug/L		03/09/23 04:30	03/20/23 19:14	1
1,2,3,4,7,8-HxCDD	**0.0000019**	**J,DX q MB**	0.000050	0.00000049	ug/L		03/09/23 04:30	03/20/23 19:14	1
1,2,3,6,7,8-HxCDD	**0.00000068**	**J,DX q MB**	0.000050	0.00000050	ug/L		03/09/23 04:30	03/20/23 19:14	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000044	ug/L		03/09/23 04:30	03/20/23 19:14	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000037	ug/L		03/09/23 04:30	03/20/23 19:14	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000034	ug/L		03/09/23 04:30	03/20/23 19:14	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.00000033	ug/L		03/09/23 04:30	03/20/23 19:14	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000031	ug/L		03/09/23 04:30	03/20/23 19:14	1
1,2,3,4,6,7,8-HpCDD	**0.0000033**	**J,DX MB**	0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 19:14	1
1,2,3,4,6,7,8-HpCDF	**0.0000014**	**J,DX q MB**	0.000050	0.00000047	ug/L		03/09/23 04:30	03/20/23 19:14	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000045	ug/L		03/09/23 04:30	03/20/23 19:14	1
OCDD	**0.000021**	**J,DX q MB**	0.00010	0.00000044	ug/L		03/09/23 04:30	03/20/23 19:14	1
OCDF	**0.0000011**	**J,DX q MB**	0.00010	0.00000059	ug/L		03/09/23 04:30	03/20/23 19:14	1
Total TCDD	ND		0.000010	0.0000013	ug/L		03/09/23 04:30	03/20/23 19:14	1
Total TCDF	**0.0000013**	**J,DX q**	0.000010	0.00000049	ug/L		03/09/23 04:30	03/20/23 19:14	1
Total PeCDD	ND		0.000050	0.00000087	ug/L		03/09/23 04:30	03/20/23 19:14	1
Total PeCDF	ND		0.000050	0.0000014	ug/L		03/09/23 04:30	03/20/23 19:14	1
Total HxCDD	**0.0000026**	**J,DX q MB**	0.000050	0.00000048	ug/L		03/09/23 04:30	03/20/23 19:14	1
Total HxCDF	**0.00000079**	**J,DX MB**	0.000050	0.00000034	ug/L		03/09/23 04:30	03/20/23 19:14	1
Total HpCDD	**0.0000074**	**J,DX q MB**	0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 19:14	1
Total HpCDF	**0.0000014**	**J,DX q MB**	0.000050	0.00000046	ug/L		03/09/23 04:30	03/20/23 19:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*25 - 164*	*03/09/23 04:30*	*03/20/23 19:14*	*1*
13C-2,3,7,8-TCDF	*65*		*24 - 169*	*03/09/23 04:30*	*03/20/23 19:14*	*1*
13C-1,2,3,7,8-PeCDD	*83*		*25 - 181*	*03/09/23 04:30*	*03/20/23 19:14*	*1*
13C-1,2,3,7,8-PeCDF	*75*		*24 - 185*	*03/09/23 04:30*	*03/20/23 19:14*	*1*
13C-2,3,4,7,8-PeCDF	*73*		*21 - 178*	*03/09/23 04:30*	*03/20/23 19:14*	*1*
13C-1,2,3,4,7,8-HxCDD	*68*		*32 - 141*	*03/09/23 04:30*	*03/20/23 19:14*	*1*
13C-1,2,3,6,7,8-HxCDD	*71*		*28 - 130*	*03/09/23 04:30*	*03/20/23 19:14*	*1*
13C-1,2,3,4,7,8-HxCDF	*59*		*26 - 152*	*03/09/23 04:30*	*03/20/23 19:14*	*1*
13C-1,2,3,6,7,8-HxCDF	*65*		*26 - 123*	*03/09/23 04:30*	*03/20/23 19:14*	*1*
13C-1,2,3,7,8,9-HxCDF	*74*		*29 - 147*	*03/09/23 04:30*	*03/20/23 19:14*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,6,7,8-HxCDF	71		28 - 136	03/09/23 04:30	03/20/23 19:14	1
13C-1,2,3,4,6,7,8-HpCDD	90		23 - 140	03/09/23 04:30	03/20/23 19:14	1
13C-1,2,3,4,6,7,8-HpCDF	71		28 - 143	03/09/23 04:30	03/20/23 19:14	1
13C-1,2,3,4,7,8,9-HpCDF	85		26 - 138	03/09/23 04:30	03/20/23 19:14	1
13C-OCDD	94		17 - 157	03/09/23 04:30	03/20/23 19:14	1
13C-OCDF	88		17 - 157	03/09/23 04:30	03/20/23 19:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	80		35 - 197	03/09/23 04:30	03/20/23 19:14	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.0000025	ug/L		03/09/23 04:30	03/21/23 18:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*55*		*24 - 169*	*03/09/23 04:30*	*03/21/23 18:02*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*91*		*35 - 197*	*03/09/23 04:30*	*03/21/23 18:02*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-129045-1	EPBLLC_20230226	80
570-129045-1 - RA	EPBLLC_20230226	91
MB 320-659338/1-A	Method Blank	84

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-659338/2-A	Lab Control Sample	85
LCSD 320-659338/3-A	Lab Control Sample Dup	86

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-129045-1	EPBLLC_20230226	69	65	83	75	73	68	71	59
570-129045-1 - RA	EPBLLC_20230226		55						
MB 320-659338/1-A	Method Blank	71	62	90	77	78	70	72	59

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-129045-1	EPBLLC_20230226	65	74	71	90	71	85	94	88
570-129045-1 - RA	EPBLLC_20230226								
MB 320-659338/1-A	Method Blank	65	71	69	88	71	81	89	80

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-659338/2-A	Lab Control Sample	65	58	83	71	70	63	62	51
LCSD 320-659338/3-A	Lab Control Sample Dup	77	70	96	82	84	72	68	57

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-659338/2-A	Lab Control Sample	56	65	61	78	63	72	78	71
LCSD 320-659338/3-A	Lab Control Sample Dup	64	75	71	91	71	84	93	84

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129045-4
Project/Site: Boeing SSFL ISRA and BMP

HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-659338/1-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 659338

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000097	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,7,8-TCDF	ND		0.000010	0.00000055	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000045	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000037	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8-HxCDD	0.00000174	J,DX	0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,6,7,8-HxCDD	0.000000455	J,DX q	0.000050	0.00000029	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000025	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8,9-HxCDF	0.000000967	J,DX	0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,6,7,8-HpCDD	0.00000104	J,DX q	0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,6,7,8-HpCDF	0.00000126	J,DX	0.000050	0.00000029	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000032	ug/L		03/09/23 04:30	03/20/23 13:41	1
OCDD	0.0000112	J,DX	0.00010	0.00000031	ug/L		03/09/23 04:30	03/20/23 13:41	1
OCDF	0.00000213	J,DX q	0.00010	0.00000039	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total TCDD	ND		0.000010	0.00000097	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total TCDF	ND		0.000010	0.00000055	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total PeCDD	ND		0.000050	0.00000045	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total PeCDF	ND		0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HxCDD	0.00000263	J,DX q	0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HxCDF	0.000000967	J,DX	0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HpCDD	0.00000272	J,DX q	0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HpCDF	0.00000126	J,DX	0.000050	0.00000031	ug/L		03/09/23 04:30	03/20/23 13:41	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*03/09/23 04:30*	*03/20/23 13:41*	*1*
13C-2,3,7,8-TCDF	*62*		*24 - 169*	*03/09/23 04:30*	*03/20/23 13:41*	*1*
13C-1,2,3,7,8-PeCDD	*90*		*25 - 181*	*03/09/23 04:30*	*03/20/23 13:41*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-659338/1-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	77		24 - 185	03/09/23 04:30	03/20/23 13:41	1
13C-2,3,4,7,8-PeCDF	78		21 - 178	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8-HxCDD	70		32 - 141	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,6,7,8-HxCDD	72		28 - 130	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8-HxCDF	59		26 - 152	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,6,7,8-HxCDF	65		26 - 123	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,7,8,9-HxCDF	71		29 - 147	03/09/23 04:30	03/20/23 13:41	1
13C-2,3,4,6,7,8-HxCDF	69		28 - 136	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,6,7,8-HpCDD	88		23 - 140	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,6,7,8-HpCDF	71		28 - 143	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	03/09/23 04:30	03/20/23 13:41	1
13C-OCDD	89		17 - 157	03/09/23 04:30	03/20/23 13:41	1
13C-OCDF	80		17 - 157	03/09/23 04:30	03/20/23 13:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	84		35 - 197	03/09/23 04:30	03/20/23 13:41	1

Lab Sample ID: LCS 320-659338/2-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 659338

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000186		ug/L		93	67 - 158		
2,3,7,8-TCDF			0.000200	0.000212		ug/L		106	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000901		ug/L		90	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000947		ug/L		95	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000953		ug/L		95	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000912		ug/L		91	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.000959		ug/L		96	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000963		ug/L		96	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000953		ug/L		95	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000956		ug/L		96	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000924		ug/L		92	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000948		ug/L		95	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000934		ug/L		93	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000984		ug/L		98	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000935		ug/L		94	78 - 138		
OCDD			0.00200	0.00191		ug/L		96	78 - 144		
OCDF			0.00200	0.00195		ug/L		97	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	65		20 - 175
13C-2,3,7,8-TCDF	58		22 - 152
13C-1,2,3,7,8-PeCDD	83		21 - 227
13C-1,2,3,7,8-PeCDF	71		21 - 192
13C-2,3,4,7,8-PeCDF	70		13 - 328
13C-1,2,3,4,7,8-HxCDD	63		21 - 193
13C-1,2,3,6,7,8-HxCDD	62		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-659338/2-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	51		19 - 202
13C-1,2,3,6,7,8-HxCDF	56		21 - 159
13C-1,2,3,7,8,9-HxCDF	65		17 - 205
13C-2,3,4,6,7,8-HxCDF	61		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	78		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	63		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	72		20 - 186
13C-OCDD	78		13 - 199
13C-OCDF	71		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-659338/3-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 659338

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000197		ug/L		98	67 - 158	6	50
2,3,7,8-TCDF			0.000200	0.000218		ug/L		109	75 - 158	3	50
1,2,3,7,8-PeCDD			0.00100	0.000927		ug/L		93	70 - 142	3	50
1,2,3,7,8-PeCDF			0.00100	0.000974		ug/L		97	80 - 134	3	50
2,3,4,7,8-PeCDF			0.00100	0.000961		ug/L		96	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000919		ug/L		92	70 - 164	1	50
1,2,3,6,7,8-HxCDD			0.00100	0.00100		ug/L		100	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.00101		ug/L		101	64 - 162	4	50
1,2,3,4,7,8-HxCDF			0.00100	0.000989		ug/L		99	72 - 134	4	50
1,2,3,6,7,8-HxCDF			0.00100	0.000954		ug/L		95	84 - 130	0	50
1,2,3,7,8,9-HxCDF			0.00100	0.000953		ug/L		95	78 - 130	3	50
2,3,4,6,7,8-HxCDF			0.00100	0.000958		ug/L		96	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000942		ug/L		94	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000988		ug/L		99	82 - 122	0	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000957		ug/L		96	78 - 138	2	50
OCDD			0.00200	0.00195		ug/L		97	78 - 144	2	50
OCDF			0.00200	0.00199		ug/L		99	63 - 170	2	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 175
13C-2,3,7,8-TCDF	70		22 - 152
13C-1,2,3,7,8-PeCDD	96		21 - 227
13C-1,2,3,7,8-PeCDF	82		21 - 192
13C-2,3,4,7,8-PeCDF	84		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 193
13C-1,2,3,6,7,8-HxCDD	68		25 - 163
13C-1,2,3,4,7,8-HxCDF	57		19 - 202
13C-1,2,3,6,7,8-HxCDF	64		21 - 159
13C-1,2,3,7,8,9-HxCDF	75		17 - 205
13C-2,3,4,6,7,8-HxCDF	71		22 - 176

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-659338/3-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	91		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	71		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	84		20 - 186
13C-OCDD	93		13 - 199
13C-OCDF	84		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	86		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-4

Specialty Organics

Prep Batch: 659338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1 - RA	EPBLLC_20230226	Total/NA	Water	1613B	
570-129045-1	EPBLLC_20230226	Total/NA	Water	1613B	
MB 320-659338/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-659338/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-659338/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 662109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	1613B	659338
MB 320-659338/1-A	Method Blank	Total/NA	Water	1613B	659338
LCS 320-659338/2-A	Lab Control Sample	Total/NA	Water	1613B	659338
LCSD 320-659338/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	659338

Analysis Batch: 662449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1 - RA	EPBLLC_20230226	Total/NA	Water	1613B	659338

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-4

Client Sample ID: EPBLLC_20230226
Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1004.7 mL	20.0 uL	659338	03/09/23 04:30	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	662449	03/21/23 18:02	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1004.7 mL	20.0 uL	659338	03/09/23 04:30	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	662109	03/20/23 19:14	DB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-4

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-23 *
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-4

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129045-1	EPBLLC_20230226	Water	02/26/23 10:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129045

570-129045 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Trifluralin (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1 2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
1 PBLLC_20230226	2/26/23	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2 S_20230226-1	2/26/23	1030	TB	WM	3	N	N														x				
																									EDBPJOVX
																									Time of Readings 1030
																									DO (mg/L) 8.37
																									pH 6.51
																									Temp (°C/°F) 50.9
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1205
								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company:	Date/Time: 2/27/23 1720	Received by: EC
Relinquished by: EC	Company:	Date/Time: 2/27/23 1800	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: 2/27/23 1800

Date/Time: 2/27/23 1720
Date/Time:
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3 | 2.2 | 1.8 | 1.7 SC12

3/22/2023

SAP COC 2019/2020 VERSION 3

129045

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE(E624) Weck Labs in Hacienda Heights CA	TPH gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Vers Labs in Harvard Heights CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Santa CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs In Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs Hacienda Heights CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBLLC_20230226	2/26/23	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1030	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023/1120	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received:	2/27/23	Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

3/22/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 2/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		02/28/23 9:34	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129045-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 2/28/23 1402	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208500.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)	Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X			7	See Attached Instructions
TB_20230226-2 (570-129045-3)	2/26/23	10:30 Pacific		Water			X						2	See Attached Instructions
							(4)	(2)	(2)	(1)				# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3/1/23 15:40	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - IR Gun

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129045-4
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		2/28/23 1402			3.1.23 900	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 3.3c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129045-4

Login Number: 129045
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129045-4

Login Number: 129045
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/01/23 01:40 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/27/2023 10:27:00 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129045-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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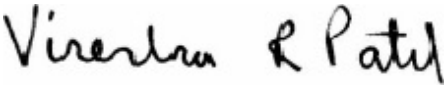
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/27/2023 10:27:00 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129045-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129045-5

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.2º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods EPA 608 - Pesticides/PCBs - PP list, VOCs- 2CVE only (E624), Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-5

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs- 2CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129045-1	EPBLLC_20230226	Water	02/26/23 10:30	02/27/23 18:00
570-129045-3	TB_20230226-2	Water	02/26/23 10:30	02/27/23 18:00

Work Orders:	3C06017	**Report Date:**	4/24/2023
		Received Date:	3/1/2023
Project:	570-129045-5	**Turnaround Time:**	Normal
		Phones:	(949) 261-1022
		Fax:	(949) 260-3297
Attn:	Virendra Patel	**P.O. #:**	
Client:	Eurofins Calscience - Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	**Billing Code:**	

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/01/23 with the Chain-of-Custody document. The samples were received in good condition, at 4.1 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: EPBLLC_20230226 (570-129045-1) — Sampled: 02/26/23 10:30 by Client

3C06017-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 525.2M			**Instr:** GCMS13				
Batch ID: W3C0830 **Preparation:** EPA 525.2/SPE			**Prepared:** 03/09/23 09:07				**Analyst:** EFC
Chlorpyrifos	ND	0.0040	0.010	ug/l	1	03/11/23	
Diazinon	ND	0.0034	0.010	ug/l	1	03/11/23	
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*107%*		*50-141*	*Conc: 0.533*		*03/11/23*	
Triphenyl phosphate	*107%*		*63-200*	*Conc: 0.537*		*03/11/23*	
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C0821 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/09/23 08:27				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.050	ug/l	1	03/28/23	O-05
Surrogate(s)							
Decachlorobiphenyl	*57%*		*33-133*	*Conc: 0.0553*		*03/28/23*	
Tetrachloro-meta-xylene	*80%*		*32-130*	*Conc: 0.0786*		*03/28/23*	
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C0490 **Preparation:** EPA 5030B			**Prepared:** 03/06/23 15:21				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l	1	03/07/23	O-09
Surrogate(s)							
1,2-Dichloroethane-d4	*106%*		*82-125*	*Conc: 53.2*		*03/07/23*	
4-Bromofluorobenzene	*97%*		*88-108*	*Conc: 48.4*		*03/07/23*	
Toluene-d8	*103%*		*92-112*	*Conc: 51.5*		*03/07/23*	
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32				**Analyst:** pjs

Sample Results

(Continued)

Sample: EPBLLC_20230226 (570-129045-1) Sampled: 02/26/23 10:30 by Client
3C06017-01 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32				**Analyst:** pjs
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l	1	04/05/23	Q-01

Sample: TB_20230226-2 (570-129045-3) Sampled: 02/25/23 10:30 by Client
3C06017-02 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C0490 **Preparation:** EPA 5030B			**Prepared:** 03/06/23 15:21				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l	1	03/07/23	O-09
Surrogate(s)							
1,2-Dichloroethane-d4	*107%*		*82-125*	*Conc: 53.5*		*03/07/23*	
4-Bromofluorobenzene	*95%*		*88-108*	*Conc: 47.3*		*03/07/23*	
Toluene-d8	*100%*		*92-112*	*Conc: 50.1*		*03/07/23*	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C0821-BLK1)					**Prepared: 03/09/23**	**Analyzed: 03/28/23**					
Endrin aldehyde	ND	0.0019	0.050	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.105*			*ug/l*	*0.100*		*105*	*33-133*			
Tetrachloro-meta-xylene	*0.0868*			*ug/l*	*0.100*		*87*	*32-130*			
LCS (W3C0821-BS1)					**Prepared: 03/09/23**	**Analyzed: 03/28/23**					
Endrin aldehyde	0.0829	0.0019	0.050	ug/l	0.100		83	18-130			
Surrogate(s)											
Decachlorobiphenyl	*0.107*			*ug/l*	*0.100*		*107*	*33-133*			
Tetrachloro-meta-xylene	*0.0835*			*ug/l*	*0.100*		*84*	*32-130*			
LCS Dup (W3C0821-BSD1)					**Prepared: 03/09/23**	**Analyzed: 03/28/23**					
Endrin aldehyde	0.0899	0.0019	0.050	ug/l	0.100		90	18-130	8	30	
Surrogate(s)											
Decachlorobiphenyl	*0.110*			*ug/l*	*0.100*		*110*	*33-133*			
Tetrachloro-meta-xylene	*0.0808*			*ug/l*	*0.100*		*81*	*32-130*			

Hydrazine by LCMS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2019-BLK1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l							
LCS (W3C2019-BS1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.81	0.62	2.0	ug/l	20.0		14	50-150			Q-01
Matrix Spike (W3C2019-MS1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.11	0.62	2.0	ug/l	20.0	*ND*	11	50-150			Q-01
Matrix Spike Dup (W3C2019-MSD1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.45	0.62	2.0	ug/l	20.0	*ND*	12	50-150	15	30	Q-01

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www.wecklabs.com

Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C0830-BLK1)					**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	ND	0.0040	0.010	ug/l							
Diazinon	ND	0.0034	0.010	ug/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.458*			*ug/l*	*0.500*		*92*	*50-141*			
Triphenyl phosphate	*0.489*			*ug/l*	*0.500*		*98*	*63-200*			
LCS (W3C0830-BS1)					**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	0.0492	0.0040	0.010	ug/l	0.0500		98	63-145			
Diazinon	0.0433	0.0034	0.010	ug/l	0.0500		87	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.451*			*ug/l*	*0.500*		*90*	*50-141*			
Triphenyl phosphate	*0.540*			*ug/l*	*0.500*		*108*	*63-200*			
Matrix Spike (W3C0830-MS1)	**Source: 3C06015-01**				**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	0.0458	0.0040	0.010	ug/l	0.0500	*ND*	92	37-168			
Diazinon	0.0434	0.0034	0.010	ug/l	0.0500	*ND*	87	36-153			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.463*			*ug/l*	*0.500*		*93*	*50-141*			
Triphenyl phosphate	*0.536*			*ug/l*	*0.500*		*107*	*63-200*			
Matrix Spike Dup (W3C0830-MSD1)	**Source: 3C06015-01**				**Prepared: 03/09/23**	**Analyzed: 03/11/23**					
Chlorpyrifos	0.0519	0.0040	0.010	ug/l	0.0500	*ND*	104	37-168	12	30	
Diazinon	0.0438	0.0034	0.010	ug/l	0.0500	*ND*	88	36-153	0.9	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.483*			*ug/l*	*0.500*		*97*	*50-141*			
Triphenyl phosphate	*0.551*			*ug/l*	*0.500*		*110*	*63-200*			

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C0490-BLK1)					**Prepared & Analyzed: 03/06/23**						
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l							
Surrogate(s)											
1,2-Dichloroethane-d4	*51.1*			*ug/l*	*50.0*		*102*	*82-125*			
4-Bromofluorobenzene	*50.5*			*ug/l*	*50.0*		*101*	*88-108*			
Toluene-d8	*50.4*			*ug/l*	*50.0*		*101*	*92-112*			
LCS (W3C0490-BS1)					**Prepared & Analyzed: 03/06/23**						
2-Chloroethyl vinyl ether	56.9	0.19	5.0	ug/l	50.0		114	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*50.0*			*ug/l*	*50.0*		*100*	*82-125*			
4-Bromofluorobenzene	*51.9*			*ug/l*	*50.0*		*104*	*88-108*			
Toluene-d8	*54.4*			*ug/l*	*50.0*		*109*	*92-112*			
LCS Dup (W3C0490-BSD1)					**Prepared: 03/06/23 Analyzed: 03/09/23**						
2-Chloroethyl vinyl ether	56.7	0.19	5.0	ug/l	50.0		113	0.1-305	0.4	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*48.0*			*ug/l*	*50.0*		*96*	*82-125*			
4-Bromofluorobenzene	*52.8*			*ug/l*	*50.0*		*106*	*88-108*			
Toluene-d8	*51.6*			*ug/l*	*50.0*		*103*	*92-112*			

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Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
O-05	The extraction for this analyte was performed outside of the EPA recommended holding time.
O-09	This sample was received with the EPA recommended holding time expired.
Q-01	The recovery of this analyte in QC sample was outside control limits. Sample was justified as ND based on the low level standard at or below the reporting limit.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Analyses Accreditation Summary

Analyte	CAS #	Not By NELAP	ANAB ISO 17025
EPA 8315M in Water			
Monomethylhydrazine (MMH)	60-34-4	✓	

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

3000017

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208500.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water				X	X	X	X								1	See Attached Instructions
TB_20230226-2 (570-129045-3)	2/26/23	10:30 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3/1/23 15:40	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - IR gun

ICOC No:
570-208500

Containers

Count	Container Type	Preservative
5	Amber Glass 1 liter - unpreserved	None
4	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (EPA 608 - Pesticides/PCBs - PP list)	Level IV package, MDL, EQUIS 5C
1	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	525.2- 24 hour extraction for Diaznon and Chyloriphrous- level IV package needed.
1	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV package, MDL, EQUIS 5C
1, 3	SUBCONTRACT	SUB (VOCs- 2-CVE only (E624))	Level IV package, MDL, EQUIS 5C

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: 3C06017
WKO Logged by: Jaime Gomez
Samples Checked by: Jaime Gomez

Date/Time Received: 03/01/23 @ 15:40
# of Samples: 02
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
		☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	4.1 °C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)				
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
		☐	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☒	☐	☐	pH paper Lot# 2071882
	Free Chlorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot# 061221E
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
					pH Reading:
	pH adjusted for O&G	☐	☐	☐	Acid Lot#
					Amt added:
	Project Manager notified?	☐	☐	☐	

PM Comments

Sample Receipt Checklist Prepared by:

Signature: Jaime Gomez Date: 03/06/23

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129045

570-129045 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Trifluralin (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1 2-DCE (E624) Week abs in Hermosa Heights, CA	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221) Enrichment Analysis in Orange CA	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
1 PBLLC_20230226	2/26/23	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2 FB_20230226-1	2/26/23	1030	TB	WM	3	N	N														x				
																									EDBPJOVX
																									Time of Readings 1030
																									DO (mg/L) 8.37
																									pH 6.51
																									Temp (°C/°F) 50.9
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1205
								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____	
Relinquished by:	Company:	Date/Time: 2/27/2023 1720	Received by: EC
Relinquished by: EC	Company:	Date/Time: 2/27/23 1800	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: 2/27/23 1800

Date/Time: 2/27/23 1720
Date/Time:
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2/1.8/1.7 SC12

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4/27/2023

SAP COC 2019/2020 VERSION 3

129045

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE(E624) Weck Labs in Industry, CA	TPH gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Vers Labs in Huntington Beach, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Hayward, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Industry, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Huntington Beach, CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBLLC_20230226	2/26/23	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1030	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H/A	Date/Time: 2-27-2023/1120	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received:		Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

4/27/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 2/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		02/28/23 9:34	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129045-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		2/28/23 1402				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/27/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208500.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)	Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X			7	See Attached Instructions
TB_20230226-2 (570-129045-3)	2/26/23	10:30 Pacific		Water			X						2	See Attached Instructions
							(4)	(2)	(2)	(1)				# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3/1/23 15:40	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - IR-2

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129045-5

Login Number: 129045
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 11:08:10 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129045-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

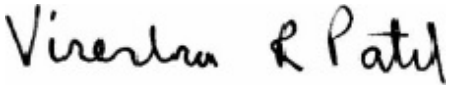
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/9/2023 11:08:10 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Client: Haley & Aldrich, Inc.
Job ID: 570-129045-6
Project/Site: Boeing SSFL ISRA and BMP

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129045-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129045-6

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.2º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129045-1	EPBLLC_20230226	Water	02/26/23 10:30	02/27/23 18:00

aquatic bioassay & consulting laboratories, inc

March 22, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	EPBLLC_20230226
DATE RECEIVED:	27 Feb - 2023
ABC LAB. NO.:	CSE0223.188

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = 4.33 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	13-2107-5775	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	28 Feb-23 14:06	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	07 Mar-23 14:12	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	08-5711-6333	**Code:**	CSE0223.188cer	**Project:**	
Sample Date:	26 Feb-23 10:30	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	EPBLLC_20230226
Sample Age:	52h (2 °C)	**Client:**	Eurofins Calscience		

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
07-9565-8312	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
14-4735-5811	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
07-9565-8312	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
14-4735-5811	Reproduction	Control Resp	26.55	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	26.55	25.18	27.92	19	31	0.6548	2.929	11.03%	0.00%
100		20	25.4	23.8	27	17	32	0.7657	3.424	13.48%	4.33%

7d Survival Rate Detail — MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail — MD5: B677A5BA960C9898ADC2A16A55F2B7DB

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	28	29	29	27	25	29	26	29	28	27
		27	28	27	23	26	31	28	24	19	21
100		27	27	30	22	21	24	26	26	26	27
		32	28	22	22	17	28	25	28	26	24

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Report Date: 21 Mar-23 16:44 (p 1 of 2)
Test Code/ID: CSE0223.188cer / 12-5706-8183

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	14-4735-5811	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	21 Mar-23 16:43	Analysis:	Parametric Bioequivalence-Two Sample	Status Level:	1
Edit Date:	18 Mar-23 12:53	MD5 Hash:	B677A5BA960C9898ADC2A16A55F2B7DB	Editor ID:	007-730-798-8
Batch ID:	13-2107-5775	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	28 Feb-23 14:06	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	07 Mar-23 14:12	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	08-5711-6333	Code:	CSE0223.188cer	Project:	
Sample Date:	26 Feb-23 10:30	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	27 Feb-23 13:45	CAS (PC):		Station:	EPBLLC_20230226
Sample Age:	52h (2 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	32	6.032	0.853	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	26.55	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	13.225	13.225	1	1.303	0.2608	Non-Significant Effect
Error	385.75	10.1513	38			
Total	398.975		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	0.47	7.353	0.4971	Equal Variances
	Mod Levene Equality of Variance Test	0.4094	7.353	0.5261	Equal Variances
	Variance Ratio F Test	1.367	3.432	0.5019	Equal Variances
Distribution	Anderson-Darling A2 Test	1.06	3.878	0.0089	Non-Normal Distribution
	D'Agostino Kurtosis Test	1.167	2.576	0.2432	Normal Distribution
	D'Agostino Skewness Test	1.965	2.576	0.0495	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	5.222	9.21	0.0735	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1819	0.1617	0.0019	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.9429	0.9236	0.0432	Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	26.55	25.18	27.92	27	19	31	0.6548	11.03%	0.00%
100		20	25.4	23.8	27	26	17	32	0.7657	13.48%	4.33%

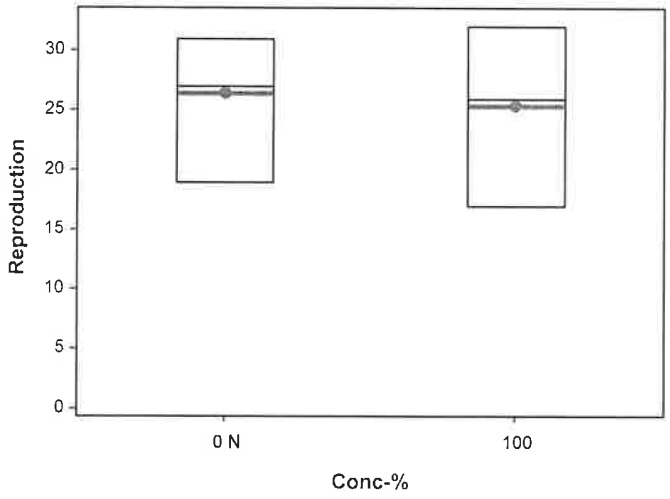
Reproduction Detail

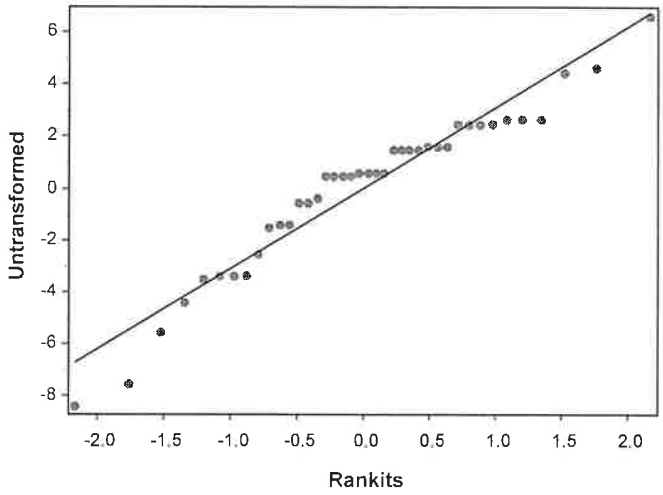
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	28	29	29	27	25	29	26	29	28	27
		27	28	27	23	26	31	28	24	19	21
100		27	27	30	22	21	24	26	26	26	27
		32	28	22	22	17	28	25	28	26	24

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	14-4735-5811	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:43	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	18 Mar-23 12:53	**MD5 Hash:**	B677A5BA960C9898ADC2A16A55F2B7DB	**Editor ID:**	007-730-798-8

Graphics





Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-9565-8312	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:43	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	18 Mar-23 12:53	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	007-730-798-8
Batch ID:	13-2107-5775	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	28 Feb-23 14:06	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	07 Mar-23 14:12	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	08-5711-6333	**Code:**	CSE0223.188cer	**Project:**	
Sample Date:	26 Feb-23 10:30	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	EPBLLC_20230226
Sample Age:	52h (2 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

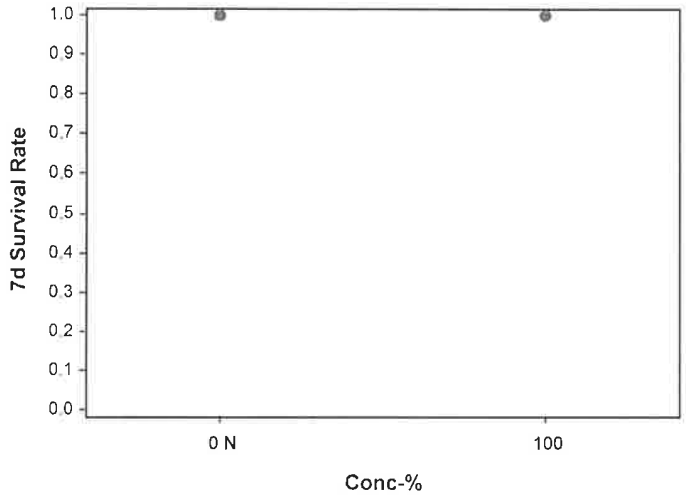
7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-9565-8312	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:43	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	18 Mar-23 12:53	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	007-730-798-8

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	13-2107-5775	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**		
Start Date:	28 Feb-23 14:06	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	07 Mar-23 14:12	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24
Sample ID:	08-5711-6333	**Code:**	CSE0223.188cer	**Project:**		
Sample Date:	26 Feb-23 10:30	**Material:**	Sample Water	**Source:**	Bioassay Report	
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	EPBLLC_20230226	
Sample Age:	52h (2 °C)	**Client:**	Eurofins Calscience			

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	62.62	62.19	63.06	62	63	0.06469	0.5175	0.83%	0
100		8	270	270	270	270	270	0	0	0.00%	0
Overall		16	166.3	109.2	223.4	62	270	26.77	107.1	64.39%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.6	370	377.3	369	380	0.5467	4.373	1.17%	0
100		8	2104	2089	2118	2092	2147	2.217	17.74	0.84%	0
Overall		16	1239	762.5	1715	369	2147	223.3	893.4	72.13%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.887	7.712	8.063	7.6	8.2	0.02625	0.21	2.66%	0
100		8	7.825	7.738	7.912	7.6	7.9	0.01294	0.1035	1.32%	0
Overall		16	7.856	7.769	7.943	7.6	8.2	0.04079	0.1632	2.08%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	96.38	95.94	96.81	96	97	0.06469	0.5175	0.54%	0
100		8	620	620	620	620	620	0	0	0.00%	0
Overall		16	358.2	214.1	502.3	96	620	67.6	270.4	75.49%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8.038	7.994	8.081	8	8.1	0.00647	0.05176	0.64%	0
100		8	7.888	7.858	7.917	7.8	7.9	0.004417	0.03533	0.45%	0
Overall		16	7.963	7.915	8.01	7.8	8.1	0.02213	0.08851	1.11%	0 (0%)

Temperature-°C

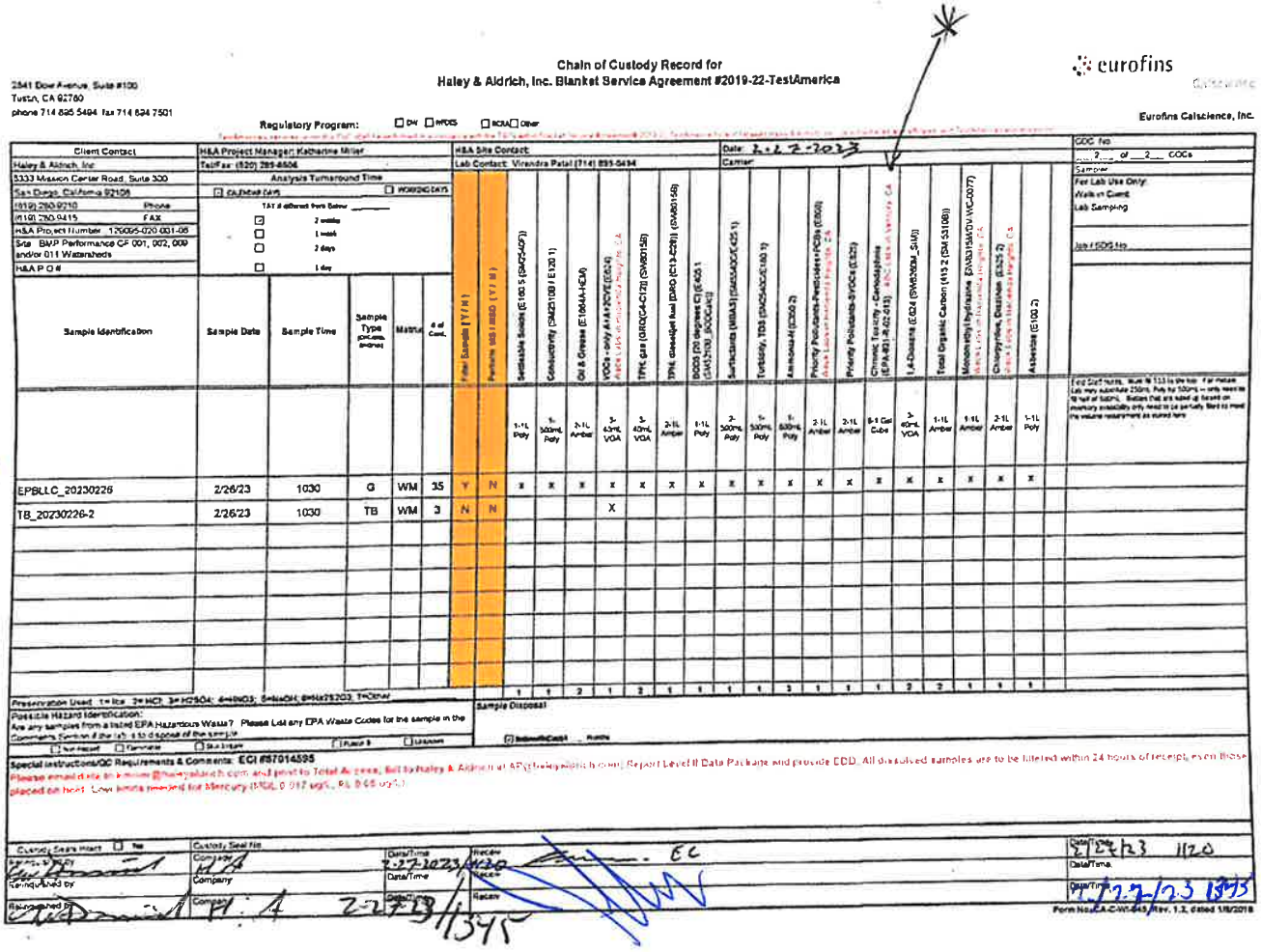
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24	24	24	24	24	0	0	0.00%	0
Overall		16	24	24	24	24	24	0	0	0.00%	0 (0%)

Scanned with CamScanner

Temp. deg. C = 2.2°C

Chlorine (mg/L) = <0.1

NH3 (mg/L) = <0.1



Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2541 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No: 2 of 2 COCs
Haley & Aldrich, Inc	Tel/Fax: (520) 289-6606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	Sampler:
3333 Mission Center Road, Suite 300	Analysis Turnaround Time ☐ CALENDAR (CW) ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
San Diego, California 92108	TAT if different from Below: ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Job / SDG No:
(619) 280-9210 Phone				
(619) 280-9415 FAX				
H&A Project Number: 126695-020.001-06				
Site: BMP Performance CF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (per conc. analyte)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Surfactants (E165.5 (SM5540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only Ammonia (E624)	TPHc gas (GRO)(C4-C12) (SW8015B)	TPHc distillate fuel (DRO) (C13-C28)) (SW8015B)	SVOCs (or degrees C) (E625.1 (SM5520B, SCCC-MS))	Surfactants (MBAS) (SM5540C)(E425.1)	Turbidity, TDS (SM2540C)(E160.3)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608)	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013)	1,4-Dioxane (E624 (SW8260B_SIM))	Total Organic Carbon (415.2 (SM5310B))	Monomethyl hydrazine (EN8315A/DV-WC-0077)	Chlorophos, Diazinon (E525.2)	Asbestos (E100.2)	Field Cond. Temp. Lab may substitute 25deg. Pulp for 100mL or only need to fill half of bottle. Bottles that are saved up for use on inventory availability only, need to be partially filled to meet the volume requirement as noted here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	2-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	8-5 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBLLC_20230226	2/26/23	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1030	TB	WM	3	N	N				X																
								1	1	2	1	2	1	1	1	1	1	3	1	1	1	2	2	1	1	1	

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email results to katherine@haleyaldrich.com and jpratt@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low levels required for Mercury (MDL: 0.012 ug/L, RL: 0.05 ug/L)

Custody Seals Intact ☐ Yes	Custody Seal No.	Date/Time	Received	Date/Time
Relinquished by	Company	2-27-2023 1120		2/27/23 1120
Relinquished by	Company	Date/Time	Received	Date/Time
Relinquished by	Company	Date/Time	Received	Date/Time 2-27-23 1345

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

EC

* Hand-delivered to ABC with copy of COC

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 7 February - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 15.00 ug/l
EC50 = 20.00 ug/l

ENDPOINT: REPRODUCTION

NOEC = 10.00 ug/l

IC25 = 12.18 ug/l
IC50 = 18.12 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

29 north olive st. ventura, ca 93001 (805) 643 5621 aquabio.org

CETIS Summary Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
12-2134-6724	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	✓	10	30	17.32	---	1
01-7826-1344	Reproduction	Dunnett Multiple Comparison Test	✓	10	30	17.32	14.9%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
10-0781-6132	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	13	13	13	1
				EC20	14	14	14	
				EC25	15	15	15	
				EC40	18	18	18	
				EC50	20	20	20	
20-1572-0105	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	9.744	8.161	12.04	1
			✓	IC20	11	9.214	13.1	
			✓	IC25	12.18	10.33	14.15	
			✓	IC40	15.75	14.27	17.32	
			✓	IC50	18.12	16.89	19.44	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
10-0781-6132	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
12-2134-6724	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
01-7826-1344	Reproduction	Control Resp	21.6	15	<<	Yes	Passes Criteria
20-1572-0105	Reproduction	Control Resp	21.6	15	<<	Yes	Passes Criteria
01-7826-1344	Reproduction	PMSD	0.1488	0.13	0.47	Yes	Passes Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	21.6	18.77	24.43	16	29	1.249	3.95	18.29%	0.00%
3		10	27.1	24.85	29.35	21	32	0.9939	3.143	11.60%	-25.46%
5		10	27.2	25.39	29.01	23	31	0.8	2.53	9.30%	-25.93%
10		10	21.3	18.67	23.93	17	28	1.165	3.683	17.29%	1.39%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail MD5: E68F14682D021D024F00396964E3E9BD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail MD5: B6584EF080BB39328ADF89E906DB2ACD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	01-7826-1344	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	10	30	17.32	---	3.215	14.88%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	-3.649	2.133	3.215	CDF	1.0000	Non-Significant Effect
		5	18	-3.715	2.133	3.215	CDF	1.0000	Non-Significant Effect
		10	18	0.199	2.133	3.215	CDF	0.6730	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	21.6	15	<<	Yes	Passes Criteria
PMSD	0.1488	0.13	0.47	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	325.4	108.467	3	9.547	8.9E-05	Significant Effect
Error	409	11.3611	36			
Total	734.4		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	1.886	11.34	0.5963	Equal Variances
	Levene Equality of Variance Test	0.7841	4.377	0.5107	Equal Variances
	Mod Levene Equality of Variance Test	0.5917	4.377	0.6245	Equal Variances
Distribution	Anderson-Darling A2 Test	0.1802	3.878	0.9718	Normal Distribution
	D'Agostino Kurtosis Test	0.2514	2.576	0.8015	Normal Distribution
	D'Agostino Skewness Test	0.6674	2.576	0.5045	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.5086	9.21	0.7754	Normal Distribution
	Kolmogorov-Smirnov D Test	0.06346	0.1617	1.0000	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9856	0.9236	0.8811	Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	21.6	18.77	24.43	22.75	16	29	1.249	18.29%	0.00%
3		10	27.1	24.85	29.35	27	21	32	0.9939	11.60%	-25.46%
5		10	27.2	25.39	29.01	27.67	23	31	0.8	9.30%	-25.93%
10		10	21.3	18.67	23.93	20.5	17	28	1.165	17.29%	1.39%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

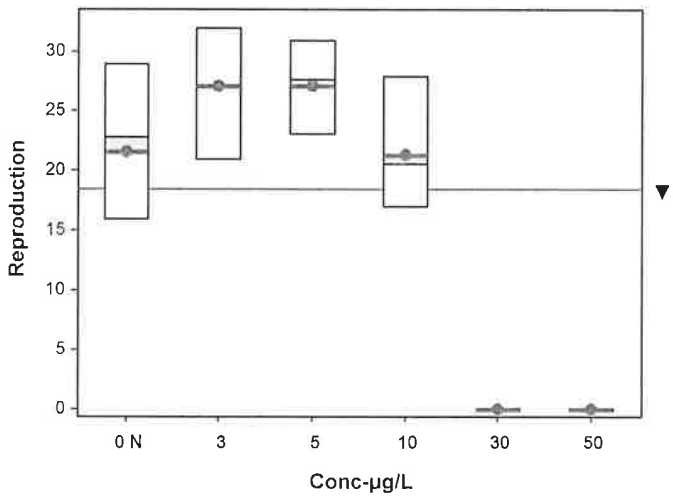
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

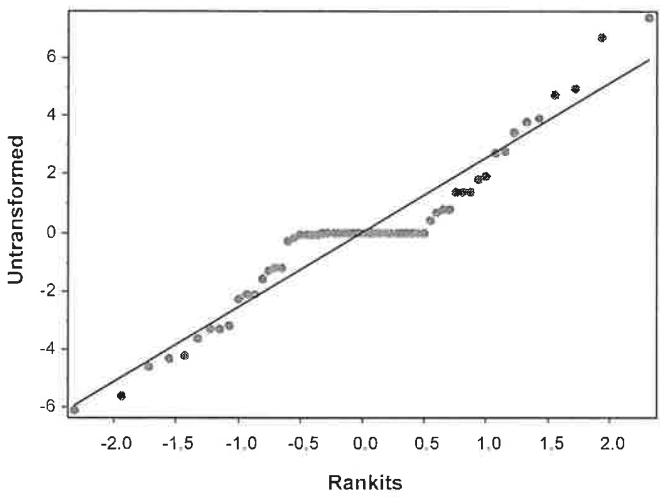
Analysis ID:	01-7826-1344	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Graphics





CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	10-0781-6132	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	13	13	13
EC20	14	14	14
EC25	15	15	15
EC40	18	18	18
EC50	20	20	20

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	**Code**	**Count**	**Mean**	**Median**	**Min**	**Max**	**CV%**	**%Effect**	**ΣA/ΣB**	**Mean**	**%Effect**
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

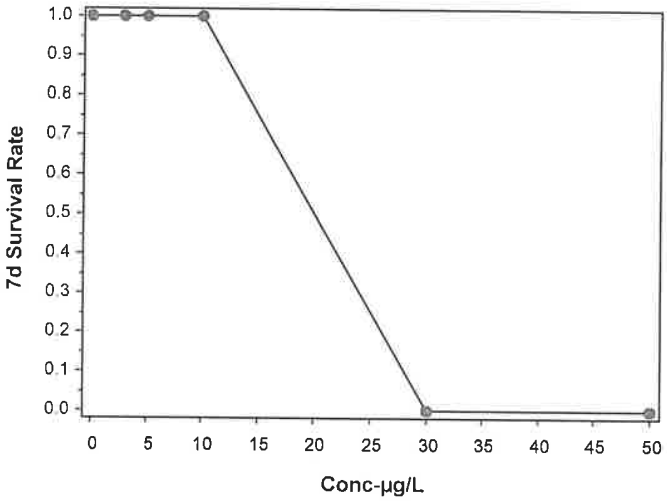
7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	10-0781-6132	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8

Graphics



Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-1572-0105	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	10 Mar-23 17:02	MD5 Hash:	B6584EF080BB39328ADF89E906DB2ACD	Editor ID:	004-984-722-8
Batch ID:	19-0270-0407	Test Type:	Reproduction-Survival (7d)	Analyst:	Tina DeLeon
Start Date:	07 Feb-23 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Feb-23 15:45	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 2h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-3831-7124	Code:	CER020723	Project:	REF TOX
Sample Date:	07 Feb-23 14:00	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1451893	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	21.6	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	9.744	8.161	12.04
IC20	11	9.214	13.1
IC25	12.18	10.33	14.15
IC40	15.75	14.27	17.32
IC50	18.12	16.89	19.44

Reproduction Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	21.6	22.75	16	29	18.29%	0.00%	25.3	0.00%
3		10	27.1	27	21	32	11.60%	-25.46%	25.3	0.00%
5		10	27.2	27.67	23	31	9.30%	-25.93%	25.3	0.00%
10		10	21.3	20.5	17	28	17.29%	1.39%	21.3	15.81%
30		10	0	0	0	0	---	100.00%	0	100.00%
50		10	0	0	0	0	---	100.00%	0	100.00%

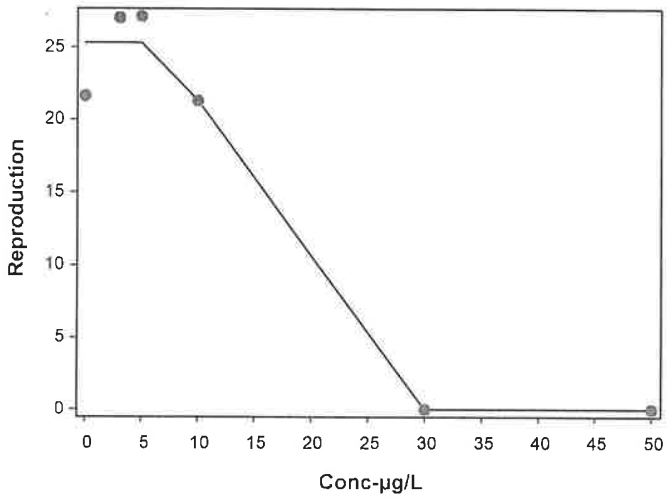
Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-1572-0105	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8

Graphics



Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-2134-6724	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	10 Mar-23 17:02	MD5 Hash:	E68F14682D021D024F00396964E3E9BD	Editor ID:	004-984-722-8
Batch ID:	19-0270-0407	Test Type:	Reproduction-Survival (7d)	Analyst:	Tina DeLeon
Start Date:	07 Feb-23 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Feb-23 15:45	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 2h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-3831-7124	Code:	CER020723	Project:	REF TOX
Sample Date:	07 Feb-23 14:00	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0000	Exact	2.7E-05	Significant Effect
		50*	0.0000	Exact	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		0	10	10	0.0000	1.0000	100.00%
50		0	10	10	0.0000	1.0000	100.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

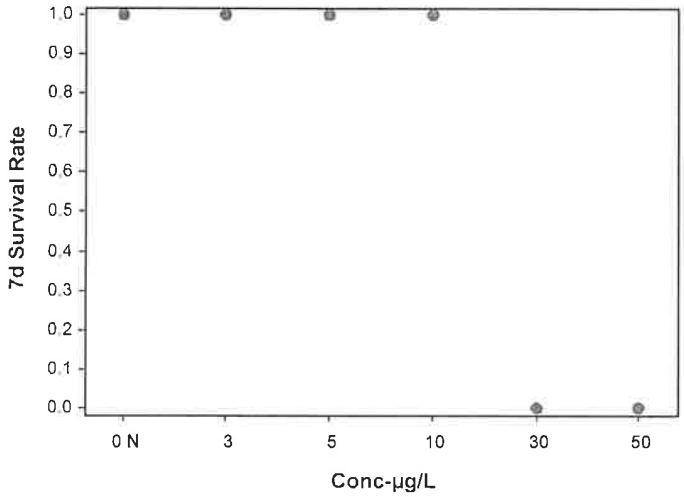
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-2134-6724	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon	
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX	
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant	
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX	
Sample Age:	---	**Client:**	ABC Labs			

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	65	65	65	65	65	0	0	0.00%	0
50		4	60	60	60	60	60	0	0	0.00%	0
Overall		12	63.33	61.77	64.9	60	65	0.7107	2.462	3.89%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.4	370.2	376.6	369	380	0.4815	3.852	1.03%	0
3		8	376.2	370.9	381.6	370	386	0.7955	6.364	1.69%	0
5		8	369.1	365.8	372.4	364	373	0.493	3.944	1.07%	0
10		8	369.9	368.6	371.2	367	372	0.1941	1.553	0.42%	0
30		6	370.3	368.9	371.8	369	373	0.2277	1.366	0.37%	0
50		3	370	365	375	368	372	0.6667	2	0.54%	0
Overall		41	371.7	370.3	373.2	364	386	0.7063	4.522	1.22%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.838	7.677	7.998	7.6	8.1	0.02403	0.1923	2.45%	0
3		8	7.763	7.596	7.929	7.5	8.1	0.02494	0.1996	2.57%	0
5		8	7.713	7.537	7.888	7.5	8.1	0.02625	0.21	2.72%	0
10		8	7.675	7.509	7.841	7.4	8	0.02478	0.1982	2.58%	0
30		6	7.617	7.295	7.938	7.1	8	0.05101	0.3061	4.02%	0
50		3	7.867	7.58	8.154	7.8	8	0.03849	0.1155	1.47%	0
Overall		41	7.737	7.668	7.805	7.1	8.1	0.03381	0.2165	2.80%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	98	98	98	98	98	0	0	0.00%	0
50		4	99	99	99	99	99	0	0	0.00%	0
Overall		12	98.33	98.02	98.65	98	99	0.1421	0.4924	0.50%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.95	7.841	8.059	7.7	8.1	0.01637	0.1309	1.65%	0
3		8	7.975	7.901	8.049	7.8	8.1	0.01108	0.08864	1.11%	0
5		8	7.95	7.841	8.059	7.7	8.1	0.01637	0.1309	1.65%	0
10		8	7.95	7.85	8.05	7.7	8.1	0.01494	0.1195	1.50%	0
30		6	7.917	7.794	8.039	7.7	8	0.01948	0.1169	1.48%	0
50		3	7.9	7.652	8.148	7.8	8	0.03333	0.1	1.27%	0
Overall		41	7.946	7.911	7.982	7.7	8.1	0.01749	0.112	1.41%	0 (0%)

CETIS Measurement Report

Report Date: 20 Mar-23 12:21 (p 2 of 2)
Test Code/ID: CER020723 / 14-0030-6243

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		5	24	24	24	24	24	0	0	0.00%	0
50		3	24	24	24	24	24	0	0	0.00%	0
Overall		40	24	24	24	24	24	0	0	0.00%	0 (0%)

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129045

570-129045 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Trifluralin (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1 2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
SBLLC_20230226	2/26/23	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
5_20230226-1	2/26/23	1030	TB	WM	3	N	N														x				
																									EDBPJOVX
																									Time of Readings 1030
																									DO (mg/L) 8.37
																									pH 6.51
																									Temp (°C/°F) 50.9
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1205
								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company:	Date/Time: 2/27/2023 1720	Received by: EC
Relinquished by: EC	Company:	Date/Time: 2/27/23 1800	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: 2/27/23 1800

Date/Time: 2/27/23 1120
Date/Time:
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2/1.8/1.7 SC12

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4/9/2023

SAP COC 2019/2020 VERSION 3

129045

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE(E624) Weck Labs in Hacienda Heights CA	TPH gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Vers Labs in Harbor Blvd Garden Grove CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Santa CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs In Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs Hacienda Heights CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBLLC_20230226	2/26/23	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1030	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H/A	Date/Time: 2-27-2023/1120	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received:	2/27/23	Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/9/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time: 2/28/23 1018	Company EC	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		02/28/23 9:34	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129045-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		2/28/23 1402				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/9/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208500.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)	Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X			7	See Attached Instructions
TB_20230226-2 (570-129045-3)	2/26/23	10:30 Pacific		Water			X						2	See Attached Instructions
							(4)	(2)	(2)	(1)				# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-1-23 15:40	EC		3/1/23 15:40	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - IR Gun

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129045-6

Login Number: 129045

List Number: 1

Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:30:08 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129045-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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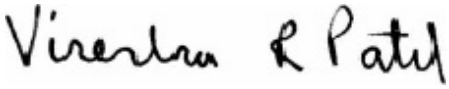
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
4/9/2023 10:30:08 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-7

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129045-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129045-7

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.2º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-7

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129045-1	EPBLLC_20230226	Water	02/26/23 10:30	02/27/23 18:00

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322305473
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/01/2023
Analyzed: 03/11/2023

Proj: 570-208637.1/ 570-129045-7/ 57014595/ Boeing SSFL ISRA and BMP

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS				
					Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
							MFL (million fibers per liter)		
EPBLLC_20230226 (570-129045-1) 322305473-0001	3/2/2023 01:50 PM	0.10	1288	0.2580	≥ 0.5 µm	None Detected	ND	50.00	<50.00	0.00 - 180.00
					> 10 µm only	None Detected	ND	50.00	<50.00	0.00 - 180.00

Collection Date/Time: *02/26/2023 10:30 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Sherrie Ahmad (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 03/12/2023 18:36:13

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

#322305473

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208637.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-7
Address: 520 Mission Street, ,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

0.8°c

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: (ft)

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		02/28/23 11:27	ETC	Annette McKissack	03/01/23 935	UT Testing
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Page 1 of 30

#322305473

McKissack, Annette

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, March 1, 2023 11:48 AM
To: McKissack, Annette
Cc: LA Testing Lab - Pasadena
Subject: RE: 570-208637.1 | 570-129045-7

[EXTERNAL E-MAIL]

Sorry this should be wastewater – both levels of reporting.

Best Regards,

Virendra Patel
Project Manager

Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: McKissack, Annette <amckissack@latesting.com>
Sent: Wednesday, March 1, 2023 10:55 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: LA Testing Lab - Pasadena <pasadenalab@EMSL.com>
Subject: 570-208637.1 | 570-129045-7

EXTERNAL EMAIL*

Hello,

Please confirm if the above mentioned project will be analyzed as a drinking water or waste water analysis.

Thank you,

Annette McKissack
Laboratory Administrative Assistant
LA Testing 520 Mission Street South Pasadena, CA 91030 #322305473
Phone: 323-254-9960 Toll Free: 800-303-0047

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Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

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129045

570-129045 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Trifluralin (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1 2-DCE (E624) Week labs in Hacienda Heights, CA	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221) Enrollbay Analytical in Orange CA	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
1	PBLLC_20230226	2/26/23	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2	FB_20230226-1	2/26/23	1030	TB	WM	3	N	N														x			
																									EDBPJOVX
																									Time of Readings 1030
																									DO (mg/L) 8.37
																									pH 6.51
																									Temp (°C/°F) 50.9
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1205
								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Page 13 of 20

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____	
Relinquished by:	Company:	Date/Time: 2/27/23 1720	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by: EC	Company:	Date/Time: 2/27/23 1800	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: 2/27/23 1800	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3 | 2.2 | 1.8 | 1.7 SC12

4/9/2023

SAP COC 2019/2020 VERSION 3

129045

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE(E624) Weck Labs in Hacienda Heights CA	TPH gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Vernon Labs in Hacienda Heights CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Santa CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBLLC_20230226	2/26/23	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1030	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H/A	Date/Time: 2-27-2023/1120	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received:	2/27/23	Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/9/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/28/23 1018	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		02/28/23 9:34	EC			
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129045-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		2/28/23 1402				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208500.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)	Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X			7	See Attached Instructions
TB_20230226-2 (570-129045-3)	2/26/23	10:30 Pacific		Water			X						2	See Attached Instructions
							(4)	(2)	(2)	(1)				# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-1-23 15:40	EC		3/1/23 15:40	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - IR Gun

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129045-7

Login Number: 129045
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129045-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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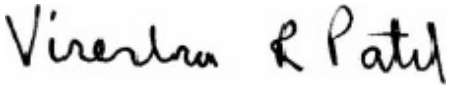
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Qualifiers

Rad

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129045-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129045-8

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.2º C.

RAD
Methods 900.0, 9310: Gross Alpha and Gross Beta batch 605627
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: EPBLLC_20230226 (570-129045-1), (180-153809-B-1-A) and (180-153809-B-1-E DU). Analytical results are reported with the detection limit achieved.

Methods 900.0, 9310: Gross Alpha and Gross Beta batch 605627
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230226 (570-129045-1), (LCS 160-605627/2-A), (LCSB 160-605627/3-A), (MB 160-605627/1-A), (180-153809-B-1-A), (180-153809-B-1-E DU), (180-153809-B-1-D MS) and (180-153809-B-1-C MSBT)

Method 900.0: Gross Alpha Beta prep batch 160-606326:

The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass: EPBLLC_20230226 (570-129045-1). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha Beta prep batch 160-606236:

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-606326 and analytical batch 160-606671 were outside control limits for one or more analytes. In addition RER/RPD was also outside of control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 900.0: Gross Alpha Beta prep batch 160-606326:

The detection goal was not met for the following sample(s). The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank achieved the detection goal demonstrating acceptable sample preparation and instrument performance. (570-129852-R-1-F)

Method 900.0: Gross Alpha Beta prep batch 160-606326:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230226 (570-129045-1), (LCS 160-606326/2-A), (LCSB 160-606326/3-A), (MB 160-606326/1-A), (570-129852-R-1-F), (570-129852-R-1-J MS), (570-129852-R-1-L MSBT), (570-129852-R-1-M MSBTD) and (570-129852-R-1-K MSD)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234

Job ID: 570-129045-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBLLC_20230226 (570-129045-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 901.1: Gamma Prep Batch 160-604032
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Job ID: 570-129045-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

**The method blank (MB) Z-score is within limits and is located in the level IV raw data.

EPBLLC_20230226 (570-129045-1), (570-128840-R-1-D) and (570-128840-R-1-E DU)

Method 903.0: Radium-226 batch 602356
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230226 (570-129045-1), (LCS 160-602356/2-A), (LCSD 160-602356/3-A) and (MB 160-602356/1-A)

Methods 903.0, 9315: Radium-226 batch 603854
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Method 904.0: Radium-228 batch 602360
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: EPBLLC_20230226 (570-129045-1). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 602360
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230226 (570-129045-1), (LCS 160-602360/2-A), (LCSD 160-602360/3-A) and (MB 160-602360/1-A)

Methods 904.0, 9320: Radium-228 batch 603857
The LCS recovered at (128%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCSD 160-603857/25-A)

Methods 904.0, 9320: Radium-228 batch 603857
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230226 (570-129045-1), (LCS 160-603857/2-A), (LCSD 160-603857/25-A), (MB 160-603857/1-A), (570-129852-R-1-B), (570-129852-L-1-C MS) and (570-129852-L-1-D MSD)

Method 905: Strontium-90 prep batch 160-603495:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230226 (570-129045-1), (LCS 160-603033/2-A), (LCSD 160-603033/3-A) and (MB 160-603033/1-A)

Method 905: Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is

Job ID: 570-129045-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample-specific unless otherwise stated elsewhere in this narrative.

Method 905: Strontium-90 batch 604379
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230226 (570-129045-1), (LCS 160-604379/2-A), (MB 160-604379/1-A), (570-129852-R-1-D), (570-129852-L-1-E MS) and (570-129852-L-1-F MSD)

Method 906.0: Tritium 605397
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBLLC_20230226 (570-129045-1), (LCS 160-605397/2-A), (MB 160-605397/1-A), (570-129852-Q-1-B), (570-129852-K-1-D MS) and (570-129852-K-1-E MSD)

Method 906.0: The matrix spike duplicate (MSD) recovery was inadvertently not spiked. However the matrix spike (MS) was within range and all other QC was within limits. Per client, the data will be reported with this narrative.EPBLLC_20230226 (570-129045-1), (570-129852-Q-1-B), (570-129852-K-1-D MS) and (570-129852-K-1-E MSD)

Method A-01-R: Isotopic Uranium Batch 605724
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.EPBLLC_20230226 (570-129045-1), (LCS 160-605724/2-A), (MB 160-605724/1-A), (570-129852-R-1-E), (570-129852-L-1-G MS) and (570-129852-L-1-H MSD)

Method A-01-R: Isotopic Uranium batch 605729
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230226 (570-129045-1), (LCS 160-605729/2-A), (MB 160-605729/1-A), (570-131449-AX-1-B) and (570-131449-AX-1-C DU)

Method ExtChrom: Uranium Prep Batch 160-605729:
The following sample was prepared at a reduced aliquot due to discoloration: EPBLLC_20230226 (570-129045-1).

Method ExtChrom: Uranium Prep Batch 160-605724:
The following sample was prepared at a reduced aliquot due to sediment and discoloration: EPBLLC_20230226 (570-129045-1).

Method PrecSep_0: Radium-228 Prep Batch 160-602360

The following sample was prepared at a reduced aliquot due to Matrix: EPBLLC_20230226 (570-129045-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0:

Method PrecSep-21: Radium-226 Prep Batch 160-602356

The following sample was prepared at a reduced aliquot due to Matrix: EPBLLC_20230226 (570-129045-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21:

Method PrecSep-7: Strontium 90 Prep Batch 160-603033

The following sample was prepared at a reduced aliquot due to Matrix: EPBLLC_20230226 (570-129045-1). A laboratory control sample/

Job ID: 570-129045-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Client Sample ID: EPBLLC_20230226 **Lab Sample ID: 570-129045-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	W0.W	G	30.8	31.8	3.00	40.3	pCi/L	03/30/23 11:34	04/04/23 13:06	1
Gross Beta	72.3	G	13.3	15.2	4.00	13.8	pCi/L	03/30/23 11:34	04/04/23 13:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	4.72	U G F	7.83	7.85	3.00	13.4	pCi/L	04/06/23 10:28	04/10/23 20:49	1
Gross Beta	**4.55**		2.62	2.66	4.00	3.91	pCi/L	04/06/23 10:28	04/10/23 20:49	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.06	U	15.1	15.1	20.0	14.1	pCi/L	03/17/23 14:08	03/28/23 21:53	1
Potassium-40	-64.3	U	141	141		196	pCi/L	03/17/23 14:08	03/28/23 21:53	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-3.94	U	14.3	14.3	20.0	17.6	pCi/L	03/22/23 16:26	03/30/23 05:38	1
Potassium-40	-36.2	U	127	127		191	pCi/L	03/22/23 16:26	03/30/23 05:38	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Method: EPA 903.0 - Radium-22W(GFPC)

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-22W	**1.32**		0.488	0.502	1.00	0.544	pCi/L	03/06/23 09:11	03/29/23 21:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.4*		*30 - 110*	*03/06/23 09:11*	*03/29/23 21:59*	*1*

Method: EPA 903.0 - Radium-22W(GFPC) - Dissolved

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-22W	**0.234**		0.128	0.130	1.00	0.166	pCi/L	03/16/23 07:58	04/07/23 10:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.7*		*30 - 110*	*03/16/23 07:58*	*04/07/23 10:45*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	2.62	U G	1.98	2.00	1.00	3.09	pCi/L	03/06/23 09:48	03/16/23 12:15	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.4*		*30 - 110*	*03/06/23 09:48*	*03/16/23 12:15*	*1*
Y Carrier	*86.0*		*30 - 110*	*03/06/23 09:48*	*03/16/23 12:15*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.722	U	0.491	0.496	1.00	0.739	pCi/L	03/16/23 09:45	03/30/23 12:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*89.7*		*30 - 110*	*03/16/23 09:45*	*03/30/23 12:06*	*1*
Y Carrier	*84.9*		*30 - 110*	*03/16/23 09:45*	*03/30/23 12:06*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.371	U	0.372	0.374	3.00	0.603	pCi/L	03/09/23 13:03	03/17/23 18:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*82.7*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:33*	*1*
Y Carrier	*82.2*		*30 - 110*	*03/09/23 13:03*	*03/17/23 18:33*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.525	U	0.460	0.462	3.00	0.733	pCi/L	03/20/23 13:22	03/29/23 16:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*76.7*		*30 - 110*	*03/20/23 13:22*	*03/29/23 16:02*	*1*
Y Carrier	*74.0*		*30 - 110*	*03/20/23 13:22*	*03/29/23 16:02*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Method: EPA 90W0 - Tritium, Total (LSC)

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-19.8	U F	138	138	500	262	pCi/L	03/29/23 11:02	04/04/23 17:58	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	17.4		2.63	2.82	1.00	0.597	pCi/L	03/30/23 15:31	04/04/23 20:40	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBLLC62023022W
Date Collected: 02/2W23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	12.5		1.42	1.60	1.00	0.209	pCi/L	03/30/23 16:34	04/03/23 20:56	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (30-110)
570-129045-1	EPBLLC_20230226	77.4
LCS 160-602356/2-A	Lab Control Sample	87.6
LCS 160-603854/2-A	Lab Control Sample	94.8
LCSD 160-602356/3-A	Lab Control Sample Dup	83.3
LCSD 160-603854/25-A	Lab Control Sample Dup	89.2
MB 160-602356/1-A	Method Blank	87.6
MB 160-603854/1-A	Method Blank	91.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	Ba (30-110)
570-129045-1	EPBLLC_20230226	89.7

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
570-129045-1	EPBLLC_20230226	77.4	86.0
LCS 160-602360/2-A	Lab Control Sample	87.6	87.1
LCS 160-603857/2-A	Lab Control Sample	94.8	81.5
LCSD 160-602360/3-A	Lab Control Sample Dup	83.3	87.1
LCSD 160-603857/25-A	Lab Control Sample Dup	89.2	87.5
MB 160-602360/1-A	Method Blank	87.6	87.9
MB 160-603857/1-A	Method Blank	91.5	83.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)
570-129045-1	EPBLLC_20230226	89.7	84.9

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129045-8
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129045-1	EPBLLC_20230226	82.7	82.2
LCS 160-603033/2-A	Lab Control Sample	79.1	82.2
LCS 160-604379/2-A	Lab Control Sample	85.6	76.6
LCSD 160-603033/3-A	Lab Control Sample Dup	80.1	82.2
MB 160-603033/1-A	Method Blank	87.1	81.1
MB 160-604379/1-A	Method Blank	79.3	70.3

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129045-1	EPBLLC_20230226	76.7	74.0

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-605724/2-A	Lab Control Sample	92.1
LCS 160-605729/2-A	Lab Control Sample	38.1
MB 160-605724/1-A	Method Blank	92.8
MB 160-605729/1-A	Method Blank	46.2

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-605627/1-A
Matrix: Water
Analysis Batch: 606125

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605627

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
s copp diU, y	0P08907	4	0P318	0P318	3P00	0PC09	U i eSR	03S30S23 11:38	08S08S23 12:5C	1
s copp gnhy	0P061C0	4	0P507	0P507	8P00	0PC97	U i eSR	03S30S23 11:38	08S08S23 12:5C	1

Lab Sample ID: LCS 160-605627/2-A
Matrix: Water
Analysis Batch: 606125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605627

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
s copp diU, y	50P5	51P37		7P71	3P00	2PC2	U i eSR	102	75 - 125

Lab Sample ID: LCSB 160-605627/3-A
Matrix: Water
Analysis Batch: 606125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605627

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
s copp gnhy	73P8	78P38		7P96	8P00	0P916	U i eSR	101	75 - 125

Lab Sample ID: MB 160-606326/1-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606326

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
s copp diU, y	0P8133	4	0P857	0P85C	3P00	1P12	U i eSR	08S06S23 10:2C	08S10S23 20:87	1
s copp gnhy	0P02677	4	0P896	0P896	8P00	0PC78	U i eSR	08S06S23 10:2C	08S10S23 20:87	1

Lab Sample ID: LCS 160-606326/2-A
Matrix: Water
Analysis Batch: 606895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
s copp diU, y	50P5	51P96		7P62	3P00	2P05	U i eSR	103	75 - 125

Lab Sample ID: LCSB 160-606326/3-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
s copp gnhy	73P8	78P51		7P9C	8P00	0P927	U i eSR	102	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604032/1-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604032

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
l npeum-137	-0P8655	4	10P3	10P3	20P0	12P1	U i eR	03S17S23 18:0C	03S22S23 19:89	1
j oHyppeum-80	12P53	4	7CP9	7CP9		135	U i eR	03S17S23 18:0C	03S22S23 19:89	1

Lab Sample ID: LCS 160-604032/2-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604032

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
dmnoeheum-281	135000	183200		17000		815	U i eR	106	75 - 125
l npeum-137	80900	817C0		89C0	20P0	92P9	U i eR	102	75 - 125
l obyiH60	17C00	1C360		2190		50P3	U i eR	103	75 - 125

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
l npeum-137	5P575	4	11P5	11P5	20P0	18P5	U i eR	03S22S23 16:26	03S29S23 21:25	1
j oHyppeum-80	-139P9	4	1C0	1C0		2C5	U i eR	03S22S23 16:26	03S29S23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
dmnoeheum-281	135000	135500		16100		883	U i eR	100	75 - 125
l npeum-137	80C00	82170		5030	20P0	105	U i eR	103	75 - 125
l obyiH60	17C00	1C660		2230		58PC	U i eR	105	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-602356/1-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 602356

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Myr eum-226	0P03C27	4	0P0681	0P0682	1P00	0P111	U i eR	03S06S23 09:11	03S29S23 20:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*478*		*30 - 110*	*032/ 263 09:11*	*032692 63 60:10*	*1*

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-602356/2-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 602356

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Myrcum-226			11.3	11.79		1.20	1.00	0.11C	Ui eSR	108	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	478		30 - 110

Lab Sample ID: LCSD 160-602356/3-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 602356

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Myrcum-226			11.3	11.01		1.18	1.00	0.107	Ui eSR	97	75 - 125	0.33	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	438		30 - 110

Lab Sample ID: MB 160-603854/1-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603854

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Myrcum-226	-0.006C58	4	0.08C1	0.08C1	1.00	0.106	Ui eSR	03S16S23 07:5C	08S07S23 10:81	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	918		30 - 110	03/21/23 07:54	0.207263 10:.1	1

Lab Sample ID: LCS 160-603854/2-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603854

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Myrcum-226			11.3	11.81		1.1C	1.00	0.07C5	Ui eSR	101	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	9.84		30 - 110

Lab Sample ID: LCSD 160-603854/25-A
Matrix: Water
Analysis Batch: 606587

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603854

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Myrcum-226			11.3	10.67		1.13	1.00	0.155	Ui eSR	98	75 - 125	0.32	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCSD 160-603854/25-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 606587 **Prep Batch: 603854**

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	498.6		30 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-602360/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 603871 **Prep Batch: 602360**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Myrtle-22C	0.29C5	4	0.293	0.298	1.00	0.86C	Uncert.	03/06/23 09:8C	03/16/23 12:10	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	478.7		30 - 110	03/20/23 09:.4	03/21/23 16:10	1
Y Carrier	478.9		30 - 110	03/20/23 09:.4	03/21/23 16:10	1

Lab Sample ID: LCS 160-602360/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 603871 **Prep Batch: 602360**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Myrtle-22C			0.11	0.303		1.17	1.00	0.855	Uncert.	102	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	478.7		30 - 110
Y Carrier	478.1		30 - 110

Lab Sample ID: LCSD 160-602360/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 603871 **Prep Batch: 602360**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Myrtle-22C			0.11	9.1C2		1.2C	1.00	0.521	Uncert.	113	75 - 125	0.36	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	438.3		30 - 110
Y Carrier	478.1		30 - 110

Lab Sample ID: MB 160-603857/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605623 **Prep Batch: 603857**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Myrtle-22C	0.8585		0.30C	0.311	1.00	0.852	Uncert.	03/16/23 09:85	03/30/23 12:11	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: MB 160-603857/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605623 **Prep Batch: 603857**

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	9185		30 - 110	03/21/23 09:.5	03/30/23 16:11	1
Y Carrier	4387		30 - 110	03/21/23 09:.5	03/30/23 16:11	1

Lab Sample ID: LCS 160-603857/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605623 **Prep Batch: 603857**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Myrcum-22C	CP0C	9P9C1		1P32	1P00	0P866	Uni&R	128	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	9.84		30 - 110
Y Carrier	4185		30 - 110

Lab Sample ID: LCSD 160-603857/25-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605624 **Prep Batch: 603857**

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Myrcum-22C	CP0C	10P32		1P36	1P00	0P879	Uni&R	12C	75 - 125	0P13	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	4986		30 - 110
Y Carrier	4785		30 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-603033/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 604031 **Prep Batch: 603033**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Bhot Helium-90	-0P1395	4	0P189	0P189	3P00	0P303	Uni&R	03/09/23 13:03	03/17/23 1C:29	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	4781		30 - 110	03/09/23 13:03	03/17/23 14:69	1
Y Carrier	4181		30 - 110	03/09/23 13:03	03/17/23 14:69	1

Lab Sample ID: LCS 160-603033/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 604031 **Prep Batch: 603033**

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Bhot Helium-90	7P35	6P0C1		0P000	3P00	0P299	Uni&R	98	75 - 125

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	798		30 - 110
Y Carrier	468		30 - 110

Lab Sample ID: LCSD 160-603033/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 604031 **Prep Batch: 603033**

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Bhot Helium-90			7.35	7.895		0.25C	3.00	0.360	Uiesr	102	75 - 125	0.37	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	408		30 - 110
Y Carrier	468		30 - 110

Lab Sample ID: MB 160-604379/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605413 **Prep Batch: 604379**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Bhot Helium-90	-0.1030	4	0.26C	0.26C	3.00	0.892	Uiesr	03/20/23 13:22	03/29/23 15:59	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	798		30 - 110	03/20/23 13:66	03/29/23 15:59	1
Y Carrier	708		30 - 110	03/20/23 13:66	03/29/23 15:59	1

Lab Sample ID: LCS 160-604379/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 605413 **Prep Batch: 604379**

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Bhot Helium-90			7.35	7.805		0.32C	3.00	0.323	Uiesr	101	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	458		30 - 110
Y Carrier	7/8		30 - 110

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-605397/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 606179 **Prep Batch: 605397**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tcelium	C1.53	4	151	151	500	263	Uiesr	03/29/23 11:02	08/08/23 16:05	1

Method: 906.0 - Tritium, Total (LSC) (Continued)

Lab Sample ID: LCS 160-605397/2-A
Matrix: Water
Analysis Batch: 606179

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605397

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2090	1788		317	500	251	Units	C3	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605724/1-A
Matrix: Water
Analysis Batch: 606117

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605724

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tohyi 4 cyt eum	0P03189	4	0P0C996	0P09003	1P00	0P18C	Units	03S30S23 15:31	08S08S23 20:80	1

Lab Sample ID: LCS 160-605724/2-A
Matrix: Water
Analysis Batch: 606357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605724

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
4 cyt eum-238	12P7	13P25		1P55	1P00	0P113	Units	108	75 - 125
4 cyt eum-23C	13P0	13P61		1P5C	1P00	0P123	Units	105	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-636	*968*		*30 - 110*

Lab Sample ID: MB 160-605729/1-A
Matrix: Water
Analysis Batch: 605912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605729

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Deppoivnr 4 cyt eum	0P16C6	4	0P206	0P207	1P00	0P300	Units	03S30S23 16:38	08S03S23 20:56	1

Lab Sample ID: LCS 160-605729/2-A
Matrix: Water
Analysis Batch: 605927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605729

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
4 cyt eum-238	12P7	13P57		1P9C	1P00	0P356	Units	107	75 - 125
4 cyt eum-23C	13P0	13P66		1P99	1P00	0P311	Units	105	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-636	*348*		*30 - 110*

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Prep Batch: 602356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	PrecSep-21	
MB 160-602356/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-602356/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-602356/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 602360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	PrecSep_0	
MB 160-602360/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-602360/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-602360/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Filtration Batch: 602821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	Filtration	
570-129045-1	EPBLLC_20230226	Dissolved	Water	Filtration	

Prep Batch: 603033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	PrecSep-7	
MB 160-603033/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-603033/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-603033/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 603854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	PrecSep-21	602821
MB 160-603854/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-603854/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-603854/25-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 603857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	PrecSep_0	602821
MB 160-603857/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-603857/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-603857/25-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 604032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	Fill_Geo-0	
MB 160-604032/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604032/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 604379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	PrecSep-7	602821
MB 160-604379/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-604379/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Rad

Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	Fill_Geo-0	602821
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	LSC_Dist_Susp	
MB 160-605397/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-605397/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 605627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	Evaporation	
MB 160-605627/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-605627/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-605627/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 605724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Total/NA	Water	ExtChrom	
MB 160-605724/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605724/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 605729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	ExtChrom	602821
MB 160-605729/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605729/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129045-1	EPBLLC_20230226	Dissolved	Water	Evaporation	602821
MB 160-606326/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606326/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606326/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124065-3

Client Sample ID: EPBLLC_20230226

Date Collected: 02/26/23 10:30
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129045-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Divvolmed	Filtration	Filtration			1400 p L	1400 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	Ema8oration			51.15 p L	1.0 g	s0sT2s	06/0s/2T 10:23	MS9	EE9 SL
Divvolmed	Analyviv	400.0		1			s0sss3	06/10/2T 20:64	FLC	EE9 SL
	Invtrup ent ID: GFPCPURPLE									
9otal/NA	Pre8	Ema8oration			16.55 p L	1.0 g	s05s27	0T/T0/2T 11:T6	MS9	EE9 SL
9otal/NA	Analyviv	400.0		1	1.0 p L	1.0 p L	s0s12T	06/06/2T 1T:0s	FLC	EE9 SL
	Invtrup ent ID: GFPCBLUE									
Divvolmed	Filtration	Filtration			1400 p L	1400 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	Fill_Geo-0			1000 p L	1.0 g	s067T5	0T/22/2T 1s:2s	SEH	EE9 SL
Divvolmed	Analyviv	401.1		1			s05s05	0T/T0/2T 05:T3	CAH	EE9 SL
	Invtrup ent ID: GAMMAVISION									
9otal/NA	Pre8	Fill_Geo-0			1000 p L	1.0 g	s060T2	0T/17/2T 16:03	SEH	EE9 SL
9otal/NA	Analyviv	401.1		1			s05204	0T/23/2T 21:5T	CAH	EE9 SL
	Invtrup ent ID: GAMMAVISION									
Divvolmed	Filtration	Filtration			T300 p L	T300 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	PrecSe8-21			763.sT p L	1.0 g	s0T356	0T/1s/2T 07:53	DJP	EE9 SL
Divvolmed	Analyviv	40T.0		1	1.0 p L	1.0 p L	s0s537	06/07/2T 10:65	FLC	EE9 SL
	Invtrup ent ID: GFPCBLUE									
9otal/NA	Pre8	PrecSe8-21			26s.34 p L	1.0 g	s02T5s	0T/0s/2T 04:11	DJP	EE9 SL
9otal/NA	Analyviv	40T.0		1			s05612	0T/24/2T 21:54	FLC	EE9 SL
	Invtrup ent ID: GFPCPURPLE									
Divvolmed	Filtration	Filtration			T300 p L	T300 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	PrecSe8_0			763.sT p L	1.0 g	s0T357	0T/1s/2T 04:65	DJP	EE9 SL
Divvolmed	Analyviv	406.0		1			s05s2T	0T/T0/2T 12:0s	FLC	EE9 SL
	Invtrup ent ID: GFPCRED									
9otal/NA	Pre8	PrecSe8_0			26s.34 p L	1.0 g	s02Ts0	0T/0s/2T 04:63	DJP	EE9 SL
9otal/NA	Analyviv	406.0		1			s0T370	0T/1s/2T 12:15	FLC	EE9 SL
	Invtrup ent ID: GFPCBLUE									
Divvolmed	Filtration	Filtration			1400 p L	1400 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	PrecSe8-7			50s.s3 p L	1.0 g	s06T74	0T/20/2T 1T:22	DJP	EE9 SL
Divvolmed	Analyviv	405		1			s0561T	0T/24/2T 1s:02	FLC	EE9 SL
	Invtrup ent ID: GFPCBLUE									
9otal/NA	Pre8	PrecSe8-7			503.37 p L	1.0 g	s0T0TT	0T/04/2T 1T:0T	DJP	EE9 SL
9otal/NA	Analyviv	405		1			s060T0	0T/17/2T 13:TT	FLC	EE9 SL
	Invtrup ent ID: GFPCBLUE									
9otal/NA	Pre8	LSC_Divt_Suv8			43.05 p L	1.0 g	s05T47	0T/24/2T 11:02	SEH	EE9 SL
9otal/NA	Analyviv	40s.0		1			s0s174	06/06/2T 17:53	REV	EE9 SL
	Invtrup ent ID: LSCAQUA									
Divvolmed	Filtration	Filtration			1400 p L	1400 p L	s02321	0T/03/2T 10:5T	SRE	EE9 SL
Divvolmed	Pre8	ExtChrop			T01.4 p L	1.0 p L	s05724	0T/T0/2T 1s:T6	CMM	EE9 SL
Divvolmed	Analyviv	A-01-R		1			s05460	06/0T/2T 20:5s	FLC	EE9 SL
	Invtrup ent ID: ALPHAVISION									
9otal/NA	Pre8	ExtChrop			103.0 p L	1.0 p L	s05726	0T/T0/2T 15:T1	CMM	EE9 SL
9otal/NA	Analyviv	A-01-R		1			s0s10T	06/06/2T 20:60	EJS	EE9 SL
	Invtrup ent ID: ALPHAVISION									

Client: Haley & Aldrich, Inc.
Job ID: 570-124065-3
Project/Site: Boeing SSFL ISRA and BMP

Laboratory References:

EE9 SL = Eurofinv St. Louiv, 1T715 Rider 9rail North, Earth City, MO sT065, 9EL (T16)243-35ss

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129045-8
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129045-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129045-1	EPBLLC_20230226	Water	02/26/23 10:30	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129045

570-129045 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Trifluralin (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn, Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 113, Freon 123A, Cyclohexane, cis-1 2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
FBLLC_20230226	2/26/23	1030	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
FB_20230226-1	2/26/23	1030	TB	WM	3	N	N														x				
																									EDBPJOVX
																									Time of Readings 1030
																									DO (mg/L) 8.37
																									pH 6.51
																									Temp (°C/°F) 50.9
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1205
								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____	
Relinquished by:	Company:	Date/Time: 2/27/23 1720	Received by: EC
Relinquished by: EC	Company:	Date/Time: 2/27/23 1800	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: 2/27/23 1800

Date/Time: 2/27/23 1720
Date/Time:
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.3/2.2/1.8/1.7 SC12

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4/12/2023

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program. ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number: 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE(E624) Weck Labs in Industry, CA	TPH gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Industry, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs, Inc. Mira Loma, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs In Industry CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs, Inc. Orange, CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBLLC_20230226	2/26/23	1030	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1030	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023/1120	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received:	2/27/23	Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

4/12/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 Dissolved	903.0/PrecSep_21 (MOD) Radium-226 Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	12/28/23 1018	EC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-8
Address: 13715 Rider Trail North,	Due Date Requested: 3/30/2023			Preservation Codes:
City: Earth City	TAT Requested (days):			A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)
State, Zip: MO 63045				Other:
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 Dissolved	904.0/PrecSep_0 (MOD) Radium-228 Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL, DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		02/28/23 9:34	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/12/2023

ICOC No:
570-208625

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208653.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program California		Job #: 570-129045-4
Address: 880 Riverside Parkway	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		2/28/23 1402				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208500.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)	Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:											
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X			7	See Attached Instructions
TB_20230226-2 (570-129045-3)	2/26/23	10:30 Pacific		Water			X						2	See Attached Instructions
							(4)	(2)	(2)	(1)				# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3/1/23 15:40	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - IR Gun

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PrecSep_21 (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	FED EX	2/28/23 10:18	EC	FED EX		
2	Relinquished by:	Date/Time:	Company	Received by: Siena Worthington	MAR 01 2023 0900	ETA-SN
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208625.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129045-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPBLLC_20230226 (570-129045-1)	2/26/23	10:30 Pacific		Water			X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	FED EX	02/28/23 9:34	FEC	FED EX		
2	FED EX			Sierra Worthington	MAR 0 1 2023 0900	EMSL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129045-8

Login Number: 129045
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129045-8

Login Number: 129045
List Number: 4
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 03/02/23 12:00 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/16/2023 6:56:51 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129046-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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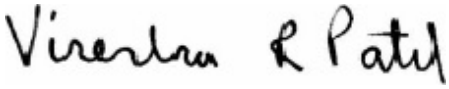
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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3/16/2023 6:56:51 AM

Authorized for release by
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Qualifiers

GC/MS mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Sep i mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits
LR	LCS/LCSD recovery below method control limits

HPLC/IC

Qualifier	Qualifier DesAriction
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier DesAriction
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chep istry

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive

Glossary (Continued)

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129046-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129046-1

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

GC/MS VOA
Method 624.1: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 570-307642 recovered outside control limits for the following analyte: Ethanol Laboratory control sample / laboratory control sample duplicate (LCS/LCSD) percent recovery is in control for affected analytes.

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: TB_20230226-1 (570-129046-2). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-307642.

Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-307594.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-307149 and analytical batch 570-307279 recovered outside control limits for the following analytes: 2,4-Dinitrotoluene, 4,6-Dinitro-2-methylphenol, Di-n-octyl phthalate and Di-n-butyl phthalate. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-307608 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: EPBBC_20230226 (570-129046-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following sample was received and analyzed outside of holding time: EPBBC_20230226 (570-129046-1).

Method 218.6: The following samples were received, filtered, preserved and analyzed outside of holding time: EPBBC_20230226 (570-129046-1) and (570-129045-T-1-A).

Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-307135 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Sulfate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 300.0: Dilutions were performed for the following samples due to sample matrix properties: EPBBC_20230226 (570-129046-1).

Job ID: 570-129046-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 300.0: Dilutions were performed for the following samples due to sample matrix properties: EPBBC_20230226 (570-129046-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-307628 and analytical batch 570-307918 contained Chromium and Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-308039 and analytical batch 570-308100 were outside control limits for Antimony. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 200.8: The method blank for preparation batch 570-308039 and analytical batch 570-308100 contained Chromium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBBC_20230226 (570-129046-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBBC_20230226 (570-129046-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: Insufficient sample volume was available to perform sample duplicate (DUP) associated with analytical batch 570-307843.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-308455.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Client Sample ID: EPBBC_20230226 — Lab Sample ID: 570-129046-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.057	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.057	J,DX BU	0.20	0.019	ug/L	1		218.6	Dissolved
Chloride	38		5.0	1.8	mg/L	5		300.0	Total/NA
Nitrate as N	2.6		0.50	0.098	mg/L	5		300.0	Total/NA
Sulfate	77		5.0	1.2	mg/L	5		300.0	Total/NA
Nitrate Nitrite as N	2.6		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	170	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	160	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Aluminum	1500		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	1.9		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	51		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	3.1	MB	2.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	4.2		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	2100	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	70		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	3.7		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	1.9		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	0.44	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Zinc	12	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	0.75	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Cobalt	1.0		1.0	0.14	ug/L	1		200.8	Total Recoverable
Aluminum	67	BU	15	8.6	ug/L	1		200.8	Dissolved
Arsenic	1.4	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	35	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.35	J,DX BU MB	2.0	0.14	ug/L	1		200.8	Dissolved
Copper	2.3	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	76	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	3.1	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.4	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	0.85	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	0.76	J,DX BU	2.0	0.52	ug/L	1		200.8	Dissolved
Cobalt	0.19	J,DX BU	1.0	0.14	ug/L	1		200.8	Dissolved
HEM (Oil & Grease)	0.61	J,DX	1.0	0.52	mg/L	1		1664A	Total/NA
Cr (III)	0.0030	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Turbidity	1000		0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	580		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	1600		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	51		2.0	1.7	mg/L	1		SM 2540D	Total/NA
Carbon, Total Organic	12		2.0	1.1	mg/L	4		SM 5310D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample ID: EPBBC_20230226 (Continued)
Lab Sample ID: 570-129046-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
MBAS	0.074	J,DX	0.20	0.050	mg/L	1		SM 5540C	Total/NA
Clay (less than 0.00391 mm)	26.32		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	0.03		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	69.58		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	95.90		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	4.07		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: TB_20230226-1
Lab Sample ID: 570-129046-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 18:16	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 18:16	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 18:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 18:16	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 18:16	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 18:16	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 18:16	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 18:16	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 18:16	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 18:16	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 18:16	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 18:16	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 18:16	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 18:16	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 18:16	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 18:16	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 18:16	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 18:16	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 18:16	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 18:16	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 18:16	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 18:16	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 18:16	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 18:16	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 18:16	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 18:16	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 18:16	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 18:16	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 18:16	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 18:16	1
Acetone	ND		20	16	ug/L			02/28/23 18:16	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 18:16	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 18:16	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 18:16	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 18:16	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 18:16	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 18:16	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 18:16	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 18:16	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 18:16	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 18:16	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 18:16	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 18:16	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 18:16	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 18:16	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 18:16	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 18:16	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 18:16	1
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 18:16	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 18:16	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 18:16	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 18:16	1
Ethanol	ND	BA	100	65	ug/L			02/28/23 18:16	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 18:16	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 18:16	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 18:16	1
Isopropanol	ND		250	120	ug/L			02/28/23 18:16	1
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 18:16	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 18:16	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 18:16	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 18:16	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 18:16	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 18:16	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 18:16	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 18:16	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 18:16	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 18:16	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 18:16	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 18:16	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 18:16	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 18:16	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 18:16	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 18:16	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 18:16	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 18:16	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 18:16	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 18:16	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 18:16	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 18:16	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 18:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*60 - 140*		*02/28/23 18:16*	*1*
4-Bromofluorobenzene (Surr)	*92*		*60 - 140*		*02/28/23 18:16*	*1*
Dibromofluoromethane (Surr)	*91*		*60 - 140*		*02/28/23 18:16*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*02/28/23 18:16*	*1*

Client Sample ID: TB_20230226-1
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 16:26	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 16:26	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 16:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 16:26	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 16:26	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 16:26	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 16:26	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 16:26	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB_20230226-1
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 16:26	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 16:26	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 16:26	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 16:26	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 16:26	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 16:26	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 16:26	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 16:26	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 16:26	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 16:26	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 16:26	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 16:26	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 16:26	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 16:26	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 16:26	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 16:26	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 16:26	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 16:26	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 16:26	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 16:26	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 16:26	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 16:26	1
Acetone	ND		20	16	ug/L			02/28/23 16:26	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 16:26	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 16:26	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 16:26	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 16:26	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 16:26	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 16:26	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 16:26	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 16:26	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 16:26	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 16:26	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 16:26	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 16:26	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 16:26	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 16:26	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 16:26	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 16:26	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 16:26	1
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 16:26	1
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 16:26	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 16:26	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 16:26	1
Ethanol	ND	BA	100	65	ug/L			02/28/23 16:26	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 16:26	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 16:26	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 16:26	1
Isopropanol	ND		250	120	ug/L			02/28/23 16:26	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB_20230226-1
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 16:26	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 16:26	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 16:26	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 16:26	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 16:26	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 16:26	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 16:26	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 16:26	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 16:26	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 16:26	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 16:26	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 16:26	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 16:26	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 16:26	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 16:26	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 16:26	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 16:26	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 16:26	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 16:26	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 16:26	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 16:26	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 16:26	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 16:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*60 - 140*		*02/28/23 16:26*	*1*
4-Bromofluorobenzene (Surr)	*93*		*60 - 140*		*02/28/23 16:26*	*1*
Dibromofluoromethane (Surr)	*95*		*60 - 140*		*02/28/23 16:26*	*1*
Toluene-d8 (Surr)	*96*		*60 - 140*		*02/28/23 16:26*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			02/28/23 19:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*103*		*67 - 133*		*02/28/23 19:01*	*1*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND	LR	0.20	0.13	ug/L		02/28/23 05:19	02/28/23 17:36	1
1,2-Dichlorobenzene	ND		0.20	0.12	ug/L		02/28/23 05:19	02/28/23 17:36	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.093	ug/L		02/28/23 05:19	02/28/23 17:36	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		02/28/23 05:19	02/28/23 17:36	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		02/28/23 05:19	02/28/23 17:36	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		02/28/23 05:19	02/28/23 17:36	1
Bis(2-ethylhexyl) phthalate	ND		5.1	3.7	ug/L		02/28/23 05:19	02/28/23 17:36	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		02/28/23 05:19	02/28/23 17:36	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 17:36	1
2,4-Dinitrophenol	ND		5.1	4.4	ug/L		02/28/23 05:19	02/28/23 17:36	1
2,4-Dinitrotoluene	ND	LQ	0.20	0.12	ug/L		02/28/23 05:19	02/28/23 17:36	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		02/28/23 05:19	02/28/23 17:36	1
2-Chloronaphthalene	ND	BA	0.20	0.15	ug/L		02/28/23 05:19	02/28/23 17:36	1
2-Chlorophenol	ND		0.20	0.098	ug/L		02/28/23 05:19	02/28/23 17:36	1
2-Nitrophenol	ND		5.1	3.6	ug/L		02/28/23 05:19	02/28/23 17:36	1
3,3'-Dichlorobenzidine	ND		5.1	3.1	ug/L		02/28/23 05:19	02/28/23 17:36	1
4,6-Dinitro-2-methylphenol	ND	LQ	5.1	4.6	ug/L		02/28/23 05:19	02/28/23 17:36	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		02/28/23 05:19	02/28/23 17:36	1
4-Chloro-3-methylphenol	ND		1.0	0.14	ug/L		02/28/23 05:19	02/28/23 17:36	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		02/28/23 05:19	02/28/23 17:36	1
4-Nitrophenol	ND		5.1	3.5	ug/L		02/28/23 05:19	02/28/23 17:36	1
Acenaphthene	ND		0.20	0.10	ug/L		02/28/23 05:19	02/28/23 17:36	1
Acenaphthylene	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 17:36	1
Anthracene	ND		0.20	0.086	ug/L		02/28/23 05:19	02/28/23 17:36	1
Benzidine	ND	BA	5.1	2.8	ug/L		02/28/23 05:19	02/28/23 17:36	1
Benzo[a]anthracene	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 17:36	1
Benzo[a]pyrene	ND		0.20	0.16	ug/L		02/28/23 05:19	02/28/23 17:36	1
Benzo[b]fluoranthene	ND		0.20	0.12	ug/L		02/28/23 05:19	02/28/23 17:36	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 17:36	1
Benzo[k]fluoranthene	ND		0.20	0.12	ug/L		02/28/23 05:19	02/28/23 17:36	1
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 17:36	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 17:36	1
Bis(2-chloroethyl)ether	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 17:36	1
Bis(2-ethylhexyl) phthalate	ND		5.1	3.7	ug/L		02/28/23 05:19	02/28/23 17:36	1
Butyl benzyl phthalate	ND		1.0	0.69	ug/L		02/28/23 05:19	02/28/23 17:36	1
Chrysene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 17:36	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		02/28/23 05:19	02/28/23 17:36	1
Diethyl phthalate	ND		2.0	0.19	ug/L		02/28/23 05:19	02/28/23 17:36	1
Dimethyl phthalate	ND		2.0	0.10	ug/L		02/28/23 05:19	02/28/23 17:36	1
Di-n-butyl phthalate	ND	LQ	2.0	1.9	ug/L		02/28/23 05:19	02/28/23 17:36	1
Di-n-octyl phthalate	ND	LQ	3.1	0.55	ug/L		02/28/23 05:19	02/28/23 17:36	1
Fluoranthene	ND		0.20	0.10	ug/L		02/28/23 05:19	02/28/23 17:36	1
Fluorene	ND		0.20	0.097	ug/L		02/28/23 05:19	02/28/23 17:36	1
Hexachlorobenzene	ND		0.20	0.14	ug/L		02/28/23 05:19	02/28/23 17:36	1
Hexachlorobutadiene	ND		0.20	0.16	ug/L		02/28/23 05:19	02/28/23 17:36	1
Hexachlorocyclopentadiene	ND		0.20	0.16	ug/L		02/28/23 05:19	02/28/23 17:36	1
Hexachloroethane	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 17:36	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		02/28/23 05:19	02/28/23 17:36	1
Isophorone	ND		0.20	0.10	ug/L		02/28/23 05:19	02/28/23 17:36	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 17:36	1
Nitrobenzene	ND		0.20	0.15	ug/L		02/28/23 05:19	02/28/23 17:36	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		02/28/23 05:19	02/28/23 17:36	1
N-Nitrosodi-n-propylamine	ND		0.20	0.15	ug/L		02/28/23 05:19	02/28/23 17:36	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		02/28/23 05:19	02/28/23 17:36	1
Pentachlorophenol	ND		1.0	0.87	ug/L		02/28/23 05:19	02/28/23 17:36	1
Phenanthrene	ND		0.20	0.17	ug/L		02/28/23 05:19	02/28/23 17:36	1
Phenol	ND		1.0	0.54	ug/L		02/28/23 05:19	02/28/23 17:36	1
Pyrene	ND		0.20	0.088	ug/L		02/28/23 05:19	02/28/23 17:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*83*		*28 - 127*	*02/28/23 05:19*	*02/28/23 17:36*	*1*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*	*02/28/23 05:19*	*02/28/23 17:36*	*1*
2-Fluorophenol (Surr)	*39*		*17 - 120*	*02/28/23 05:19*	*02/28/23 17:36*	*1*
Nitrobenzene-d5 (Surr)	*76*		*27 - 120*	*02/28/23 05:19*	*02/28/23 17:36*	*1*
Phenol-d6 (Surr)	*27*		*10 - 120*	*02/28/23 05:19*	*02/28/23 17:36*	*1*
2,4,6-Tribromophenol	*83*		*28 - 127*	*02/28/23 05:19*	*02/28/23 17:36*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*02/28/23 05:19*	*02/28/23 17:36*	*1*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*	*02/28/23 05:19*	*02/28/23 17:36*	*1*
2-Fluorophenol	*39*		*17 - 120*	*02/28/23 05:19*	*02/28/23 17:36*	*1*
Nitrobenzene-d5	*76*		*27 - 120*	*02/28/23 05:19*	*02/28/23 17:36*	*1*
Phenol-d6 (Surr)	*27*		*10 - 120*	*02/28/23 05:19*	*02/28/23 17:36*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*02/28/23 05:19*	*02/28/23 17:36*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/07/23 21:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*80*		*20 - 144*		*03/07/23 21:55*	*1*

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.048	0.035	mg/L		03/03/23 17:08	03/13/23 17:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*92*		*53 - 151*	*03/03/23 17:08*	*03/13/23 17:06*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.057	J,DX BU BV	0.20	0.019	ug/L			02/28/23 03:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.057	J,DX BU	0.20	0.019	ug/L			02/28/23 06:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**38**		5.0	1.8	mg/L			02/28/23 01:18	5
Nitrite as N	ND		0.50	0.22	mg/L			02/28/23 01:18	5
Fluoride	ND		0.50	0.23	mg/L			02/28/23 01:18	5
Nitrate as N	**2.6**		0.50	0.098	mg/L			02/28/23 01:18	5
Sulfate	**77**		5.0	1.2	mg/L			02/28/23 01:18	5

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/28/23 23:37	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	2.6		0.10	0.020	mg/L			03/03/23 14:06	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	170	J,DX	500	3.5	ug/L		02/28/23 08:01	02/28/23 20:22	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	160	J,DX BU	500	3.5	ug/L			02/28/23 23:49	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1500**		15	8.6	ug/L		02/28/23 10:21	02/28/23 14:34	1
Silver	ND		1.0	0.23	ug/L		02/28/23 10:21	02/28/23 14:34	1
Arsenic	**1.9**		1.0	0.16	ug/L		02/28/23 10:21	02/28/23 14:34	1
Barium	**51**		1.0	0.17	ug/L		02/28/23 10:21	02/28/23 14:34	1
Beryllium	ND		0.50	0.26	ug/L		02/28/23 10:21	02/28/23 14:34	1
Cadmium	ND		1.0	0.13	ug/L		02/28/23 10:21	02/28/23 14:34	1
Chromium	**3.1**	**MB**	2.0	0.14	ug/L		02/28/23 10:21	02/28/23 14:34	1
Copper	**4.2**		2.0	0.32	ug/L		02/28/23 10:21	02/28/23 14:34	1
Iron	**2100**	**MB**	20	3.7	ug/L		02/28/23 10:21	02/28/23 14:34	1
Manganese	**70**		1.0	0.41	ug/L		02/28/23 10:21	02/28/23 14:34	1
Nickel	**3.7**		2.0	0.17	ug/L		02/28/23 10:21	02/28/23 14:34	1
Lead	**1.9**		1.0	0.12	ug/L		02/28/23 10:21	02/28/23 14:34	1
Antimony	**0.44**	**J,DX**	2.0	0.36	ug/L		02/28/23 10:21	02/28/23 14:34	1
Zinc	**12**	**J,DX**	20	2.8	ug/L		02/28/23 10:21	02/28/23 14:34	1
Selenium	**0.75**	**J,DX**	2.0	0.52	ug/L		02/28/23 10:21	02/28/23 14:34	1
Thallium	ND		1.0	0.11	ug/L		02/28/23 10:21	02/28/23 14:34	1
Cobalt	**1.0**		1.0	0.14	ug/L		02/28/23 10:21	02/28/23 14:34	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**67**	**BU**	15	8.6	ug/L			03/01/23 14:45	1
Silver	ND	BU	1.0	0.23	ug/L			03/01/23 14:45	1
Arsenic	**1.4**	**BU**	1.0	0.16	ug/L			03/01/23 14:45	1
Barium	**35**	**BU**	1.0	0.17	ug/L			03/01/23 14:45	1
Beryllium	ND	BU	0.50	0.26	ug/L			03/01/23 14:45	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/01/23 14:45	1
Chromium	**0.35**	**J,DX BU MB**	2.0	0.14	ug/L			03/01/23 14:45	1
Copper	**2.3**	**BU**	2.0	0.32	ug/L			03/01/23 14:45	1
Iron	**76**	**BU**	20	3.7	ug/L			03/01/23 14:45	1
Manganese	**3.1**	**BU**	1.0	0.41	ug/L			03/01/23 14:45	1
Nickel	**1.4**	**J,DX BU**	2.0	0.17	ug/L			03/01/23 14:45	1
Lead	ND	BU	1.0	0.12	ug/L			03/01/23 14:45	1
Antimony	**0.85**	**J,DX BU**	2.0	0.36	ug/L			03/01/23 14:45	1
Zinc	ND	BU	20	2.8	ug/L			03/01/23 14:45	1
Selenium	**0.76**	**J,DX BU**	2.0	0.52	ug/L			03/01/23 14:45	1
Cobalt	**0.19**	**J,DX BU**	1.0	0.14	ug/L			03/01/23 14:45	1
Thallium	ND	BU	1.0	0.11	ug/L			03/01/23 14:45	1

General Chemistry

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	**0.61**	**J,DX**	1.0	0.52	mg/L		03/02/23 13:33	03/02/23 19:57	1
Cr (III) (EPA 218.6 CR3)	**0.0030**	**J,DX**	0.050	0.0030	mg/L			03/06/23 11:03	1
Ammonia (EPA 350.1)	ND		0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:55	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/03/23 20:26	1
Turbidity (SM 2130B)	**1000**		0.05	0.05	NTU			02/27/23 23:10	1
Total Dissolved Solids (SM 2540C)	**1600**		10	8.7	mg/L			03/02/23 16:27	1
Total Suspended Solids (SM 2540D)	**51**		2.0	1.7	mg/L			03/03/23 18:43	1
Carbon, Total Organic (SM 5310D)	**12**		2.0	1.1	mg/L			03/08/23 22:30	4
MBAS (SM 5540C)	**0.074**	**J,DX**	0.20	0.050	mg/L		02/27/23 20:28	02/27/23 22:00	1
Biochemical Oxygen Demand (SM5210B)	ND		2.0	1.0	mg/L			02/27/23 21:47	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**580**		1.0	1.0	umhos/cm			03/13/23 23:57	1
Settleable Solids (SM 2540F)	ND		0.10	0.10	mL/L			02/27/23 20:30	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

General Chemistry - Dissolved

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			03/06/23 11:03	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**26.32**		0.01	0.01	%			03/14/23 15:05	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/14/23 15:05	1
Fine Sand (0.125 to 0.25mm)	**0.03**		0.01	0.01	%			03/14/23 15:05	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/14/23 15:05	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/14/23 15:05	1
Silt (0.00391 to 0.0625mm)	**69.58**		0.01	0.01	%			03/14/23 15:05	1
Total Silt and Clay (0 to 0.0626mm)	**95.90**		0.01	0.01	%			03/14/23 15:05	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/14/23 15:05	1
Very Fine Sand (0.0625 to 0.125 mm)	**4.07**		0.01	0.01	%			03/14/23 15:05	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

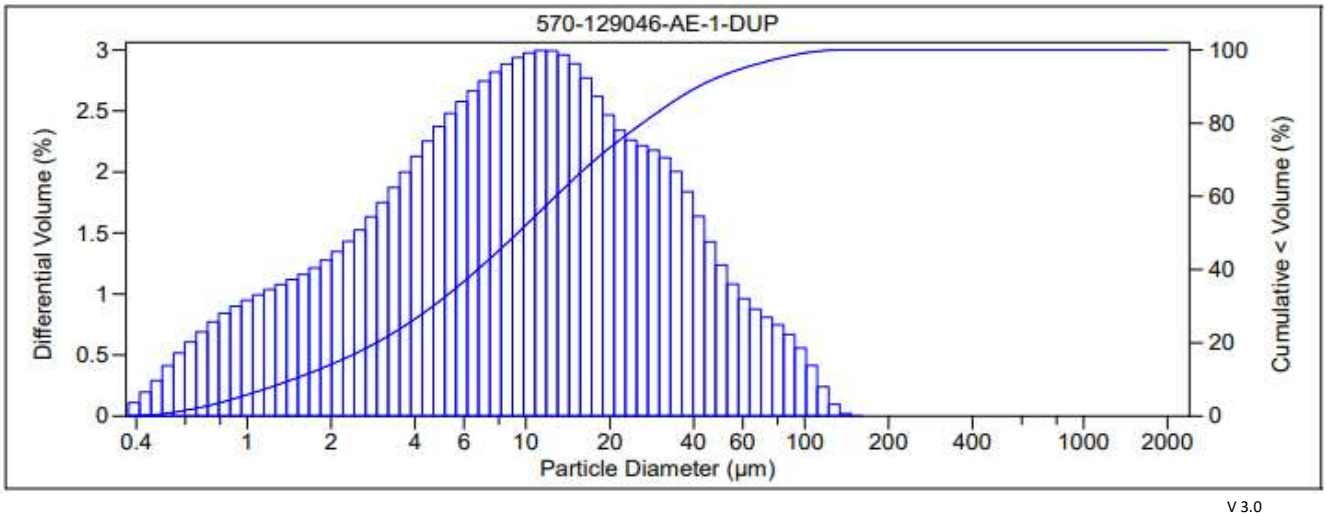
Haley & Aldrich, Inc.

Date Sampled:	02/26/23
Date Received:	02/27/23
Work Order No:	570-129046
Date Analyzed:	03/14/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230226		NA	0.017

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.09	4.50	69.41	26.00	95.41



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

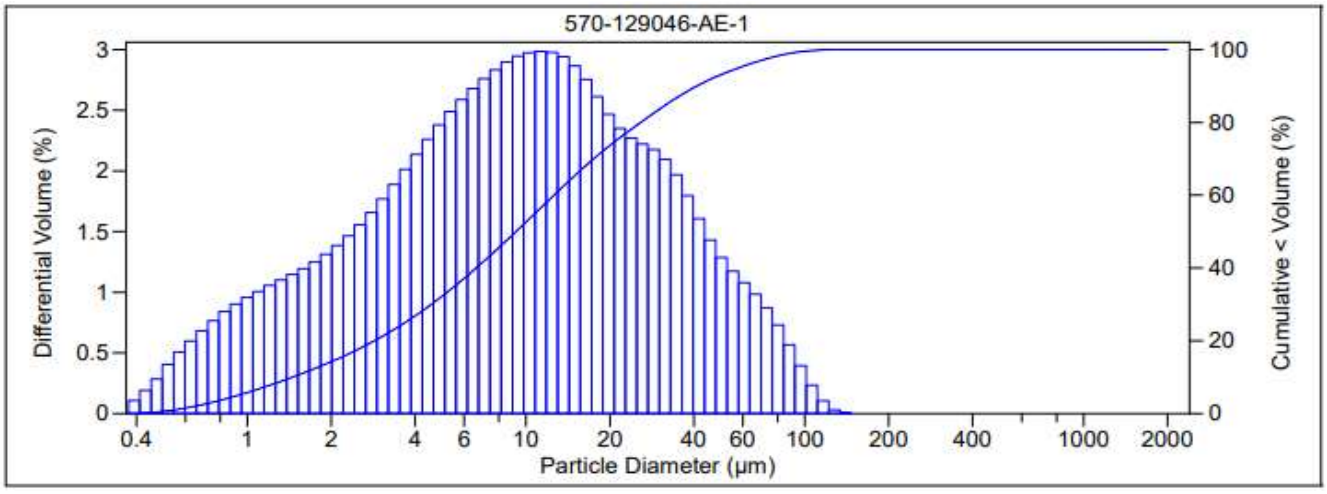
Haley & Aldrich, Inc.

Date Sampled:	02/26/23
Date Received:	02/27/23
Work Order No:	570-129046
Date Analyzed:	03/14/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230226		NA	0.016

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.03	4.07	69.58	26.32	95.90



V 3.0

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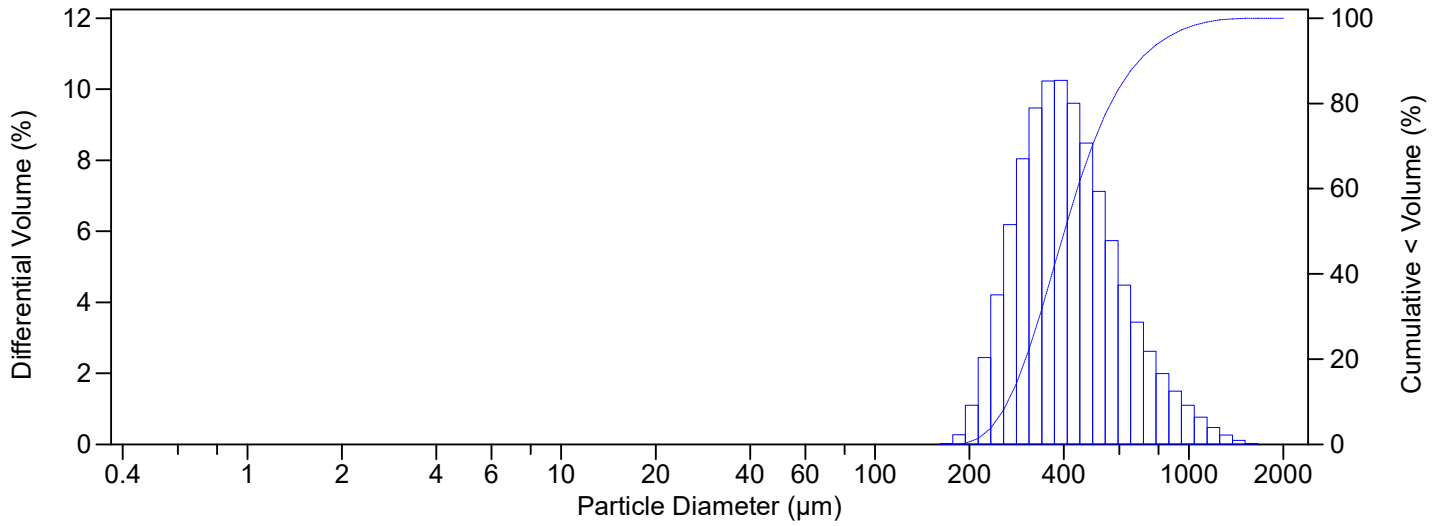
	STD SAND_14 Mar 2023_15.23.15.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	6		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.73%		
LS 13 320	Aqueous Liquid Module		
Start time:	15:22 14 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_14 Mar 2023_15.23.15.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	448.8 µm	S.D.:	189.4 µm
Median:	401.6 µm	Variance:	35886 µm^2
Mean/Median ratio:	1.117	Skewness:	1.667 Right skewed
Mode:	391.0 µm	Kurtosis:	3.705 Leptokurtic

d_{10}: 264.8 µm d_{50}: 401.6 µm d_{90}: 696.1 µm

Folk and Ward Statistics (Phi)

Mean:	1.28	Median:	1.32	Deviation:	0.54
Skewness:	-0.14	Kurtosis:	1.02		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
240.4 µm	288.1 µm	318.3 µm	366.7 µm	401.6 µm	525.3 µm	605.4 µm	835.4 µm

Particle Diameter µm	STD SAND _14 Mar 2023_15.23 .15.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.78
250	64.5
500	26.6
1000	2.14
2000	

STD SAND_14 Mar 2023_15.23.15.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.48
0.412	0	22.73	0	1255	0.27
0.452	0	24.95	0	1377	0.12
0.496	0	27.39	0	1512	0.026
0.545	0	30.07	0	1660	0.0014
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.017		
3.206	0	176.9	0.27		
3.519	0	194.2	1.10		
3.863	0	213.2	2.45		
4.241	0	234.1	4.21		
4.656	0	256.9	6.19		
5.111	0	282.1	8.05		
5.611	0	309.6	9.47		
6.159	0	339.9	10.2		
6.761	0	373.1	10.3		
7.422	0	409.6	9.61		
8.148	0	449.7	8.48		
8.944	0	493.6	7.12		
9.819	0	541.9	5.74		
10.78	0	594.9	4.48		
11.83	0	653.0	3.44		
12.99	0	716.9	2.62		
14.26	0	786.9	2.00		
15.65	0	863.9	1.50		
17.18	0	948.3	1.10		
18.86	0	1041	0.76		

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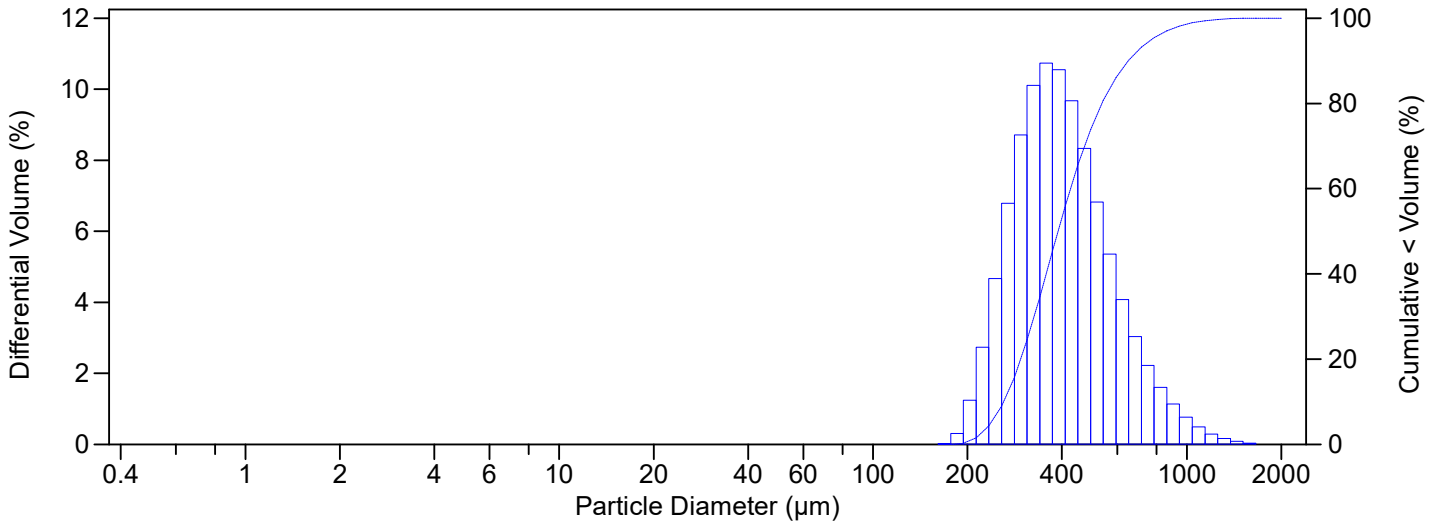
	STD SAND_14 Mar 2023_15.49.46.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	8		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.67%		
LS 13 320	Aqueous Liquid Module		
Start time:	15:48 14 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	11%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_14 Mar 2023_15.49.46.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	430.5 µm	S.D.:	174.0 µm
Median:	389.3 µm	Variance:	30293 µm^2
Mean/Median ratio:	1.106	Skewness:	1.746 Right skewed
Mode:	356.1 µm	Kurtosis:	4.555 Leptokurtic

d_{10}: 260.7 µm d_{50}: 389.3 µm d_{90}: 650.8 µm

Folk and Ward Statistics (Phi)

Mean:	1.33	Median:	1.36	Deviation:	0.51
Skewness:	-0.13	Kurtosis:	1.01		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
237.4 µm	282.8 µm	311.2 µm	356.6 µm	389.3 µm	501.4 µm	574.3 µm	773.8 µm

Particle Diameter µm	STD SAND _14 Mar 2023_15.49 .46.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.56
250	67.2
500	23.8
1000	1.41
2000	

STD SAND_14 Mar 2023_15.49.46.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.29
0.412	0	22.73	0	1255	0.16
0.452	0	24.95	0	1377	0.089
0.496	0	27.39	0	1512	0.031
0.545	0	30.07	0	1660	0.0027
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.019		
3.206	0	176.9	0.31		
3.519	0	194.2	1.24		
3.863	0	213.2	2.74		
4.241	0	234.1	4.67		
4.656	0	256.9	6.79		
5.111	0	282.1	8.72		
5.611	0	309.6	10.1		
6.159	0	339.9	10.7		
6.761	0	373.1	10.6		
7.422	0	409.6	9.67		
8.148	0	449.7	8.34		
8.944	0	493.6	6.82		
9.819	0	541.9	5.36		
10.78	0	594.9	4.08		
11.83	0	653.0	3.04		
12.99	0	716.9	2.23		
14.26	0	786.9	1.61		
15.65	0	863.9	1.13		
17.18	0	948.3	0.77		
18.86	0	1041	0.49		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-129046-1	EPBBC_20230226	90	92	91	99
570-129046-2	TB_20230226-1	90	93	95	96
LCS 570-307642/1003	Lab Control Sample	94	98	95	100
LCSD 570-307642/4	Lab Control Sample Dup	94	98	96	98
MB 570-307642/6	Method Blank	90	95	96	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		14DCBTN
Lab Sample ID	Client Sample ID	(67-133)
570-129046-1	EPBBC_20230226	103
LCS 570-307594/4	Lab Control Sample	95
LCSD 570-307594/5	Lab Control Sample Dup	99
MB 570-307594/7	Method Blank	101

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
		TBP	TBP	FBP	FBP	2FP	2FP	NBZ	NBZ
Lab Sample ID	Client Sample ID	(28-127)	(28-127)	(31-120)	(31-120)	(17-120)	(17-120)	(27-120)	(27-120)
570-129046-1	EPBBC_20230226	83	83	69	69	39	39	76	76

		Percent Surrogate Recovery (Acceptance Limits)			
		PHL6	PHL6	TPHd14	TPHd14
Lab Sample ID	Client Sample ID	(10-120)	(10-120)	(45-120)	(45-120)
570-129046-1	EPBBC_20230226	27	27	76	76

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TBP (28-127)	TBP (28-127)	FBP (31-120)	2FP (17-120)	2FP (17-120)	NBZ (27-120)	NBZ (27-120)	PHL6 (10-120)
LCS 570-307149/2-A	Lab Control Sample	107	107	84	48	48	76	76	34
LCSD 570-307149/3-A	Lab Control Sample Dup	95	95	69	44	44	66	66	31
MB 570-307149/1-A	Method Blank	81	81	60	42	42	68	68	29

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	TPHd14 (45-120)
LCS 570-307149/2-A	Lab Control Sample	106
LCSD 570-307149/3-A	Lab Control Sample Dup	86
MB 570-307149/1-A	Method Blank	78

Surrogate Legend

TBP = 2,4,6-Tribromophenol (Surr)
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BFB1 (20-144)
570-129046-1	EPBBC_20230226	80
LCS 570-309605/3	Lab Control Sample	87
LCSD 570-309605/4	Lab Control Sample Dup	86
MB 570-309605/5	Method Blank	64

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OTCSN1 (53-151)
570-129046-1	EPBBC_20230226	92
LCS 570-308878/2-A	Lab Control Sample	99
LCSD 570-308878/3-A	Lab Control Sample Dup	110
MB 570-308878/1-A	Method Blank	105

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-307642/6
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			02/28/23 12:54	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			02/28/23 12:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			02/28/23 12:54	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			02/28/23 12:54	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			02/28/23 12:54	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			02/28/23 12:54	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			02/28/23 12:54	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			02/28/23 12:54	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			02/28/23 12:54	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			02/28/23 12:54	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			02/28/23 12:54	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			02/28/23 12:54	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			02/28/23 12:54	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			02/28/23 12:54	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			02/28/23 12:54	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			02/28/23 12:54	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			02/28/23 12:54	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			02/28/23 12:54	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			02/28/23 12:54	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			02/28/23 12:54	1
2-Hexanone	ND		5.0	2.2	ug/L			02/28/23 12:54	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			02/28/23 12:54	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			02/28/23 12:54	1
Acetone	ND		20	16	ug/L			02/28/23 12:54	1
Acrolein	ND		5.0	4.6	ug/L			02/28/23 12:54	1
Acrylonitrile	ND		2.0	1.4	ug/L			02/28/23 12:54	1
Benzene	ND		0.50	0.28	ug/L			02/28/23 12:54	1
Bromobenzene	ND		0.50	0.23	ug/L			02/28/23 12:54	1
Bromochloromethane	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Bromodichloromethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Bromoform	ND		1.0	0.25	ug/L			02/28/23 12:54	1
Bromomethane	ND		0.50	0.22	ug/L			02/28/23 12:54	1
Carbon disulfide	ND		1.0	0.61	ug/L			02/28/23 12:54	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			02/28/23 12:54	1
Chlorobenzene	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Chloroethane	ND		1.0	0.29	ug/L			02/28/23 12:54	1
Chloroform	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Chloromethane	ND		0.50	0.30	ug/L			02/28/23 12:54	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			02/28/23 12:54	1
Cyclohexane	ND		2.0	0.79	ug/L			02/28/23 12:54	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-307642/6
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.15	ug/L			02/28/23 12:54	1
Dibromomethane	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			02/28/23 12:54	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Ethanol	ND		100	65	ug/L			02/28/23 12:54	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			02/28/23 12:54	1
Ethylbenzene	ND		0.50	0.25	ug/L			02/28/23 12:54	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Isopropanol	ND		250	120	ug/L			02/28/23 12:54	1
Isopropylbenzene	ND		0.50	0.16	ug/L			02/28/23 12:54	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			02/28/23 12:54	1
Methylene Chloride	ND		2.0	0.57	ug/L			02/28/23 12:54	1
Naphthalene	ND		1.0	0.33	ug/L			02/28/23 12:54	1
n-Butylbenzene	ND		1.0	0.22	ug/L			02/28/23 12:54	1
N-Propylbenzene	ND		0.50	0.30	ug/L			02/28/23 12:54	1
o-Xylene	ND		0.50	0.15	ug/L			02/28/23 12:54	1
m,p-Xylene	ND		1.0	0.17	ug/L			02/28/23 12:54	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			02/28/23 12:54	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			02/28/23 12:54	1
Styrene	ND		0.50	0.19	ug/L			02/28/23 12:54	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			02/28/23 12:54	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			02/28/23 12:54	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
Tetrachloroethene	ND		0.50	0.21	ug/L			02/28/23 12:54	1
Tetrahydrofuran	ND		10	6.8	ug/L			02/28/23 12:54	1
Toluene	ND		0.50	0.23	ug/L			02/28/23 12:54	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			02/28/23 12:54	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			02/28/23 12:54	1
Trichloroethene	ND		0.50	0.17	ug/L			02/28/23 12:54	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			02/28/23 12:54	1
Vinyl acetate	ND		4.0	3.1	ug/L			02/28/23 12:54	1
Vinyl chloride	ND		0.50	0.47	ug/L			02/28/23 12:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*90*		*60 - 140*		*02/28/23 12:54*	*1*
4-Bromofluorobenzene (Surr)	*95*		*60 - 140*		*02/28/23 12:54*	*1*
Dibromofluoromethane (Surr)	*96*		*60 - 140*		*02/28/23 12:54*	*1*
Toluene-d8 (Surr)	*99*		*60 - 140*		*02/28/23 12:54*	*1*

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.5		ug/L		105	60 - 140
1,1,1-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.1		ug/L		101	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.5		ug/L		115	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1-Dichloroethane	10.0	10.4		ug/L		104	70 - 130
1,1-Dichloroethene	10.0	10.8		ug/L		108	50 - 150
1,1-Dichloropropene	10.0	11.1		ug/L		111	60 - 140
1,2,3-Trichlorobenzene	10.0	11.1		ug/L		111	60 - 140
1,2,3-Trichloropropane	10.0	9.85		ug/L		99	60 - 140
1,2,4-Trichlorobenzene	10.0	10.9		ug/L		109	60 - 140
1,2,4-Trimethylbenzene	10.0	10.3		ug/L		103	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	9.21		ug/L		92	60 - 140
1,2-Dibromoethane	10.0	10.6		ug/L		106	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	11.0		ug/L		110	60 - 140
1,2-Dichlorobenzene	10.0	10.7		ug/L		107	65 - 135
1,2-Dichloroethane	10.0	9.48		ug/L		95	70 - 130
1,2-Dichloropropane	10.0	10.5		ug/L		105	35 - 165
1,3,5-Trimethylbenzene	10.0	10.8		ug/L		108	60 - 140
1,3-Dichlorobenzene	10.0	11.0		ug/L		110	70 - 130
1,3-Dichloropropane	10.0	10.8		ug/L		108	60 - 140
1,4-Dichlorobenzene	10.0	10.8		ug/L		108	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	11.2		ug/L		112	60 - 140
2,2-Dichloropropane	10.0	11.3		ug/L		113	60 - 140
2-Butanone (MEK)	10.0	9.16		ug/L		92	60 - 140
2-Chloroethyl vinyl ether	10.0	8.35		ug/L		83	1 - 225
2-Chlorotoluene	10.0	10.4		ug/L		104	60 - 140
2-Hexanone	10.0	9.57		ug/L		96	60 - 140
4-Chlorotoluene	10.0	10.3		ug/L		103	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	9.75		ug/L		98	60 - 140
Acetone	10.0	ND		ug/L		110	60 - 140
Acrolein	20.0	19.6		ug/L		98	60 - 140
Acrylonitrile	10.0	9.84		ug/L		98	60 - 140
Benzene	10.0	10.9		ug/L		109	65 - 135
Bromobenzene	10.0	10.9		ug/L		109	60 - 140
Bromochloromethane	10.0	10.8		ug/L		108	60 - 140
Bromodichloromethane	10.0	10.4		ug/L		104	65 - 135
Bromoform	10.0	11.1		ug/L		111	70 - 130
Bromomethane	10.0	9.20		ug/L		92	15 - 185
Carbon disulfide	10.0	11.7		ug/L		117	60 - 140
Carbon tetrachloride	10.0	10.7		ug/L		107	70 - 130
Chlorobenzene	10.0	10.9		ug/L		109	65 - 135
Chloroethane	10.0	11.4		ug/L		114	40 - 160
Chloroform	10.0	9.95		ug/L		99	70 - 135
Chloromethane	10.0	8.96		ug/L		90	1 - 205
cis-1,2-Dichloroethene	10.0	10.7		ug/L		107	60 - 140
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	25 - 175
Cyclohexane	10.0	11.5		ug/L		115	60 - 140
Dibromochloromethane	10.0	10.8		ug/L		108	70 - 135
Dibromomethane	10.0	10.2		ug/L		102	60 - 140
Dichlorodifluoromethane	10.0	10.6		ug/L		106	60 - 140
Di-isopropyl ether (DIPE)	10.0	10.3		ug/L		103	60 - 140
Ethanol	100	128		ug/L		128	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307642/1003
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	10.4		ug/L		104	60 - 140
Ethylbenzene	10.0	10.9		ug/L		109	60 - 140
Hexachloro-1,3-butadiene	10.0	11.0		ug/L		110	60 - 140
Isopropanol	50.0	ND		ug/L		97	60 - 140
Isopropylbenzene	10.0	11.3		ug/L		113	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	10.6		ug/L		106	60 - 140
Methylene Chloride	10.0	10.1		ug/L		101	60 - 140
Naphthalene	10.0	10.7		ug/L		107	60 - 140
n-Butylbenzene	10.0	11.3		ug/L		113	60 - 140
N-Propylbenzene	10.0	11.3		ug/L		113	60 - 140
o-Xylene	10.0	10.7		ug/L		107	60 - 140
m,p-Xylene	20.0	22.0		ug/L		110	60 - 140
p-Isopropyltoluene	10.0	11.0		ug/L		110	60 - 140
sec-Butylbenzene	10.0	11.2		ug/L		112	60 - 140
Styrene	10.0	11.0		ug/L		110	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	10.2		ug/L		102	60 - 140
tert-Butyl alcohol (TBA)	50.0	57.4		ug/L		115	60 - 140
tert-Butylbenzene	10.0	11.1		ug/L		111	60 - 140
Tetrachloroethene	10.0	11.5		ug/L		115	70 - 130
Tetrahydrofuran	10.0	9.15	J,DX	ug/L		92	60 - 140
Toluene	10.0	10.8		ug/L		108	70 - 130
trans-1,2-Dichloroethene	10.0	11.2		ug/L		112	70 - 130
trans-1,3-Dichloropropene	10.0	10.5		ug/L		105	50 - 150
Trichloroethene	10.0	10.6		ug/L		106	65 - 135
Trichlorofluoromethane	10.0	10.9		ug/L		109	50 - 150
Vinyl acetate	10.0	9.59		ug/L		96	60 - 140
Vinyl chloride	10.0	11.2		ug/L		112	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*60 - 140*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Dibromofluoromethane (Surr)	*95*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.7		ug/L		107	60 - 140	2	30
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	70 - 130	1	36
1,1,2,2-Tetrachloroethane	10.0	9.96		ug/L		100	60 - 140	2	61
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.8		ug/L		118	60 - 140	3	30
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	70 - 130	1	45
1,1-Dichloroethane	10.0	10.7		ug/L		107	70 - 130	3	40
1,1-Dichloroethene	10.0	10.8		ug/L		108	50 - 150	0	32
1,1-Dichloropropene	10.0	11.2		ug/L		112	60 - 140	1	30
1,2,3-Trichlorobenzene	10.0	10.6		ug/L		106	60 - 140	4	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichloropropane	10.0	10.1		ug/L		101	60 - 140	3	30
1,2,4-Trichlorobenzene	10.0	10.7		ug/L		107	60 - 140	2	30
1,2,4-Trimethylbenzene	10.0	10.3		ug/L		103	60 - 140	0	30
1,2-Dibromo-3-Chloropropane	10.0	9.70		ug/L		97	60 - 140	5	30
1,2-Dibromoethane	10.0	10.7		ug/L		107	60 - 140	1	30
1,2-Dichloro-1,1,2-trifluoroethane	10.0	11.4		ug/L		114	60 - 140	3	30
1,2-Dichlorobenzene	10.0	10.2		ug/L		102	65 - 135	4	57
1,2-Dichloroethane	10.0	9.66		ug/L		97	70 - 130	2	49
1,2-Dichloropropane	10.0	10.3		ug/L		103	35 - 165	2	55
1,3,5-Trimethylbenzene	10.0	11.1		ug/L		111	60 - 140	3	30
1,3-Dichlorobenzene	10.0	10.8		ug/L		108	70 - 130	2	43
1,3-Dichloropropane	10.0	10.6		ug/L		106	60 - 140	2	30
1,4-Dichlorobenzene	10.0	10.7		ug/L		107	65 - 135	0	57
2,2-Dichloro-1,1,1-trifluoroethane	10.0	10.9		ug/L		109	60 - 140	2	30
2,2-Dichloropropane	10.0	11.4		ug/L		114	60 - 140	1	30
2-Butanone (MEK)	10.0	8.23		ug/L		82	60 - 140	11	30
2-Chloroethyl vinyl ether	10.0	8.67		ug/L		87	1 - 225	4	71
2-Chlorotoluene	10.0	10.9		ug/L		109	60 - 140	4	30
2-Hexanone	10.0	9.54		ug/L		95	60 - 140	0	30
4-Chlorotoluene	10.0	10.3		ug/L		103	60 - 140	0	30
4-Methyl-2-pentanone (MIBK)	10.0	10.2		ug/L		102	60 - 140	5	30
Acetone	10.0	ND		ug/L		108	60 - 140	2	30
Acrolein	20.0	19.6		ug/L		98	60 - 140	0	60
Acrylonitrile	10.0	10.0		ug/L		100	60 - 140	2	60
Benzene	10.0	11.0		ug/L		110	65 - 135	1	61
Bromobenzene	10.0	11.1		ug/L		111	60 - 140	2	30
Bromochloromethane	10.0	11.2		ug/L		112	60 - 140	3	30
Bromodichloromethane	10.0	10.4		ug/L		104	65 - 135	0	56
Bromoform	10.0	10.5		ug/L		105	70 - 130	6	42
Bromomethane	10.0	8.84		ug/L		88	15 - 185	4	61
Carbon disulfide	10.0	11.3		ug/L		113	60 - 140	3	30
Carbon tetrachloride	10.0	10.6		ug/L		106	70 - 130	0	41
Chlorobenzene	10.0	11.0		ug/L		110	65 - 135	1	53
Chloroethane	10.0	11.5		ug/L		115	40 - 160	1	78
Chloroform	10.0	10.1		ug/L		101	70 - 135	2	30
Chloromethane	10.0	9.80		ug/L		98	1 - 205	9	60
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	60 - 140	1	30
cis-1,3-Dichloropropene	10.0	10.8		ug/L		108	25 - 175	1	58
Cyclohexane	10.0	12.1		ug/L		121	60 - 140	5	30
Dibromochloromethane	10.0	10.6		ug/L		106	70 - 135	2	50
Dibromomethane	10.0	10.2		ug/L		102	60 - 140	0	30
Dichlorodifluoromethane	10.0	11.0		ug/L		110	60 - 140	4	30
Di-isopropyl ether (DIPE)	10.0	10.3		ug/L		103	60 - 140	0	30
Ethanol	100	89.0	J,DX BA	ug/L		89	60 - 140	36	30
Ethyl-t-butyl ether (ETBE)	10.0	10.8		ug/L		108	60 - 140	3	30
Ethylbenzene	10.0	11.0		ug/L		110	60 - 140	0	63
Hexachloro-1,3-butadiene	10.0	11.1		ug/L		111	60 - 140	1	30
Isopropanol	50.0	ND		ug/L		102	60 - 140	5	30
Isopropylbenzene	10.0	11.2		ug/L		112	60 - 140	1	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-307642/4
Matrix: Water
Analysis Batch: 307642

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	10.5		ug/L		105	60 - 140	0	30
Methylene Chloride	10.0	10.1		ug/L		101	60 - 140	0	28
Naphthalene	10.0	10.7		ug/L		107	60 - 140	0	30
n-Butylbenzene	10.0	11.4		ug/L		114	60 - 140	1	30
N-Propylbenzene	10.0	11.5		ug/L		115	60 - 140	1	30
o-Xylene	10.0	10.7		ug/L		107	60 - 140	0	30
m,p-Xylene	20.0	22.2		ug/L		111	60 - 140	1	30
p-Isopropyltoluene	10.0	10.9		ug/L		109	60 - 140	1	30
sec-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	2	30
Styrene	10.0	11.2		ug/L		112	60 - 140	1	30
Tert-amyl-methyl ether (TAME)	10.0	10.2		ug/L		102	60 - 140	0	30
tert-Butyl alcohol (TBA)	50.0	50.9		ug/L		102	60 - 140	12	30
tert-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	1	30
Tetrachloroethene	10.0	11.7		ug/L		117	70 - 130	2	39
Tetrahydrofuran	10.0	9.39	J,DX	ug/L		94	60 - 140	3	30
Toluene	10.0	10.6		ug/L		106	70 - 130	2	41
trans-1,2-Dichloroethene	10.0	11.5		ug/L		115	70 - 130	2	45
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	50 - 150	3	86
Trichloroethene	10.0	10.7		ug/L		107	65 - 135	1	48
Trichlorofluoromethane	10.0	10.9		ug/L		109	50 - 150	0	84
Vinyl acetate	10.0	9.94		ug/L		99	60 - 140	4	30
Vinyl chloride	10.0	11.6		ug/L		116	5 - 195	4	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*60 - 140*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*
Dibromofluoromethane (Surr)	*96*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-307594/7
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			02/28/23 12:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*101*		*67 - 133*		*02/28/23 12:05*	*1*

Lab Sample ID: LCS 570-307594/4
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	18.4		ug/L		92	75 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-307594/4
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*95*		*67 - 133*

Lab Sample ID: LCSD 570-307594/5
Matrix: Water
Analysis Batch: 307594

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	18.7		ug/L		93	75 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,4-Dichlorobutane (Surr)	*99*		*67 - 133*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-307149/1-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Chlorophenol	ND		0.20	0.096	ug/L		02/27/23 05:32	02/27/23 17:25	1
2-Nitrophenol	ND		5.0	3.5	ug/L		02/27/23 05:32	02/27/23 17:25	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		02/27/23 05:32	02/27/23 17:25	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		02/27/23 05:32	02/27/23 17:25	1
4-Nitrophenol	ND		5.0	3.4	ug/L		02/27/23 05:32	02/27/23 17:25	1
Acenaphthene	ND		0.20	0.098	ug/L		02/27/23 05:32	02/27/23 17:25	1
Acenaphthylene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Anthracene	ND		0.20	0.084	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzidine	ND		5.0	2.7	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[b]fluoranthene	0.123	J,DX	0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-307149/1-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		02/27/23 05:32	02/27/23 17:25	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		02/27/23 05:32	02/27/23 17:25	1
Chrysene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		02/27/23 05:32	02/27/23 17:25	1
Diethyl phthalate	ND		2.0	0.18	ug/L		02/27/23 05:32	02/27/23 17:25	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		02/27/23 05:32	02/27/23 17:25	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		02/27/23 05:32	02/27/23 17:25	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		02/27/23 05:32	02/27/23 17:25	1
Fluoranthene	ND		0.20	0.10	ug/L		02/27/23 05:32	02/27/23 17:25	1
Fluorene	ND		0.20	0.095	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		02/27/23 05:32	02/27/23 17:25	1
Hexachloroethane	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		02/27/23 05:32	02/27/23 17:25	1
Isophorone	ND		0.20	0.099	ug/L		02/27/23 05:32	02/27/23 17:25	1
Naphthalene	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Nitrobenzene	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		02/27/23 05:32	02/27/23 17:25	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		02/27/23 05:32	02/27/23 17:25	1
Pentachlorophenol	ND		1.0	0.84	ug/L		02/27/23 05:32	02/27/23 17:25	1
Phenanthrene	ND		0.20	0.16	ug/L		02/27/23 05:32	02/27/23 17:25	1
Phenol	ND		1.0	0.52	ug/L		02/27/23 05:32	02/27/23 17:25	1
Pyrene	ND		0.20	0.086	ug/L		02/27/23 05:32	02/27/23 17:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*81*		*28 - 127*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2,4,6-Tribromophenol (Surr)	*81*		*28 - 127*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorobiphenyl (Surr)	*60*		*31 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorophenol	*42*		*17 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
2-Fluorophenol (Surr)	*42*		*17 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Nitrobenzene-d5	*68*		*27 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Nitrobenzene-d5 (Surr)	*68*		*27 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
Phenol-d6 (Surr)	*29*		*10 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*
p-Terphenyl-d14 (Surr)	*78*		*45 - 120*	*02/27/23 05:32*	*02/27/23 17:25*	*1*

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	12.1		ug/L		61	57 - 130
1,2-Dichlorobenzene	20.0	13.7		ug/L		69	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	18.7		ug/L		93	60 - 115

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3-Dichlorobenzene	20.0	12.6		ug/L		63	37 - 120
1,4-Dichlorobenzene	20.0	13.1		ug/L		66	39 - 120
2,4,6-Trichlorophenol	20.0	21.3		ug/L		107	52 - 129
2,4-Dichlorophenol	20.0	17.6		ug/L		88	53 - 122
2,4-Dimethylphenol	20.0	17.3		ug/L		86	42 - 120
2,4-Dinitrophenol	20.0	21.2		ug/L		106	1 - 173
2,4-Dinitrotoluene	20.0	25.8	LQ	ug/L		129	48 - 127
2,6-Dinitrotoluene	20.0	25.4		ug/L		127	68 - 137
2-Chloronaphthalene	20.0	16.4		ug/L		82	65 - 120
2-Chlorophenol	20.0	16.6		ug/L		83	36 - 120
2-Nitrophenol	20.0	20.2		ug/L		101	45 - 167
3,3'-Dichlorobenzidine	20.0	22.3		ug/L		111	8 - 213
4,6-Dinitro-2-methylphenol	20.0	27.5	LQ	ug/L		138	53 - 130
4-Bromophenyl phenyl ether	20.0	17.8		ug/L		89	65 - 120
4-Chloro-3-methylphenol	20.0	20.1		ug/L		101	41 - 128
4-Chlorophenyl phenyl ether	20.0	18.4		ug/L		92	38 - 145
4-Nitrophenol	20.0	12.6		ug/L		63	13 - 129
Acenaphthene	20.0	17.9		ug/L		89	60 - 132
Acenaphthylene	20.0	21.3		ug/L		107	54 - 126
Anthracene	20.0	21.0		ug/L		105	43 - 120
Benzidine	20.0	9.42		ug/L		47	20 - 164
Benzo[a]anthracene	20.0	23.4		ug/L		117	42 - 133
Benzo[a]pyrene	20.0	25.1		ug/L		126	32 - 148
Benzo[b]fluoranthene	20.0	23.5		ug/L		117	42 - 140
Benzo[g,h,i]perylene	20.0	23.9		ug/L		120	1 - 195
Benzo[k]fluoranthene	20.0	24.9		ug/L		124	25 - 146
bis (2-chloroisopropyl) ether	20.0	16.6		ug/L		83	63 - 139
Bis(2-chloroethoxy)methane	20.0	14.9		ug/L		75	49 - 165
Bis(2-chloroethyl)ether	20.0	16.1		ug/L		80	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	25.7		ug/L		128	29 - 137
Butyl benzyl phthalate	20.0	25.3		ug/L		126	1 - 140
Chrysene	20.0	22.3		ug/L		111	44 - 140
Dibenz(a,h)anthracene	20.0	22.4		ug/L		112	1 - 200
Diethyl phthalate	20.0	22.9		ug/L		115	1 - 120
Dimethyl phthalate	20.0	22.7		ug/L		113	1 - 120
Di-n-butyl phthalate	20.0	24.2	LQ	ug/L		121	8 - 120
Di-n-octyl phthalate	20.0	28.5	LQ	ug/L		142	19 - 132
Fluoranthene	20.0	22.7		ug/L		114	43 - 121
Fluorene	20.0	19.1		ug/L		95	70 - 120
Hexachlorobenzene	20.0	17.8		ug/L		89	8 - 142
Hexachlorobutadiene	20.0	11.9		ug/L		59	38 - 120
Hexachlorocyclopentadiene	20.0	22.1		ug/L		110	43 - 145
Hexachloroethane	20.0	13.1		ug/L		66	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	22.4		ug/L		112	1 - 151
Isophorone	20.0	17.4		ug/L		87	47 - 180
Naphthalene	20.0	12.5		ug/L		62	36 - 120
Nitrobenzene	20.0	16.2		ug/L		81	54 - 158
N-Nitrosodimethylamine	20.0	9.35		ug/L		47	20 - 120
N-Nitrosodi-n-propylamine	20.0	17.7		ug/L		88	14 - 198

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-307149/2-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
N-Nitrosodiphenylamine	20.0	21.4		ug/L		107	65 - 133
Pentachlorophenol	20.0	14.9		ug/L		74	38 - 152
Phenanthrene	20.0	19.3		ug/L		96	65 - 120
Phenol	20.0	7.24		ug/L		36	17 - 120
Pyrene	20.0	21.0		ug/L		105	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*107*		*28 - 127*
2,4,6-Tribromophenol (Surr)	*107*		*28 - 127*
2-Fluorobiphenyl (Surr)	*84*		*31 - 120*
2-Fluorophenol	*48*		*17 - 120*
2-Fluorophenol (Surr)	*48*		*17 - 120*
Nitrobenzene-d5	*76*		*27 - 120*
Nitrobenzene-d5 (Surr)	*76*		*27 - 120*
Phenol-d6 (Surr)	*34*		*10 - 120*
p-Terphenyl-d14 (Surr)	*106*		*45 - 120*

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	20.0	10.8	LR	ug/L		54	57 - 130	12	30
1,2-Dichlorobenzene	20.0	12.4		ug/L		62	40 - 120	10	20
1,2-Diphenylhydrazine(as Azobenzene)	20.0	16.4		ug/L		82	60 - 115	13	30
1,3-Dichlorobenzene	20.0	11.8		ug/L		59	37 - 120	7	20
1,4-Dichlorobenzene	20.0	12.2		ug/L		61	39 - 120	7	20
2,4,6-Trichlorophenol	20.0	17.5		ug/L		88	52 - 129	20	35
2,4-Dichlorophenol	20.0	15.3		ug/L		76	53 - 122	14	30
2,4-Dimethylphenol	20.0	15.3		ug/L		76	42 - 120	12	35
2,4-Dinitrophenol	20.0	16.7		ug/L		84	1 - 173	23	79
2,4-Dinitrotoluene	20.0	21.5		ug/L		107	48 - 127	18	25
2,6-Dinitrotoluene	20.0	21.0		ug/L		105	68 - 137	19	29
2-Chloronaphthalene	20.0	13.9	BA	ug/L		69	65 - 120	17	15
2-Chlorophenol	20.0	15.2		ug/L		76	36 - 120	9	37
2-Nitrophenol	20.0	18.1		ug/L		91	45 - 167	11	33
3,3'-Dichlorobenzidine	20.0	19.0		ug/L		95	8 - 213	16	65
4,6-Dinitro-2-methylphenol	20.0	24.6		ug/L		123	53 - 130	11	122
4-Bromophenyl phenyl ether	20.0	15.9		ug/L		80	65 - 120	11	26
4-Chloro-3-methylphenol	20.0	16.9		ug/L		84	41 - 128	18	44
4-Chlorophenyl phenyl ether	20.0	15.3		ug/L		76	38 - 145	18	36
4-Nitrophenol	20.0	10.3		ug/L		51	13 - 129	20	79
Acenaphthene	20.0	15.0		ug/L		75	60 - 132	17	29
Acenaphthylene	20.0	17.9		ug/L		89	54 - 126	17	45
Anthracene	20.0	18.3		ug/L		91	43 - 120	14	40
Benzidine	20.0	6.51	BA	ug/L		33	20 - 164	37	30
Benzo[a]anthracene	20.0	19.2		ug/L		96	42 - 133	20	32
Benzo[a]pyrene	20.0	20.7		ug/L		103	32 - 148	19	43

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-307149/3-A
Matrix: Water
Analysis Batch: 307279

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307149

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzo[b]fluoranthene			20.0	19.6		ug/L		98	42 - 140	18	43
Benzo[g,h,i]perylene			20.0	20.9		ug/L		105	1 - 195	13	61
Benzo[k]fluoranthene			20.0	20.8		ug/L		104	25 - 146	18	38
bis (2-chloroisopropyl) ether			20.0	15.2		ug/L		76	63 - 139	9	46
Bis(2-chloroethoxy)methane			20.0	12.9		ug/L		65	49 - 165	14	32
Bis(2-chloroethyl)ether			20.0	14.1		ug/L		71	43 - 126	13	65
Bis(2-ethylhexyl) phthalate			20.0	22.7		ug/L		114	29 - 137	12	50
Butyl benzyl phthalate			20.0	22.0		ug/L		110	1 - 140	14	36
Chrysene			20.0	18.6		ug/L		93	44 - 140	18	53
Dibenz(a,h)anthracene			20.0	19.4		ug/L		97	1 - 200	14	75
Diethyl phthalate			20.0	19.1		ug/L		96	1 - 120	18	60
Dimethyl phthalate			20.0	18.6		ug/L		93	1 - 120	20	110
Di-n-butyl phthalate			20.0	20.5		ug/L		103	8 - 120	16	28
Di-n-octyl phthalate			20.0	26.1		ug/L		131	19 - 132	9	42
Fluoranthene			20.0	18.9		ug/L		95	43 - 121	18	40
Fluorene			20.0	16.1		ug/L		80	70 - 120	17	23
Hexachlorobenzene			20.0	15.4		ug/L		77	8 - 142	15	33
Hexachlorobutadiene			20.0	10.6		ug/L		53	38 - 120	11	38
Hexachlorocyclopentadiene			20.0	18.5		ug/L		92	43 - 145	18	22
Hexachloroethane			20.0	12.0		ug/L		60	55 - 120	9	32
Indeno[1,2,3-cd]pyrene			20.0	19.5		ug/L		97	1 - 151	14	60
Isophorone			20.0	15.1		ug/L		75	47 - 180	14	56
Naphthalene			20.0	11.5		ug/L		57	36 - 120	9	39
Nitrobenzene			20.0	14.2		ug/L		71	54 - 158	13	37
N-Nitrosodimethylamine			20.0	9.77		ug/L		49	20 - 120	4	21
N-Nitrosodi-n-propylamine			20.0	15.6		ug/L		78	14 - 198	12	52
N-Nitrosodiphenylamine			20.0	19.0		ug/L		95	65 - 133	12	20
Pentachlorophenol			20.0	12.6		ug/L		63	38 - 152	16	52
Phenanthrene			20.0	16.7		ug/L		83	65 - 120	15	24
Phenol			20.0	6.65		ug/L		33	17 - 120	8	39
Pyrene			20.0	16.9		ug/L		84	70 - 120	22	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*95*		*28 - 127*
2,4,6-Tribromophenol (Surr)	*95*		*28 - 127*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*
2-Fluorophenol	*44*		*17 - 120*
2-Fluorophenol (Surr)	*44*		*17 - 120*
Nitrobenzene-d5	*66*		*27 - 120*
Nitrobenzene-d5 (Surr)	*66*		*27 - 120*
Phenol-d6 (Surr)	*31*		*10 - 120*
p-Terphenyl-d14 (Surr)	*86*		*45 - 120*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-309605/5
Matrix: Water
Analysis Batch: 309605

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/07/23 14:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*64*		*20 - 144*		*03/07/23 14:47*	*1*

Lab Sample ID: LCS 570-309605/3
Matrix: Water
Analysis Batch: 309605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	2030		ug/L		106	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*87*		*20 - 144*

Lab Sample ID: LCSD 570-309605/4
Matrix: Water
Analysis Batch: 309605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	1940		ug/L		101	71 - 120	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*86*		*20 - 144*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-308878/1-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308878

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/03/23 17:08	03/05/23 03:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*105*		*53 - 151*	*03/03/23 17:08*	*03/05/23 03:27*	*1*

Lab Sample ID: LCS 570-308878/2-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308878

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			4.00	3.67		mg/L		92	65 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*99*		*53 - 151*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: LCSD 570-308878/3-A
Matrix: Water
Analysis Batch: 309032

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308878

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			4.00	3.89		mg/L		97	65 - 129	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*110*		*53 - 151*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-307526/4
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			02/28/23 02:19	1

Lab Sample ID: LCS 570-307526/5
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.5		ug/L		101	95 - 107		

Lab Sample ID: LCSD 570-307526/6
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.4		ug/L		101	95 - 107	0	20

Lab Sample ID: MB 570-307529/1-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			02/28/23 05:18	1

Lab Sample ID: LCS 570-307529/2-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.4		ug/L		101	95 - 107		

Lab Sample ID: LCSD 570-307529/3-A
Matrix: Water
Analysis Batch: 307526

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.7		ug/L		101	95 - 107	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-307134/6
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			02/27/23 06:29	1
Nitrate as N	ND		0.10	0.020	mg/L			02/27/23 06:29	1

Lab Sample ID: LCS 570-307134/7
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.55		mg/L		102	90 - 110
Nitrate as N	5.00	4.98		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-307134/8
Matrix: Water
Analysis Batch: 307134

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.51		mg/L		100	90 - 110	1	15
Nitrate as N	5.00	4.91		mg/L		98	90 - 110	1	15

Lab Sample ID: MB 570-307135/6
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			02/27/23 06:29	1
Fluoride	ND		0.10	0.046	mg/L			02/27/23 06:29	1
Sulfate	ND		1.0	0.24	mg/L			02/27/23 06:29	1

Lab Sample ID: LCS 570-307135/7
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.6		mg/L		99	90 - 110
Fluoride	2.50	2.56		mg/L		102	90 - 110
Sulfate	50.0	49.1		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-307135/8
Matrix: Water
Analysis Batch: 307135

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	48.7		mg/L		97	90 - 110	2	15
Fluoride	2.50	2.52		mg/L		101	90 - 110	1	15
Sulfate	50.0	48.3		mg/L		97	90 - 110	2	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-307808/7
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			02/28/23 19:27	1

Lab Sample ID: LCS 570-307808/8
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.2		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-307808/9
Matrix: Water
Analysis Batch: 307808

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.1		ug/L		96	85 - 115	0	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-307563/1-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		02/28/23 08:01	02/28/23 19:24	1

Lab Sample ID: LCS 570-307563/2-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	489	J,DX	ug/L		98	85 - 115

Lab Sample ID: LCSD 570-307563/3-A
Matrix: Water
Analysis Batch: 307880

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 307563

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	492	J,DX	ug/L		98	85 - 115	1	20

Lab Sample ID: MB 570-307724/1-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			02/28/23 23:34	1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 570-307724/2-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	434	J,DX	ug/L		87	85 - 115

Lab Sample ID: LCSD 570-307724/3-A
Matrix: Water
Analysis Batch: 307917

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	431	J,DX	ug/L		86	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-307628/1-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		02/28/23 10:21	02/28/23 13:23	1
Silver	ND		1.0	0.23	ug/L		02/28/23 10:21	02/28/23 13:23	1
Arsenic	ND		1.0	0.16	ug/L		02/28/23 10:21	02/28/23 13:23	1
Barium	ND		1.0	0.17	ug/L		02/28/23 10:21	02/28/23 13:23	1
Beryllium	ND		0.50	0.26	ug/L		02/28/23 10:21	02/28/23 13:23	1
Cadmium	ND		1.0	0.13	ug/L		02/28/23 10:21	02/28/23 13:23	1
Chromium	0.267	J,DX	2.0	0.14	ug/L		02/28/23 10:21	02/28/23 13:23	1
Copper	ND		2.0	0.32	ug/L		02/28/23 10:21	02/28/23 13:23	1
Iron	5.33	J,DX	20	3.7	ug/L		02/28/23 10:21	02/28/23 13:23	1
Manganese	ND		1.0	0.41	ug/L		02/28/23 10:21	02/28/23 13:23	1
Nickel	ND		2.0	0.17	ug/L		02/28/23 10:21	02/28/23 13:23	1
Lead	ND		1.0	0.12	ug/L		02/28/23 10:21	02/28/23 13:23	1
Antimony	ND		2.0	0.36	ug/L		02/28/23 10:21	02/28/23 13:23	1
Zinc	ND		20	2.8	ug/L		02/28/23 10:21	02/28/23 13:23	1
Selenium	ND		2.0	0.52	ug/L		02/28/23 10:21	02/28/23 13:23	1
Cobalt	ND		1.0	0.14	ug/L		02/28/23 10:21	02/28/23 13:23	1
Thallium	ND		1.0	0.11	ug/L		02/28/23 10:21	02/28/23 13:23	1

Lab Sample ID: LCS 570-307628/2-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	77.7		ug/L		97	85 - 115
Silver	80.0	75.4		ug/L		94	85 - 115
Arsenic	80.0	76.7		ug/L		96	85 - 115
Barium	80.0	76.7		ug/L		96	85 - 115
Beryllium	80.0	76.3		ug/L		95	85 - 115
Cadmium	80.0	76.1		ug/L		95	85 - 115
Chromium	80.0	75.5		ug/L		94	85 - 115
Copper	80.0	74.3		ug/L		93	85 - 115
Iron	800	770		ug/L		96	85 - 115
Manganese	80.0	77.4		ug/L		97	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-307628/2-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	80.0	75.1		ug/L		94	85 - 115
Lead	80.0	76.9		ug/L		96	85 - 115
Antimony	80.0	77.4		ug/L		97	85 - 115
Zinc	80.0	75.3		ug/L		94	85 - 115
Selenium	80.0	79.2		ug/L		99	85 - 115
Cobalt	80.0	74.2		ug/L		93	85 - 115
Thallium	80.0	75.7		ug/L		95	85 - 115

Lab Sample ID: LCSD 570-307628/3-A
Matrix: Water
Analysis Batch: 307737

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 307628

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	80.2		ug/L		100	85 - 115	3	20
Silver	80.0	77.2		ug/L		96	85 - 115	2	20
Arsenic	80.0	77.7		ug/L		97	85 - 115	1	20
Barium	80.0	78.0		ug/L		98	85 - 115	2	20
Beryllium	80.0	74.5		ug/L		93	85 - 115	2	20
Cadmium	80.0	78.0		ug/L		97	85 - 115	2	20
Chromium	80.0	77.9		ug/L		97	85 - 115	3	20
Copper	80.0	76.4		ug/L		96	85 - 115	3	20
Iron	800	798		ug/L		100	85 - 115	4	20
Manganese	80.0	80.1		ug/L		100	85 - 115	3	20
Nickel	80.0	77.6		ug/L		97	85 - 115	3	20
Lead	80.0	78.1		ug/L		98	85 - 115	2	20
Antimony	80.0	81.2		ug/L		102	85 - 115	5	20
Zinc	80.0	77.4		ug/L		97	85 - 115	3	20
Selenium	80.0	81.9		ug/L		102	85 - 115	3	20
Cobalt	80.0	76.9		ug/L		96	85 - 115	4	20
Thallium	80.0	78.3		ug/L		98	85 - 115	3	20

Lab Sample ID: MB 570-308039/1-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			03/01/23 14:16	1
Silver	ND		1.0	0.23	ug/L			03/01/23 14:16	1
Arsenic	ND		1.0	0.16	ug/L			03/01/23 14:16	1
Barium	ND		1.0	0.17	ug/L			03/01/23 14:16	1
Beryllium	ND		0.50	0.26	ug/L			03/01/23 14:16	1
Cadmium	ND		1.0	0.13	ug/L			03/01/23 14:16	1
Chromium	0.163	J,DX	2.0	0.14	ug/L			03/01/23 14:16	1
Copper	ND		2.0	0.32	ug/L			03/01/23 14:16	1
Iron	ND		20	3.7	ug/L			03/01/23 14:16	1
Manganese	ND		1.0	0.41	ug/L			03/01/23 14:16	1
Nickel	ND		2.0	0.17	ug/L			03/01/23 14:16	1
Lead	ND		1.0	0.12	ug/L			03/01/23 14:16	1
Antimony	ND		2.0	0.36	ug/L			03/01/23 14:16	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-308039/1-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	2.8	ug/L			03/01/23 14:16	1
Selenium	ND		2.0	0.52	ug/L			03/01/23 14:16	1
Cobalt	ND		1.0	0.14	ug/L			03/01/23 14:16	1
Thallium	ND		1.0	0.11	ug/L			03/01/23 14:16	1

Lab Sample ID: LCS 570-308039/2-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	79.4		ug/L		99	85 - 115
Silver	80.0	79.7		ug/L		100	85 - 115
Arsenic	80.0	79.7		ug/L		100	85 - 115
Barium	80.0	79.3		ug/L		99	85 - 115
Beryllium	80.0	79.5		ug/L		99	85 - 115
Cadmium	80.0	80.0		ug/L		100	85 - 115
Chromium	80.0	80.1		ug/L		100	85 - 115
Copper	80.0	77.6		ug/L		97	85 - 115
Iron	800	814		ug/L		102	85 - 115
Manganese	80.0	81.3		ug/L		102	85 - 115
Nickel	80.0	78.1		ug/L		98	85 - 115
Lead	80.0	80.3		ug/L		100	85 - 115
Antimony	80.0	79.8		ug/L		100	85 - 115
Zinc	80.0	78.5		ug/L		98	85 - 115
Selenium	80.0	82.2		ug/L		103	85 - 115
Cobalt	80.0	78.7		ug/L		98	85 - 115
Thallium	80.0	80.5		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-308039/3-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	81.3		ug/L		102	85 - 115	2	20
Silver	80.0	79.8		ug/L		100	85 - 115	0	20
Arsenic	80.0	80.6		ug/L		101	85 - 115	1	20
Barium	80.0	79.2		ug/L		99	85 - 115	0	20
Beryllium	80.0	83.7		ug/L		105	85 - 115	5	20
Cadmium	80.0	80.5		ug/L		101	85 - 115	1	20
Chromium	80.0	80.0		ug/L		100	85 - 115	0	20
Copper	80.0	78.2		ug/L		98	85 - 115	1	20
Iron	800	814		ug/L		102	85 - 115	0	20
Manganese	80.0	81.5		ug/L		102	85 - 115	0	20
Nickel	80.0	78.2		ug/L		98	85 - 115	0	20
Lead	80.0	80.5		ug/L		101	85 - 115	0	20
Antimony	80.0	82.8		ug/L		103	85 - 115	4	20
Zinc	80.0	81.1		ug/L		101	85 - 115	3	20
Selenium	80.0	83.1		ug/L		104	85 - 115	1	20
Cobalt	80.0	78.8		ug/L		99	85 - 115	0	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-308039/3-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Thallium			80.0	80.5		ug/L		101	85 - 115	0	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-308455/1-A
Matrix: Water
Analysis Batch: 308587

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308455

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/02/23 13:33	03/02/23 19:57	1

Lab Sample ID: LCS 570-308455/2-A
Matrix: Water
Analysis Batch: 308587

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308455

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HEM (Oil & Grease)			40.0	38.8		mg/L		97	78 - 114		

Lab Sample ID: LCSD 570-308455/3-A
Matrix: Water
Analysis Batch: 308587

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308455

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	38.0		mg/L		95	78 - 114	2	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-309909/5-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 309909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/08/23 09:40	03/08/23 11:21	1

Lab Sample ID: LCS 570-309909/6-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 309909

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.483		mg/L		97	90 - 110		

Lab Sample ID: LCSD 570-309909/7-A
Matrix: Water
Analysis Batch: 309958

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 309909

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.488		mg/L		98	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309199/12
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/03/23 20:26	1

Lab Sample ID: LCS 570-309199/13
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	229		ug/L		92	90 - 110

Lab Sample ID: LCSD 570-309199/15
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	231		ug/L		92	90 - 110	1	20

Lab Sample ID: MRL 570-309199/11
Matrix: Water
Analysis Batch: 309199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	5.41		ug/L		108	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-307521/1
Matrix: Water
Analysis Batch: 307521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		100.8	99.0 - 101.0

Lab Sample ID: LCSSRM 570-307521/2
Matrix: Water
Analysis Batch: 307521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-307521/3
Matrix: Water
Analysis Batch: 307521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-311349/9
Matrix: Water
Analysis Batch: 311349

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/13/23 20:08	1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-308515/1
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/02/23 16:27	1

Lab Sample ID: LCS 570-308515/2
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	978		mg/L		98	84 - 108

Lab Sample ID: LCSD 570-308515/3
Matrix: Water
Analysis Batch: 308515

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	84 - 108	4	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-308912/1
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/03/23 18:43	1

Lab Sample ID: LCS 570-308912/2
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.0		mg/L		96	77 - 116

Lab Sample ID: LCSD 570-308912/3
Matrix: Water
Analysis Batch: 308912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	96.0		mg/L		96	77 - 116	0	10

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-310352/3
Matrix: Water
Analysis Batch: 310352

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			03/08/23 08:36	1

Lab Sample ID: LCS 570-310352/4
Matrix: Water
Analysis Batch: 310352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Carbon, Total Organic			5.03	5.02		mg/L		100	85 - 115		

Lab Sample ID: LCSD 570-310352/5
Matrix: Water
Analysis Batch: 310352

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic			5.03	4.92		mg/L		98	85 - 115	2	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-307522/5-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 307522

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		02/27/23 20:28	02/27/23 21:49	1

Lab Sample ID: LCS 570-307522/6-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 307522

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.546		mg/L		109	83 - 122		

Lab Sample ID: LCSD 570-307522/7-A
Matrix: Water
Analysis Batch: 307520

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 307522

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.538		mg/L		108	83 - 122	1	10

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 570-309219/2
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			02/27/23 11:01	1

Method: SM5210B - BOD, 5 Day (Continued)

Lab Sample ID: LCS 570-309219/4
Matrix: Water
Analysis Batch: 309219

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Biochemical Oxygen Demand			199	201		mg/L		101	84.6 - 115.4		

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-129046-1 DU
Matrix: Water
Analysis Batch: 311510

Client Sample ID: EPBBC_20230226
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay (less than 0.00391 mm)	26.32			26.00		%				1	20
Coarse Sand (0.5mm to 1mm)	ND			ND		%				NC	20
Fine Sand (0.125 to 0.25mm)	0.03			0.09		%				100	20
Gravel (greater than 2 mm)	ND			ND		%				NC	20
Medium Sand (0.25 to 0.5 mm)	ND			ND		%				NC	20
Silt (0.00391 to 0.0625mm)	69.58			69.41		%				0.2	20
Total Silt and Clay (0 to 0.0626mm)	95.90			95.41		%				0.5	20
Very Coarse Sand (1 to 2mm)	ND			ND		%				NC	20
Very Fine Sand (0.0625 to 0.125 mm)	4.07			4.50		%				10	20

GC/MS VOA

Analysis Batch: 307594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	8260B SIM	
MB 570-307594/7	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-307594/4	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-307594/5	Lab Control Sample Dup	Total/NA	Water	8260B SIM	

Analysis Batch: 307642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	624.1	
570-129046-2	TB_20230226-1	Total/NA	Water	624.1	
MB 570-307642/6	Method Blank	Total/NA	Water	624.1	
LCS 570-307642/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-307642/4	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 307149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	625	
MB 570-307149/1-A	Method Blank	Total/NA	Water	625	
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 307279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-307149/1-A	Method Blank	Total/NA	Water	625.1 SIM	307149
LCS 570-307149/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	307149
LCSD 570-307149/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	307149

Analysis Batch: 307608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	625.1 SIM	307149

GC VOA

Analysis Batch: 309605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	8015B	
MB 570-309605/5	Method Blank	Total/NA	Water	8015B	
LCS 570-309605/3	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-309605/4	Lab Control Sample Dup	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 308878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	3510C	
MB 570-308878/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-308878/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-308878/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA

Analysis Batch: 309032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308878/1-A	Method Blank	Total/NA	Water	8015B	308878
LCS 570-308878/2-A	Lab Control Sample	Total/NA	Water	8015B	308878
LCSD 570-308878/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	308878

Analysis Batch: 311027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	8015B	308878

HPLC/IC

Analysis Batch: 307134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	300.0	
MB 570-307134/6	Method Blank	Total/NA	Water	300.0	
LCS 570-307134/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307134/8	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 307135

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	300.0	
MB 570-307135/6	Method Blank	Total/NA	Water	300.0	
LCS 570-307135/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-307135/8	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 307526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	218.6	307529
570-129046-1	EPBBC_20230226	Total/NA	Water	218.6	
MB 570-307526/4	Method Blank	Total/NA	Water	218.6	
MB 570-307529/1-A	Method Blank	Dissolved	Water	218.6	307529
LCS 570-307526/5	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-307529/2-A	Lab Control Sample	Dissolved	Water	218.6	307529
LCSD 570-307526/6	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-307529/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	307529

Filtration Batch: 307529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	Filtration	
MB 570-307529/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-307529/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-307529/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 307808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	314.0	
MB 570-307808/7	Method Blank	Total/NA	Water	314.0	
LCS 570-307808/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-307808/9	Lab Control Sample Dup	Total/NA	Water	314.0	

HPLC/IC

Analysis Batch: 308826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	NO2NO3 Calc	

Metals

Prep Batch: 307563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total Recoverable	Water	200.7	
MB 570-307563/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-307563/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-307563/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	

Prep Batch: 307628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total Recoverable	Water	200.8	
MB 570-307628/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-307628/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-307628/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Filtration Batch: 307724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	Filtration	
MB 570-307724/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-307724/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-307724/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 307737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-307628/1-A	Method Blank	Total Recoverable	Water	200.8	307628
LCS 570-307628/2-A	Lab Control Sample	Total Recoverable	Water	200.8	307628
LCSD 570-307628/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	307628

Analysis Batch: 307880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total Recoverable	Water	200.7 Rev 4.4	307563
MB 570-307563/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	307563
LCS 570-307563/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	307563
LCSD 570-307563/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	307563

Analysis Batch: 307917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	200.7 Rev 4.4	307724
MB 570-307724/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	307724
LCS 570-307724/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	307724
LCSD 570-307724/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	307724

Analysis Batch: 307918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total Recoverable	Water	200.8	307628

Metals

Filtration Batch: 308039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	Filtration	
MB 570-308039/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 308100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	200.8	308039
MB 570-308039/1-A	Method Blank	Dissolved	Water	200.8	308039
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	200.8	308039
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	308039

General Chemistry

Analysis Batch: 307520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	SM 5540C	307522
MB 570-307522/5-A	Method Blank	Total/NA	Water	SM 5540C	307522
LCS 570-307522/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	307522
LCSD 570-307522/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	307522

Analysis Batch: 307521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	SM 2130B	
LCSSRM 570-307521/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-307521/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-307521/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Prep Batch: 307522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	SM 5540C	
MB 570-307522/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-307522/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-307522/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Analysis Batch: 307843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	SM 2540F	

Prep Batch: 308455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	1664A	
MB 570-308455/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-308455/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-308455/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 308515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	SM 2540C	
MB 570-308515/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-308515/2	Lab Control Sample	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 308515 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-308515/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 308587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	1664A	308455
MB 570-308455/1-A	Method Blank	Total/NA	Water	1664A	308455
LCS 570-308455/2-A	Lab Control Sample	Total/NA	Water	1664A	308455
LCSD 570-308455/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	308455

Analysis Batch: 308912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	SM 2540D	
MB 570-308912/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-308912/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-308912/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 309199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	Kelada 01	
MB 570-309199/12	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309199/13	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309199/15	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-309199/11	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 309200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	218.6 CR3	
570-129046-1	EPBBC_20230226	Total/NA	Water	218.6 CR3	

Analysis Batch: 309219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	SM5210B	
USB 570-309219/2	Method Blank	Total/NA	Water	SM5210B	
LCS 570-309219/4	Lab Control Sample	Total/NA	Water	SM5210B	

Prep Batch: 309909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	Distill/Ammonia	
MB 570-309909/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 309958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	350.1	309909
MB 570-309909/5-A	Method Blank	Total/NA	Water	350.1	309909
LCS 570-309909/6-A	Lab Control Sample	Total/NA	Water	350.1	309909
LCSD 570-309909/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	309909

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

General Chemistry

Analysis Batch: 310352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	SM 5310D	
MB 570-310352/3	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-310352/4	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-310352/5	Lab Control Sample Dup	Total/NA	Water	SM 5310D	

Analysis Batch: 311349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	SM 2510B	
MB 570-311349/9	Method Blank	Total/NA	Water	SM 2510B	

Geotechnical

Analysis Batch: 311510

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	D4464	
LCS 570-311510/6	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-311510/8	Lab Control Sample Dup	Total/NA	Water	D4464	
570-129046-1 DU	EPBBC_20230226	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Client Sample ID: EPBBC_20230226

Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	307642	02/28/23 18:16	KHF2	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	307594	02/28/23 19:01	G6NI	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			975.8 mL	2 mL	307149	02/28/23 05:19	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	307608	02/28/23 17:36	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	309605	03/07/23 21:55	P1R	EET CAL 4
	Instrument ID: GC1									
Total/NA	Prep	3510C			259.4 mL	2.5 mL	308878	03/03/23 17:08	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	311027	03/13/23 17:06	N5Y3	EET CAL 4
	Instrument ID: GC69A									
Dissolved	Filtration	Filtration			100 mL	100 mL	307529	02/28/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	307526	02/28/23 06:06	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	307526	02/28/23 03:06	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		5	4 mL	4 mL	307134	02/28/23 01:18	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	300.0		5	4 mL	4 mL	307135	02/28/23 01:18	PS	EET CAL 4
	Instrument ID: IC10									
Total/NA	Analysis	314.0		1	4 mL	4 mL	307808	02/28/23 23:37	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			308826	03/03/23 14:06	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Dissolved	Filtration	Filtration			50 mL	50 mL	307724	02/28/23 13:46	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			307917	02/28/23 23:49	K1UV	EET CAL 4
	Instrument ID: ICP10									
Total Recoverable	Prep	200.7			50 mL	50 mL	307563	02/28/23 08:01	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			307880	02/28/23 20:22	P1R	EET CAL 4
	Instrument ID: ICP10									
Dissolved	Filtration	Filtration			50 mL	50 mL	308039	03/01/23 12:58	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			308100	03/01/23 14:45	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	307628	02/28/23 10:21	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			307918	02/28/23 14:34	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Prep	1664A			978 mL	1000 mL	308455	03/02/23 13:33	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			308587	03/02/23 19:57	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Dissolved	Analysis	218.6 CR3		1			309200	03/06/23 11:03	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	218.6 CR3		1			309200	03/06/23 11:03	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Client Sample ID: EPBBC_20230226

Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	309909	03/08/23 09:40	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	309958	03/08/23 11:55	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309199	03/03/23 20:26	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			307521	02/27/23 23:10	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			311349	03/13/23 23:57	UAPD	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	308515	03/02/23 16:27	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	495 mL	1000 mL	308912	03/03/23 18:43	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	307843	02/27/23 20:30	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 5310D		4	40 mL	40 mL	310352	03/08/23 22:30	UAPD	EET CAL 4
	Instrument ID: TOC12									
Total/NA	Prep	SM 5540C			100 mL	100 mL	307522	02/27/23 20:28	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	307520	02/27/23 22:00	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	SM5210B		1			309219	02/27/23 21:47	U7UR	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	D4464		1			311510	03/14/23 15:05	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB_20230226-1

Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	307642	02/28/23 16:26	KHF2	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
SM5210B	BOD, 5 Day	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

1664A = EPA-821-98-002
ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129046-1	EPBBC_20230226	Water	02/26/23 12:45	02/27/23 18:00
570-129046-2	TB_20230226-1	Water	02/26/23 12:45	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129046

570-129046 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBBC_20230226	2/26/23	1245	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EB_20230226-1	2/26/23	1245	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 1245
																									DO (mg/L) 4.44
																									pH 7.01
																									Temp (°C/F) 52.2
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1535
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

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Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/l)

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.9/1.8, 2.2/2.1 SC12

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

3/16/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in acienda Heights CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Valencia CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBBC_20230226	2/26/23	1245	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
TB_20230226-2	2/26/23	1245	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.01 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1620	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1845	Received:		Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208503.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
EPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230226-2 (570-129046-3)	2/26/23	12:45 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 3-1-23 15:40	Company EC	Received by:	Date/Time: 3.1.23 1540	Company Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 ~ IR75

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129046-1

Login Number: 129046
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129046-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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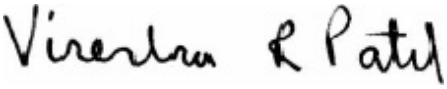
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129046-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129046-2

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-2

Client Sample ID: EPBBC_20230226

Lab Sample ID: 570-129046-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.010		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0079		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.010		0.00050	0.000079	ug/L			03/02/23 16:50	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0079		0.00050	0.000079	ug/L			03/02/23 15:18	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-417455/13
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:07	1

Lab Sample ID: MB 580-417455/14
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:11	1

Lab Sample ID: MB 580-417455/15
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 14:15	1

Lab Sample ID: LCS 580-417455/16
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00484		ug/L		97	77 - 123		

Lab Sample ID: LCSD 580-417455/12
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00474		ug/L		95	77 - 123	2	24

Lab Sample ID: MB 580-417[illegible]691-A
Matrix: Water
Analysis Batch: 417455

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/02/23 16:08	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-2

Metals

Filtration Batch: 419236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	Filtration	
MB 580-419236/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 419455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	1631E	419236
570-129046-1	EPBBC_20230226	Total/NA	Water	1631E	
MB 580-419236/1-A	Method Blank	Dissolved	Water	1631E	419236
MB 580-419455/13	Method Blank	Total/NA	Water	1631E	
MB 580-419455/14	Method Blank	Total/NA	Water	1631E	
MB 580-419455/15	Method Blank	Total/NA	Water	1631E	
LCS 580-419455/16	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-419455/17	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-2

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	419236	03/01/23 13:20	DRM	EET SEA
Dissolved	Analysis	1631E		1			419455	03/02/23 15:18	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			419455	03/02/23 16:50	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
/ roSectBite: FoeinL ggRMIgs A and Ff /

Job ID: 570-1290Pj -2

Laboratory: Eurofins Seattle

All accreditationNBertipicationNheld by thiNlaboratory are liNted. k ot all accreditationNBertipicationNare a((licable to thiNre(ort.

Authority	Program	Identification Number	Expiration Date
AlaNUa T) g4E	gtate	20-00P	02-19-25
Ak AF	De(t. opDepenNe 3MA/	M226j	01-19-25
Ak AF	De(t. op3nerLy	M226j	01-19-25
Ak AF	IgOB3C 17025	M226j	01-19-25
ArUanNaND3Q	gtate	880152j	05-26-26
Calipornia	gtate	295P	07-07-22 *
Rlorida	k3MA/	387575	0j -60-26
MouiNana	k3MA/	06076	0j -60-26
MouiNana TAIIE	k3MA/	06076	0j -60-26
f aine	gtate	WA01276	05-02-2P
f ontana T) g4E	gtate	k A	0P-1P-27
k ew JerNey	k3MA/	WA01P	0j -60-26
k ew YorU	k3MA/	11j j 2	0P-01-26
OreLon	k3MA/	P1j 7	07-07-26
) g RiNh & Wildlipe	) g Rederal / roLramN	A20571	0j -60-26
) gDA	) g Rederal / roLramN	525-26-P-22576	01-0P-2j
WaNhinLton	gtate	C788	07-16-26
WiNconNin	gtate	699166Pj 0	08-61-26

* AccreditationBCertipication renewal (endinL - accreditationBertipication conNdered valid.

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Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129046-1	EPBBC_20230226	Water	02/26/23 12:45	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

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129046

570-129046 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBBC_20230226	2/26/23	1245	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EB_20230226-1	2/26/23	1245	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 1245
																									DO (mg/L) 4.44
																									pH 7.01
																									Temp (°C/F) 52.2
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1535
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Page 16 of 21

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/l)

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.8, 2.2/2.1 SC12

3/4/2023

SAP COC 2019/2020 VERSION 3

129046

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in acienda Heights CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Hacienda Heights CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights CA	Asbestos (E100.2)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBBC_20230226	2/26/23	1245	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1245	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.01 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1620	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1845	Received:		Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208503.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
EPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230226-2 (570-129046-3)	2/26/23	12:45 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 3-1-23 15:40	Company EC	Received by:	Date/Time: 3.1.23 1540	Company Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 ~ DT75

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208636.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-129046-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/9/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		02/28/23 1129	EC		3/1/23 0945	FEDEX
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: NP Sm Blue | Cooler Temperature(s) °C and Other Remarks: 1.6 DJ4 13

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129046-2

Login Number: 129046
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129046-2

Login Number: 129046
List Number: 2
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/01/23 01:18 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129046-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

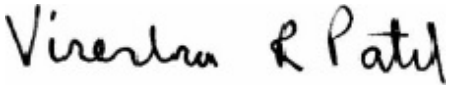
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129046-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129046-3

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-3

Method	Method Description	Protocol	Laboratory
Subcontract	Quant-Tray - E. Coli - level 4 required	None	Enthalpy

Protocol References:

None = None

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129046-1	EPBBC_20230226	Water	02/26/23 12:45	02/27/23 18:00

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 480481
Report Level: IV
Report Date: 03/08/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Location: Boeing SSFL ISRA and BMP - Project #57014595

Authorized for release by:

Quynhgiao Le

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Lab Job #: 480481
Location: Boeing SSFL ISRA and BMP - Project #57014595
Date Received: 02/27/23

Sample ID	Lab ID	Collected	Matrix
EPPBBC_20230226 (570-129046-1)	480481-001	02/26/23 12:45	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	480481
	Location:	Boeing SSFL ISRA and BMP - Project #57014595
	Date Received:	02/27/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 02/27/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

480481

Chain of Custody Record

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

eurofins Environment Testing

9/4/14

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208497.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-129046-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 3/10/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 2/27/23 1721	Company EC	Received by:		Date/Time: 1721 2-27-23	Company	
Relinquished by:	Date/Time:	Company	Received by:		Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:		Date/Time:	Company	
Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:				

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins

Project: Boeing SSFL ISRA and BMP

Date Received: 2/27/23

Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: _____ #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: _____ #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✓
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?	✓		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 2-27-23

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 480481 **Project#:** STANDARD

Client: Eurofins Calscience Tustin **Location:** Boeing SSFL ISRA and BMP - Project...

Field ID:	EPPBBC_20230226 (570-129046-1)	**Batch#:**	308595	**Analyzed:**	02/28/23 14:42
Lab ID:	480481-001	**Sampled:**	02/26/23 12:45	**Prep:**	
Matrix:	Water	**Received:**	02/27/23	**Analysis:**	SM 9223Bb
DiIn Fac:	1.000	**Prepared:**	02/27/23 18:19	**Analyst:**	VLC

480481-001 Analyte	Result	RL	Units	Qual
Coliform, E. Coli	**230**	1.0	MPN/100ml	H

Legend

H: Holding time was exceeded

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: JA Prep Date/Time: 2/27/23 1819 QC Batch ID: 308595 Batch Page 1 of 1

Read Analyst: VC Read Date/Time 2/28/23 1442

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: FU330 Pipette Lot #: A104222

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 2/1/23 Bottle Lot #: DU006V Comparator Lot #: AU148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 1840 35.1 Incubator Out, Temp/Time: 35.2°C 1441

Fecal Coliform: Water Bath ID: NA Water Bath In, Temp/Time: NA Water Bath Out, Temp/Time: NA

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		480480-001	1x	48	48	1611.2	1000	30	7	55.4	55					EC-01
		↓ ↓	10x	49	29	579.4	5800	7	0	7.5	75					↓ 10x
		↓ ↓	100x	33	3	56.5	5600	1	0	1.0	100					↓ 100x
		480481-001	1x	49	48	>2419.6	>2400	48	16	228.2	230					EP-01
		↓ ↓	10x	49	42	1299.7	13,000	13	0	14.8	150					↓ 10x
		↓ ↓	100x	45	11	139.6	14,000	1	0	1.0	100					↓ 100x
		480482-001	1x	49	48	>2419.6	>2400	27	3	42.0	42					EU-01
		↓ ↓	10x	49	32	686.7	6,900	7	0	7.5	75					↓ 10x
		↓ ↓	100x	32	5	57.3	5,700	0	0	<1	<100					↓ 100x
		480483-001	1x	49	48	>2419.6	>2400	27	7	48.1	48					CA-01
		↓ ↓	10x	49	34	770.1	7,700	4	0	4.1	41					↓ 10x
		↓ ↓	100x	39	10	93.4	9,300	1	0	1.0	100					↓ 100x
								JA	3/5/23							ok to run past hold per PM st 02/27/23
Quality Control		**Culture ID**														
Positive +/+ (E. Coli)		2/26/23		49	48	>2419.6	>2400	49	48	>2419.6	>2400					
Positive +/- (K. Pneumonia)		↓		49 ~~0~~ VC 2/28/23	~~0~~ 48	>2419.6	>2400	0	0	<1	<1					
Negative -/- (P. Aeruginosa)		↓		0	0	<1	<1	0	0	<1	<1					

JA 3/5/23

Data Entered By: 3/5/23 Data Reviewed By:

Enthalpy Analytical, Orange, Logbook # BK1064

SM 9223B-b, Quanti-tray, Rev 4, 11/25/2022

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129046

570-129046 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBBC_20230226	2/26/23	1245	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EB_20230226-1	2/26/23	1245	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 1245
																									DO (mg/L) 4.44
																									pH 7.01
																									Temp (°C/F) 52.2
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1535
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595

Please email data to kmiller@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.8, 2.2/2.1 SC12

SAP COC 2019/2020 VERSION 3

4/11/2023

129046

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in acienda Heights CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Hacienda Heights CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBBC_20230226	2/26/23	1245	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1245	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.01 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1620	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1845	Received:		Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/11/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208503.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
Preservation Code:																				
EPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230226-2 (570-129046-3)	2/26/23	12:45 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3.1.23 15:40	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 ~ DT75

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129046-3

Login Number: 129046
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129046-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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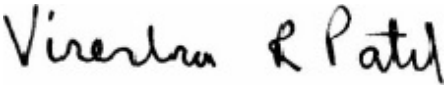

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Authorized for release by
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-4

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129046-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129046-4

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Dioxin
Method 1613B: The automated ending resolution check scheduled to be performed on March 20, 2023 at approximately 22:23 did not print. A manual resolution check was performed, without retuning, at the end of the second sequence on March 21, 2023 at 10:21, which indicated that the instrument maintained 10,000 resolution. The approximately 12 hour delay in printing the ending resolution check has no impact on the data.

EPBBC_20230226 (570-129046-1), (CCV 320-662109/2), (LCS 320-659338/2-A), (LCSD 320-659338/3-A), (MB 320-659338/1-A) and (WDM 320-662109/1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-4

Client Sample ID: EPBBC_20230226

Lab Sample ID: 570-129046-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000017	J,DX q MB	0.000048	0.00000029	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000097	J,DX MB	0.000048	0.00000031	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000044	J,DX q MB	0.000048	0.00000033	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000013	J,DX MB	0.000048	0.00000050	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000031	J,DX MB	0.000048	0.00000045	ug/L	1		1613B	Total/NA
OCDD	0.000099	MB	0.000095	0.00000090	ug/L	1		1613B	Total/NA
OCDF	0.000010	J,DX MB	0.000095	0.00000036	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000056	J,DX q MB	0.000048	0.00000029	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000027	J,DX q MB	0.000048	0.00000034	ug/L	1		1613B	Total/NA
Total HpCDD	0.000028	J,DX MB	0.000048	0.00000050	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000077	J,DX MB	0.000048	0.00000046	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000095	0.00000084	ug/L		03/09/23 04:30	03/20/23 20:02	1
2,3,7,8-TCDF	ND		0.0000095	0.00000037	ug/L		03/09/23 04:30	03/20/23 20:02	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000051	ug/L		03/09/23 04:30	03/20/23 20:02	1
1,2,3,7,8-PeCDF	ND		0.000048	0.00000026	ug/L		03/09/23 04:30	03/20/23 20:02	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000029	ug/L		03/09/23 04:30	03/20/23 20:02	1
1,2,3,4,7,8-HxCDD	**0.0000017**	**J,DX q MB**	0.000048	0.00000029	ug/L		03/09/23 04:30	03/20/23 20:02	1
1,2,3,6,7,8-HxCDD	**0.00000097**	**J,DX MB**	0.000048	0.00000031	ug/L		03/09/23 04:30	03/20/23 20:02	1
1,2,3,7,8,9-HxCDD	ND		0.000048	0.00000027	ug/L		03/09/23 04:30	03/20/23 20:02	1
1,2,3,4,7,8-HxCDF	ND		0.000048	0.00000035	ug/L		03/09/23 04:30	03/20/23 20:02	1
1,2,3,6,7,8-HxCDF	ND		0.000048	0.00000035	ug/L		03/09/23 04:30	03/20/23 20:02	1
1,2,3,7,8,9-HxCDF	**0.00000044**	**J,DX q MB**	0.000048	0.00000033	ug/L		03/09/23 04:30	03/20/23 20:02	1
2,3,4,6,7,8-HxCDF	ND		0.000048	0.00000031	ug/L		03/09/23 04:30	03/20/23 20:02	1
1,2,3,4,6,7,8-HpCDD	**0.000013**	**J,DX MB**	0.000048	0.00000050	ug/L		03/09/23 04:30	03/20/23 20:02	1
1,2,3,4,6,7,8-HpCDF	**0.0000031**	**J,DX MB**	0.000048	0.00000045	ug/L		03/09/23 04:30	03/20/23 20:02	1
1,2,3,4,7,8,9-HpCDF	ND		0.000048	0.00000047	ug/L		03/09/23 04:30	03/20/23 20:02	1
OCDD	**0.000099**	**MB**	0.000095	0.00000090	ug/L		03/09/23 04:30	03/20/23 20:02	1
OCDF	**0.000010**	**J,DX MB**	0.000095	0.00000036	ug/L		03/09/23 04:30	03/20/23 20:02	1
Total TCDD	ND		0.0000095	0.00000084	ug/L		03/09/23 04:30	03/20/23 20:02	1
Total TCDF	ND		0.0000095	0.00000037	ug/L		03/09/23 04:30	03/20/23 20:02	1
Total PeCDD	ND		0.000048	0.00000051	ug/L		03/09/23 04:30	03/20/23 20:02	1
Total PeCDF	ND		0.000048	0.00000029	ug/L		03/09/23 04:30	03/20/23 20:02	1
Total HxCDD	**0.0000056**	**J,DX q MB**	0.000048	0.00000029	ug/L		03/09/23 04:30	03/20/23 20:02	1
Total HxCDF	**0.0000027**	**J,DX q MB**	0.000048	0.00000034	ug/L		03/09/23 04:30	03/20/23 20:02	1
Total HpCDD	**0.000028**	**J,DX MB**	0.000048	0.00000050	ug/L		03/09/23 04:30	03/20/23 20:02	1
Total HpCDF	**0.0000077**	**J,DX MB**	0.000048	0.00000046	ug/L		03/09/23 04:30	03/20/23 20:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*25 - 164*	*03/09/23 04:30*	*03/20/23 20:02*	*1*
13C-2,3,7,8-TCDF	*71*		*24 - 169*	*03/09/23 04:30*	*03/20/23 20:02*	*1*
13C-1,2,3,7,8-PeCDD	*94*		*25 - 181*	*03/09/23 04:30*	*03/20/23 20:02*	*1*
13C-1,2,3,7,8-PeCDF	*82*		*24 - 185*	*03/09/23 04:30*	*03/20/23 20:02*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBBC_20230226
Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	86		21 - 178	03/09/23 04:30	03/20/23 20:02	1
13C-1,2,3,4,7,8-HxCDD	82		32 - 141	03/09/23 04:30	03/20/23 20:02	1
13C-1,2,3,6,7,8-HxCDD	78		28 - 130	03/09/23 04:30	03/20/23 20:02	1
13C-1,2,3,4,7,8-HxCDF	70		26 - 152	03/09/23 04:30	03/20/23 20:02	1
13C-1,2,3,6,7,8-HxCDF	74		26 - 123	03/09/23 04:30	03/20/23 20:02	1
13C-1,2,3,7,8,9-HxCDF	81		29 - 147	03/09/23 04:30	03/20/23 20:02	1
13C-2,3,4,6,7,8-HxCDF	78		28 - 136	03/09/23 04:30	03/20/23 20:02	1
13C-1,2,3,4,6,7,8-HpCDD	96		23 - 140	03/09/23 04:30	03/20/23 20:02	1
13C-1,2,3,4,6,7,8-HpCDF	78		28 - 143	03/09/23 04:30	03/20/23 20:02	1
13C-1,2,3,4,7,8,9-HpCDF	90		26 - 138	03/09/23 04:30	03/20/23 20:02	1
13C-OCDD	95		17 - 157	03/09/23 04:30	03/20/23 20:02	1
13C-OCDF	88		17 - 157	03/09/23 04:30	03/20/23 20:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	82		35 - 197	03/09/23 04:30	03/20/23 20:02	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-129046-1	EPBBC_20230226	82
MB 320-659338/1-A	Method Blank	84

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-659338/2-A	Lab Control Sample	85
LCSD 320-659338/3-A	Lab Control Sample Dup	86

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-129046-1	EPBBC_20230226	77	71	94	82	86	82	78	70
MB 320-659338/1-A	Method Blank	71	62	90	77	78	70	72	59

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-129046-1	EPBBC_20230226	74	81	78	96	78	90	95	88
MB 320-659338/1-A	Method Blank	65	71	69	88	71	81	89	80

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-659338/2-A	Lab Control Sample	65	58	83	71	70	63	62	51
LCSD 320-659338/3-A	Lab Control Sample Dup	77	70	96	82	84	72	68	57

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-659338/2-A	Lab Control Sample	56	65	61	78	63	72	78	71
LCSD 320-659338/3-A	Lab Control Sample Dup	64	75	71	91	71	84	93	84

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-4

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-659338/1-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 659338

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000097	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,7,8-TCDF	ND		0.000010	0.00000055	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000045	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000037	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8-HxCDD	0.00000174	J,DX	0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,6,7,8-HxCDD	0.000000455	J,DX q	0.000050	0.00000029	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000025	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,7,8,9-HxCDF	0.000000967	J,DX	0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,6,7,8-HpCDD	0.00000104	J,DX q	0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,6,7,8-HpCDF	0.00000126	J,DX	0.000050	0.00000029	ug/L		03/09/23 04:30	03/20/23 13:41	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000032	ug/L		03/09/23 04:30	03/20/23 13:41	1
OCDD	0.0000112	J,DX	0.00010	0.00000031	ug/L		03/09/23 04:30	03/20/23 13:41	1
OCDF	0.00000213	J,DX q	0.00010	0.00000039	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total TCDD	ND		0.000010	0.00000097	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total TCDF	ND		0.000010	0.00000055	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total PeCDD	ND		0.000050	0.00000045	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total PeCDF	ND		0.000050	0.00000042	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HxCDD	0.00000263	J,DX q	0.000050	0.00000028	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HxCDF	0.000000967	J,DX	0.000050	0.00000026	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HpCDD	0.00000272	J,DX q	0.000050	0.00000024	ug/L		03/09/23 04:30	03/20/23 13:41	1
Total HpCDF	0.00000126	J,DX	0.000050	0.00000031	ug/L		03/09/23 04:30	03/20/23 13:41	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*03/09/23 04:30*	*03/20/23 13:41*	*1*
13C-2,3,7,8-TCDF	*62*		*24 - 169*	*03/09/23 04:30*	*03/20/23 13:41*	*1*
13C-1,2,3,7,8-PeCDD	*90*		*25 - 181*	*03/09/23 04:30*	*03/20/23 13:41*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-659338/1-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	77		24 - 185	03/09/23 04:30	03/20/23 13:41	1
13C-2,3,4,7,8-PeCDF	78		21 - 178	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8-HxCDD	70		32 - 141	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,6,7,8-HxCDD	72		28 - 130	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8-HxCDF	59		26 - 152	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,6,7,8-HxCDF	65		26 - 123	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,7,8,9-HxCDF	71		29 - 147	03/09/23 04:30	03/20/23 13:41	1
13C-2,3,4,6,7,8-HxCDF	69		28 - 136	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,6,7,8-HpCDD	88		23 - 140	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,6,7,8-HpCDF	71		28 - 143	03/09/23 04:30	03/20/23 13:41	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	03/09/23 04:30	03/20/23 13:41	1
13C-OCDD	89		17 - 157	03/09/23 04:30	03/20/23 13:41	1
13C-OCDF	80		17 - 157	03/09/23 04:30	03/20/23 13:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	84		35 - 197	03/09/23 04:30	03/20/23 13:41	1

Lab Sample ID: LCS 320-659338/2-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 659338

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000186		ug/L		93	67 - 158		
2,3,7,8-TCDF			0.000200	0.000212		ug/L		106	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000901		ug/L		90	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000947		ug/L		95	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000953		ug/L		95	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000912		ug/L		91	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.000959		ug/L		96	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000963		ug/L		96	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000953		ug/L		95	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000956		ug/L		96	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000924		ug/L		92	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000948		ug/L		95	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000934		ug/L		93	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000984		ug/L		98	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000935		ug/L		94	78 - 138		
OCDD			0.00200	0.00191		ug/L		96	78 - 144		
OCDF			0.00200	0.00195		ug/L		97	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	65		20 - 175
13C-2,3,7,8-TCDF	58		22 - 152
13C-1,2,3,7,8-PeCDD	83		21 - 227
13C-1,2,3,7,8-PeCDF	71		21 - 192
13C-2,3,4,7,8-PeCDF	70		13 - 328
13C-1,2,3,4,7,8-HxCDD	63		21 - 193
13C-1,2,3,6,7,8-HxCDD	62		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-659338/2-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	51		19 - 202
13C-1,2,3,6,7,8-HxCDF	56		21 - 159
13C-1,2,3,7,8,9-HxCDF	65		17 - 205
13C-2,3,4,6,7,8-HxCDF	61		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	78		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	63		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	72		20 - 186
13C-OCDD	78		13 - 199
13C-OCDF	71		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-659338/3-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 659338

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000197		ug/L		98	67 - 158	6	50
2,3,7,8-TCDF			0.000200	0.000218		ug/L		109	75 - 158	3	50
1,2,3,7,8-PeCDD			0.00100	0.000927		ug/L		93	70 - 142	3	50
1,2,3,7,8-PeCDF			0.00100	0.000974		ug/L		97	80 - 134	3	50
2,3,4,7,8-PeCDF			0.00100	0.000961		ug/L		96	68 - 160	1	50
1,2,3,4,7,8-HxCDD			0.00100	0.000919		ug/L		92	70 - 164	1	50
1,2,3,6,7,8-HxCDD			0.00100	0.00100		ug/L		100	76 - 134	4	50
1,2,3,7,8,9-HxCDD			0.00100	0.00101		ug/L		101	64 - 162	4	50
1,2,3,4,7,8-HxCDF			0.00100	0.000989		ug/L		99	72 - 134	4	50
1,2,3,6,7,8-HxCDF			0.00100	0.000954		ug/L		95	84 - 130	0	50
1,2,3,7,8,9-HxCDF			0.00100	0.000953		ug/L		95	78 - 130	3	50
2,3,4,6,7,8-HxCDF			0.00100	0.000958		ug/L		96	70 - 156	1	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000942		ug/L		94	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000988		ug/L		99	82 - 122	0	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000957		ug/L		96	78 - 138	2	50
OCDD			0.00200	0.00195		ug/L		97	78 - 144	2	50
OCDF			0.00200	0.00199		ug/L		99	63 - 170	2	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 175
13C-2,3,7,8-TCDF	70		22 - 152
13C-1,2,3,7,8-PeCDD	96		21 - 227
13C-1,2,3,7,8-PeCDF	82		21 - 192
13C-2,3,4,7,8-PeCDF	84		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 193
13C-1,2,3,6,7,8-HxCDD	68		25 - 163
13C-1,2,3,4,7,8-HxCDF	57		19 - 202
13C-1,2,3,6,7,8-HxCDF	64		21 - 159
13C-1,2,3,7,8,9-HxCDF	75		17 - 205
13C-2,3,4,6,7,8-HxCDF	71		22 - 176

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-659338/3-A
Matrix: Water
Analysis Batch: 662109

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 659338

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	91		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	71		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	84		20 - 186
13C-OCDD	93		13 - 199
13C-OCDF	84		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	86		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-4

Specialty Organics

Prep Batch: 659338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	1613B	
MB 320-659338/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-659338/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-659338/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 662109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	1613B	659338
MB 320-659338/1-A	Method Blank	Total/NA	Water	1613B	659338
LCS 320-659338/2-A	Lab Control Sample	Total/NA	Water	1613B	659338
LCSD 320-659338/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	659338

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-129046-4
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: EPBBC_20230226
Lab Sample ID: 570-129046-1
Date Collected: 02/26/23 12:45
Matrix: Water
Date Received: 02/27/23 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1049.3 mL	20.0 uL	659338	03/09/23 04:30	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	662109	03/20/23 20:02	DB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
j ro/ectSBite: goeinF BBLRIBMA and gs j

Job ID: 570-12309P-9

Laboratory: Eurofins Sacramento

All accreditationf SertiNcationf held by thif laboratory are lif ted. pot all accreditationf SertiNcationf are akklicable to thif rekort.

Authority	Program	Identification Number	Expiration Date
Alaf (a UTB) 4	Btate	17-020	02-20-29
Ap Ag	Dekt. oNDeNenf e ERAj	R29P6	01-20-29
Ap Ag	Dekt. oNEnerFy	R29P6.01	01-20-29
Ap Ag	IB8 SEC 17025	R29P6	01-20-29
AriCona	Btate	Az0706	06-11-2Z
Ar(anf af DEQ	Btate	66-0P31	0P-17-2Z
CaliNornia	Btate	2637	01-22-29
Colorado	Btate	CA0009	06-Z1-2Z
Llorida	p ERAj	E67570	0P-Z0-2Z
GeorFia	Btate	9090	01-23-29
Hawaii	Btate	<cert p o.>	01-23-29
Illinoif	p ERAj	2000P0	0Z-17-29
Kanf af	p ERAj	E-10Z75	10-Z1-2Z
Rouif iana	p ERAj	01399	0P-Z0-2Z
Rouif iana UAll4	p ERAj	01399	0P-Z0-2Z
s aine	Btate	CA00009	09-19-29
s ichiFan	Btate	3397	01-Z1-2Z *
p evada	Btate	CA00099	07-Z1-2Z
p ew Hamkf hire	p ERAj	2337	09-16-2Z
p ew Jerf ey	p ERAj	CA005	0P-Z0-2Z
p ew Yor(	p ERAj	11PPP	09-01-2Z
8 hio	Btate	91252	01-23-29
8 reFon	p ERAj	9090	01-23-29
) exaf	p ERAj	) 109709Z33-13-1Z	05-Z1-2Z
TB Lif h & WildliNe	TB Lederal j roFramf	56996	09-Z0-2Z
TBDA	TB Lederal j roFramf	j ZZ0-16-002Z3	02-26-2P
Ttah	p ERAj	CA000992021-12	02-26-2Z *
VirFinia	p ERAj	9P0276	0Z-19-2Z *
Waf hinFton	Btate	C561	05-05-2Z
Wef t VirFinia UDW4	Btate	33Z0C	12-Z1-2Z
Wif conf in	Btate	336209P60	06-Z1-2Z
WyominF	Btate j roFram	6) s B-R	01-26-13 *

* AccreditationSCertiNcation renewal kendinF - accreditationSertiNcation conf idered valid.

EuroNnf Calf cience

3/21/2023

Method Summary

Client: Haley & Aldrich, Inc.
SroGct9 ite: Wbeins / / Pj l/ BA and Wg S

Job ID: 570-124063-6

Method	Method Description	Protocol	Laboratory
131LW	DioMnf and Pmranf EHBx C9HBg / u	FSA	FF(/ AC
131LW	/ eRaratory Pmnnel Ej 9 uFMraction) ith / oMhlet FMraction oTDioMn and Pmranf	FSA	FF(/ AC

Protocol References:

FSA p w/ Fn=ironUental Srotection Asency

Laboratory References:

FF(/ AC p FmroTnf / acraUento, vv0 Bi=erf ide Sar8) ay, k ef t / acraUento, CA 45305, (Fj E413uL7L-5300

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129046-1	EPBBC_20230226	Water	02/26/23 12:45	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129046

570-129046 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBBC_20230226	2/26/23	1245	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EB_20230226-1	2/26/23	1245	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 1245
																									DO (mg/L) 4.44
																									pH 7.01
																									Temp (°C/F) 52.2
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1535
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.8, 2.2/2.1 SC12

Page 12 of 27

1 2

3/21/2023

SAP COC 2019/2020 VERSION 3

129046

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Hacienda Heights CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights CA	Asbestos (E100.2)
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBBC_20230226	2/26/23	1245	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
TB_20230226-2	2/26/23	1245	TB	WM	3	N	N				X														
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.01 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1620	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1845	Received:		Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

3/21/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208503.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X													X	
EPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230226-2 (570-129046-3)	2/26/23	12:45 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*		***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*	
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Special Instructions/QC Requirements:	
Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	3-1-23 15:40	EC	[signature]	3-1-23 15:40	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - D270

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208734.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129046-4
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/15/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		02/24/23 15:15	KC		3.1.23 930	DSRC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.7c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129046-4

Login Number: 129046
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129046-4

Login Number: 129046
List Number: 3
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/01/23 01:40 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 6/8/2023 12:09:29 PM Revision 1

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129046-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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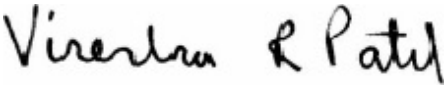
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129046-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129046-5

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 5/21/2023. The report (revision 1) is being revised due to: The clients office requested the full EPA 608.3 list to be reported..

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-5

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs- 2-CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129046-1	EPBBC_20230226	Water	02/26/23 12:45	02/27/23 18:00
570-129046-3	TB_20230226-2	Water	02/26/23 12:45	02/27/23 18:00

Certificate of Analysis

FINAL REPORT

Work Orders: 3C02086

Project: 570-129046-5

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 6/02/2023
Received Date: 3/1/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #: 570-129046-5
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/01/23 with the Chain-of-Custody document. The samples were received in good condition, at 4.1 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: EPBBC_20230226 (570-129046-1) — Sampled: 02/26/23 12:45 by Client
3C02086-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C0328 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/03/23 09:45				**Analyst:** RJG
4,4´-DDD	ND	0.0027	0.050	ug/l	1	03/16/23	
4,4´-DDE	ND	0.0018	0.050	ug/l	1	03/16/23	
4,4´-DDT	ND	0.0028	0.050	ug/l	1	03/16/23	
Aldrin	ND	0.0010	0.050	ug/l	1	03/16/23	
alpha-BHC	ND	0.0011	0.050	ug/l	1	03/16/23	
Aroclor 1016	ND	0.10	1.0	ug/l	1	03/16/23	
Aroclor 1221	ND	0.10	1.0	ug/l	1	03/16/23	
Aroclor 1232	ND	0.10	1.0	ug/l	1	03/16/23	
Aroclor 1242	ND	0.10	1.0	ug/l	1	03/16/23	
Aroclor 1248	ND	0.10	1.0	ug/l	1	03/16/23	
Aroclor 1254	ND	0.10	1.0	ug/l	1	03/16/23	
Aroclor 1260	ND	0.10	1.0	ug/l	1	03/16/23	
beta-BHC	ND	0.0015	0.050	ug/l	1	03/16/23	
Chlordane (tech)	ND	0.043	0.50	ug/l	1	03/16/23	
delta-BHC	ND	0.0019	0.050	ug/l	1	03/16/23	
Dieldrin	ND	0.0017	0.050	ug/l	1	03/16/23	
Endosulfan I	ND	0.0019	0.050	ug/l	1	03/16/23	Q-ME
Endosulfan II	ND	0.0019	0.050	ug/l	1	03/16/23	
Endosulfan sulfate	ND	0.0013	0.050	ug/l	1	03/16/23	
Endrin	ND	0.0017	0.050	ug/l	1	03/16/23	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Sample Results

(Continued)

Sample: EPBBC_20230226 (570-129046-1)
3C02086-01 (Water)

Sampled: 02/26/23 12:45 by Client
(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C0328 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/03/23 09:45				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.050	ug/l	1	03/16/23	
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l	1	03/16/23	
Heptachlor	ND	0.0023	0.050	ug/l	1	03/16/23	
Heptachlor epoxide	ND	0.0018	0.050	ug/l	1	03/16/23	
Methoxychlor	ND	0.010	0.050	ug/l	1	03/16/23	
Toxaphene	ND	0.25	2.0	ug/l	1	03/16/23	
Surrogate(s)							
Decachlorobiphenyl	*41%*		*33-133*	*Conc: 0.0390*		*03/16/23*	
Tetrachloro-meta-xylene	*59%*		*32-130*	*Conc: 0.0564*		*03/16/23*	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C0328-BLK1)					**Prepared: 03/03/23 Analyzed: 03/16/23**						
4,4´-DDD	ND	0.0027	0.050	ug/l							
4,4´-DDE	ND	0.0018	0.050	ug/l							
4,4´-DDT	ND	0.0028	0.050	ug/l							
Aldrin	ND	0.0010	0.050	ug/l							
alpha-BHC	ND	0.0011	0.050	ug/l							
Aroclor 1016	ND	0.029	1.0	ug/l							
Aroclor 1221	ND	0.060	1.0	ug/l							
Aroclor 1232	ND	0.083	1.0	ug/l							
Aroclor 1242	ND	0.095	1.0	ug/l							
Aroclor 1248	ND	0.083	1.0	ug/l							
Aroclor 1254	ND	0.040	1.0	ug/l							
Aroclor 1260	ND	0.055	1.0	ug/l							
beta-BHC	ND	0.0015	0.050	ug/l							
Chlordane (tech)	ND	0.043	0.50	ug/l							
delta-BHC	ND	0.0019	0.050	ug/l							
Dieldrin	ND	0.0017	0.050	ug/l							
Endosulfan I	ND	0.0019	0.050	ug/l							
Endosulfan II	ND	0.0019	0.050	ug/l							
Endosulfan sulfate	ND	0.0013	0.050	ug/l							
Endrin	ND	0.0017	0.050	ug/l							
Endrin aldehyde	ND	0.0019	0.050	ug/l							
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l							
Heptachlor	ND	0.0023	0.050	ug/l							
Heptachlor epoxide	ND	0.0018	0.050	ug/l							
Methoxychlor	ND	0.0038	0.050	ug/l							
Toxaphene	ND	0.085	2.0	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.0741*			*ug/l*	*0.100*		*74*	*33-133*			
Tetrachloro-meta-xylene	*0.0587*			*ug/l*	*0.100*		*59*	*32-130*			
LCS (W3C0328-BS1)					**Prepared: 03/03/23 Analyzed: 03/16/23**						
4,4´-DDD	0.0885	0.0027	0.050	ug/l	0.100		88	48-130			
4,4´-DDE	0.0749	0.0018	0.050	ug/l	0.100		75	54-130			
4,4´-DDT	0.0629	0.0028	0.050	ug/l	0.100		63	46-137			
Aldrin	0.0662	0.0010	0.050	ug/l	0.100		66	54-130			
alpha-BHC	0.0737	0.0011	0.050	ug/l	0.100		74	49-130			
beta-BHC	0.0814	0.0015	0.050	ug/l	0.100		81	39-130			
delta-BHC	0.0852	0.0019	0.050	ug/l	0.100		85	51-130			
Dieldrin	0.0671	0.0017	0.050	ug/l	0.100		67	58-130			
Endosulfan I	0.0557	0.0019	0.050	ug/l	0.100		56	57-141			Q-ME
Endosulfan II	0.0636	0.0019	0.050	ug/l	0.100		64	22-171			
Endosulfan sulfate	0.0805	0.0013	0.050	ug/l	0.100		80	38-132			
Endrin	0.0745	0.0017	0.050	ug/l	0.100		75	51-130			
Endrin aldehyde	0.0679	0.0019	0.050	ug/l	0.100		68	18-130			

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Quality Control Results

(Continued)

Chlorinated Pesticides and/or PCBs by GC/ECD (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
LCS (W3C0328-BS1)					**Prepared: 03/03/23**	**Analyzed: 03/16/23**					
gamma-BHC (Lindane)	0.0748	0.0015	0.050	ug/l	0.100		75	43-130			
Heptachlor	0.0687	0.0023	0.050	ug/l	0.100		69	43-130			
Heptachlor epoxide	0.0756	0.0018	0.050	ug/l	0.100		76	57-132			
Methoxychlor	0.0652	0.0038	0.050	ug/l	0.100		65	50-130			
Surrogate(s)											
Decachlorobiphenyl	*0.0708*			*ug/l*	*0.100*		*71*	*33-133*			
Tetrachloro-meta-xylene	*0.0638*			*ug/l*	*0.100*		*64*	*32-130*			
LCS Dup (W3C0328-BSD1)					**Prepared: 03/03/23**	**Analyzed: 03/16/23**					
4,4´-DDD	0.0744	0.0027	0.050	ug/l	0.100		74	48-130	17	30	
4,4´-DDE	0.0631	0.0018	0.050	ug/l	0.100		63	54-130	17	30	
4,4´-DDT	0.0535	0.0028	0.050	ug/l	0.100		53	46-137	16	30	
Aldrin	0.0564	0.0010	0.050	ug/l	0.100		56	54-130	16	30	
alpha-BHC	0.0617	0.0011	0.050	ug/l	0.100		62	49-130	18	30	
beta-BHC	0.0665	0.0015	0.050	ug/l	0.100		67	39-130	20	30	
delta-BHC	0.0742	0.0019	0.050	ug/l	0.100		74	51-130	14	30	
Dieldrin	0.0577	0.0017	0.050	ug/l	0.100		58	58-130	15	30	
Endosulfan I	0.0473	0.0019	0.050	ug/l	0.100		47	57-141	16	30	Q-ME, J
Endosulfan II	0.0544	0.0019	0.050	ug/l	0.100		54	22-171	16	30	
Endosulfan sulfate	0.0685	0.0013	0.050	ug/l	0.100		69	38-132	16	30	
Endrin	0.0637	0.0017	0.050	ug/l	0.100		64	51-130	16	30	
Endrin aldehyde	0.0637	0.0019	0.050	ug/l	0.100		64	18-130	6	30	
gamma-BHC (Lindane)	0.0626	0.0015	0.050	ug/l	0.100		63	43-130	18	30	
Heptachlor	0.0571	0.0023	0.050	ug/l	0.100		57	43-130	18	30	
Heptachlor epoxide	0.0639	0.0018	0.050	ug/l	0.100		64	57-132	17	30	
Methoxychlor	0.0555	0.0038	0.050	ug/l	0.100		55	50-130	16	30	
Surrogate(s)											
Decachlorobiphenyl	*0.0654*			*ug/l*	*0.100*		*65*	*33-133*			
Tetrachloro-meta-xylene	*0.0536*			*ug/l*	*0.100*		*54*	*32-130*			

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Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
Q-ME	Acceptable QC with marginal exceedance
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

300208C

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208503.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-5
Address: 14859 East Clark Avenue,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water			X	X	X	X	7	See Attached Instructions
TB_20230226-2 (570-129046-3)	2/26/23	12:45 Pacific		Water			X				2	See Attached Instructions
							(4)	(2)	(2)	(1)		# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-1-23 15:40	EC		3-1-23 1540	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - D275

ICOC No:
570-208503

Containers

Count	Container Type	Preservative
5	Amber Glass 1 liter - unpreserved	None
4	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (EPA 608 - Pesticides/PCBs - PP list)	Level IV package, MDL, EQUIS 5C
1	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	525.2- 24 hour extraction for Diazinon and Chlyoriphcous- level IV package needed.
1	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV package, MDL, EQUIS 5C
1, 2	SUBCONTRACT	SUB (VOCs+PP+xylene+Freon 11+Freon 113+Freon 123A,Cyclohexane,cis-1,2-DCE)	Level IV package, MDL, EQUIS 5C
1, 3	SUBCONTRACT	SUB (VOCs-only A+A+2CVE (E624))	Level IV package, MDL, EQUIS 5C

7

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: 3C02086
WKO Logged by: Jerico Bolotano
Samples Checked by: Jerico Bolotano

Date/Time Received: 03/01/23 @ 15:40
# of Samples: 02
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	4.1°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)				
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Received within holding time?	☐	☒		
	Project Manager notified?	☒	☐	☐	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☒ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot#
	Free Chlorine Tested <0.1 (Organics Analyses)	☒	☐	☐	Cl Test Strip Lot#
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☐	

PM Comments

Sample Receipt Checklist Prepared by:
Signature: Jerico Bolotano Date: 03/02/23

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129046

570-129046 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBBC_20230226	2/26/23	1245	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-1	2/26/23	1245	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 1245
																									DO (mg/L) 4.44
																									pH 7.01
																									Temp (°C/F) 52.2
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1535
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Page 17 of 20

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.8, 2.2/2.1 SC12

SAP COC 2019/2020 VERSION 3

8/2023 (Rev. 1)

129046

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in acienda Heights CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Hacienda Heights CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights CA	Asbestos (E100.2)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBBC_20230226	2/26/23	1245	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1245	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.01 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1620	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1845	Received:		Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

6/8/2023 (Rev. 1)

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208503.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X														
EPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water				X	X	X	X									7	See Attached Instructions
TB_20230226-2 (570-129046-3)	2/26/23	12:45 Pacific		Water				X												2	See Attached Instructions
								(4)	(2)	(2)	(1)										# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 3-1-23 15:40	Company EC	Received by:	Date/Time: 3.1.23 1540	Company Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 - DT75

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129046-5

Login Number: 129046
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129046-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

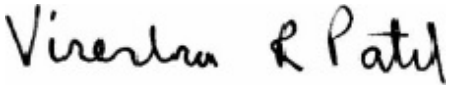
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129046-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129046-6

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129046-6
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: EPBBC_20230226 **Lab Sample ID: 570-129046-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129046-1	EPBBC_20230226	Water	02/26/23 12:45	02/27/23 18:00

aquatic bioassay & consulting laboratories, inc

March 22, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	EPBBC_20230226
DATE RECEIVED:	27 Feb - 2023
ABC LAB. NO.:	CSE0223.187

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = -3.96 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	13-7820-1832	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**			
Start Date:	28 Feb-23 14:02	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water		
Ending Date:	07 Mar-23 14:07	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable		
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:**	<24
Sample ID:	13-8797-2176	**Code:**	CSE0223.187cer	**Project:**			
Sample Date:	26 Feb-23 12:45	**Material:**	Sample Water	**Source:**	Bioassay Report		
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	EPBBC_20230226		
Sample Age:	49h (4.5 °C)	**Client:**	Eurofins Calscience				

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
16-9128-6363	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
21-0628-7741	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
16-9128-6363	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
21-0628-7741	Reproduction	Control Resp	25.25	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	25.25	23.47	27.03	20	32	0.8488	3.796	15.03%	0.00%
100		20	26.25	24.62	27.88	20	34	0.7776	3.477	13.25%	-3.96%

7d Survival Rate Detail — MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail — MD5: 76FC72B7EA30FCD6A4AC3ACD2F3AAC9

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	28	27	30	27	25	22	21	25	31
		30	32	25	29	23	23	20	21	21	21
100		22	25	24	24	26	26	20	29	31	24
		24	25	24	25	28	24	31	30	29	34

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	21-0628-7741	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:35	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	18 Mar-23 12:49	**MD5 Hash:**	76FC72B7EA30FCD6A4AC3ACD2F3AAC9	**Editor ID:**	007-730-798-8
Batch ID:	13-7820-1832	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	28 Feb-23 14:02	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	07 Mar-23 14:07	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	13-8797-2176	**Code:**	CSE0223.187cer	**Project:**	
Sample Date:	26 Feb-23 12:45	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	EPBBC_20230226
Sample Age:	49h (4.5 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	36	7.277	0.8517	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	25.25	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	10	10	1	0.7547	0.3904	Non-Significant Effect
Error	503.5	13.25	38			
Total	513.5		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	0.3842	7.353	0.5391	Equal Variances
	Mod Levene Equality of Variance Test	0.482	7.353	0.4917	Equal Variances
	Variance Ratio F Test	1.192	3.432	0.7064	Equal Variances
Distribution	Anderson-Darling A2 Test	0.8721	3.878	0.0253	Normal Distribution
	D'Agostino Kurtosis Test	1.398	2.576	0.1623	Normal Distribution
	D'Agostino Skewness Test	1.078	2.576	0.2809	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	3.116	9.21	0.2106	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1527	0.1617	0.0196	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9511	0.9236	0.0828	Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	25.25	23.47	27.03	25	20	32	0.8488	15.03%	0.00%
100		20	26.25	24.62	27.88	25	20	34	0.7776	13.25%	-3.96%

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	28	27	30	27	25	22	21	25	31
		30	32	25	29	23	23	20	21	21	21
100		22	25	24	24	26	26	20	29	31	24
		24	25	24	25	28	24	31	30	29	34

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	21-0628-7741	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:35	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	18 Mar-23 12:49	**MD5 Hash:**	76FC72B7EA30FCD6A4AC3ACD2F3AAC9	**Editor ID:**	007-730-798-8

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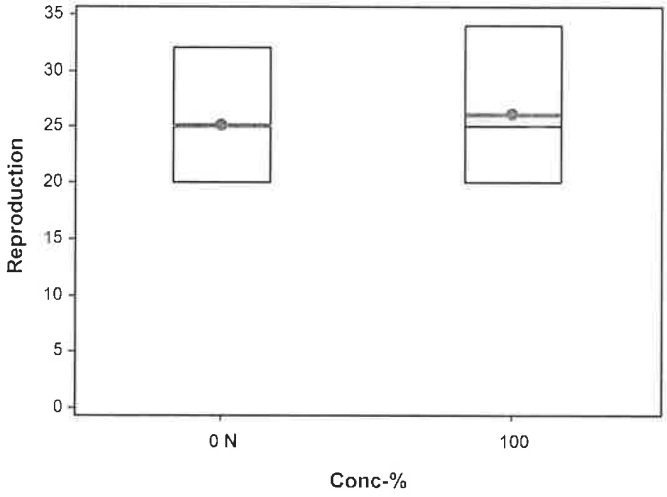
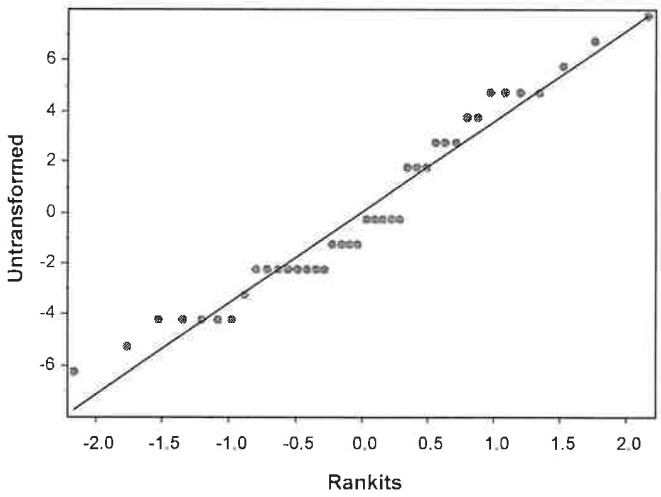




Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	16-9128-6363	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:35	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	18 Mar-23 12:49	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	007-730-798-8
Batch ID:	13-7820-1832	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	28 Feb-23 14:02	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	07 Mar-23 14:07	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	13-8797-2176	**Code:**	CSE0223.187cer	**Project:**	
Sample Date:	26 Feb-23 12:45	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	EPBBC_20230226
Sample Age:	49h (4.5 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

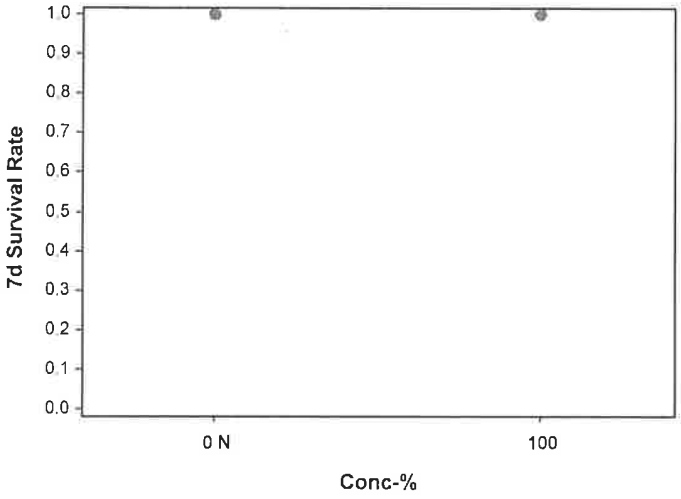
7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	16-9128-6363	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	21 Mar-23 16:35	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	18 Mar-23 12:49	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	007-730-798-8

Graphics



CETIS Measurement Report

Report Date: 21 Mar-23 16:46 (p 1 of 1)
Test Code/ID: CSE0223.187cer / 20-1137-9423

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	13-7820-1832	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**		
Start Date:	28 Feb-23 14:02	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	07 Mar-23 14:07	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24
Sample ID:	13-8797-2176	**Code:**	CSE0223.187cer	**Project:**		
Sample Date:	26 Feb-23 12:45	**Material:**	Sample Water	**Source:**	Bioassay Report	
Receipt Date:	27 Feb-23 13:45	**CAS (PC):**		**Station:**	EPBBC_20230226	
Sample Age:	49h (4.5 °C)	**Client:**	Eurofins Calscience			

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	62.62	62.19	63.06	62	63	0.06469	0.5175	0.83%	0
100		8	118	118	118	118	118	0	0	0.00%	0
Overall		16	90.31	75.07	105.6	62	118	7.149	28.6	31.67%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.6	370	377.3	369	380	0.5467	4.373	1.17%	0
100		8	684.5	681	688	679	690	0.5218	4.175	0.61%	0
Overall		16	529.1	443.5	614.6	369	690	40.15	160.6	30.35%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.887	7.712	8.063	7.6	8.2	0.02625	0.21	2.66%	0
100		8	7.775	7.668	7.882	7.6	7.9	0.01602	0.1282	1.65%	0
Overall		16	7.831	7.736	7.926	7.6	8.2	0.04446	0.1778	2.27%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	96.38	95.94	96.81	96	97	0.06469	0.5175	0.54%	0
100		8	164	164	164	164	164	0	0	0.00%	0
Overall		16	130.2	111.6	148.8	96	164	8.731	34.92	26.83%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8.038	7.994	8.081	8	8.1	0.00647	0.05176	0.64%	0
100		8	8.075	7.968	8.182	7.9	8.3	0.01602	0.1282	1.59%	0
Overall		16	8.056	8.005	8.108	7.9	8.3	0.0241	0.09639	1.20%	0 (0%)

Temperature-°C

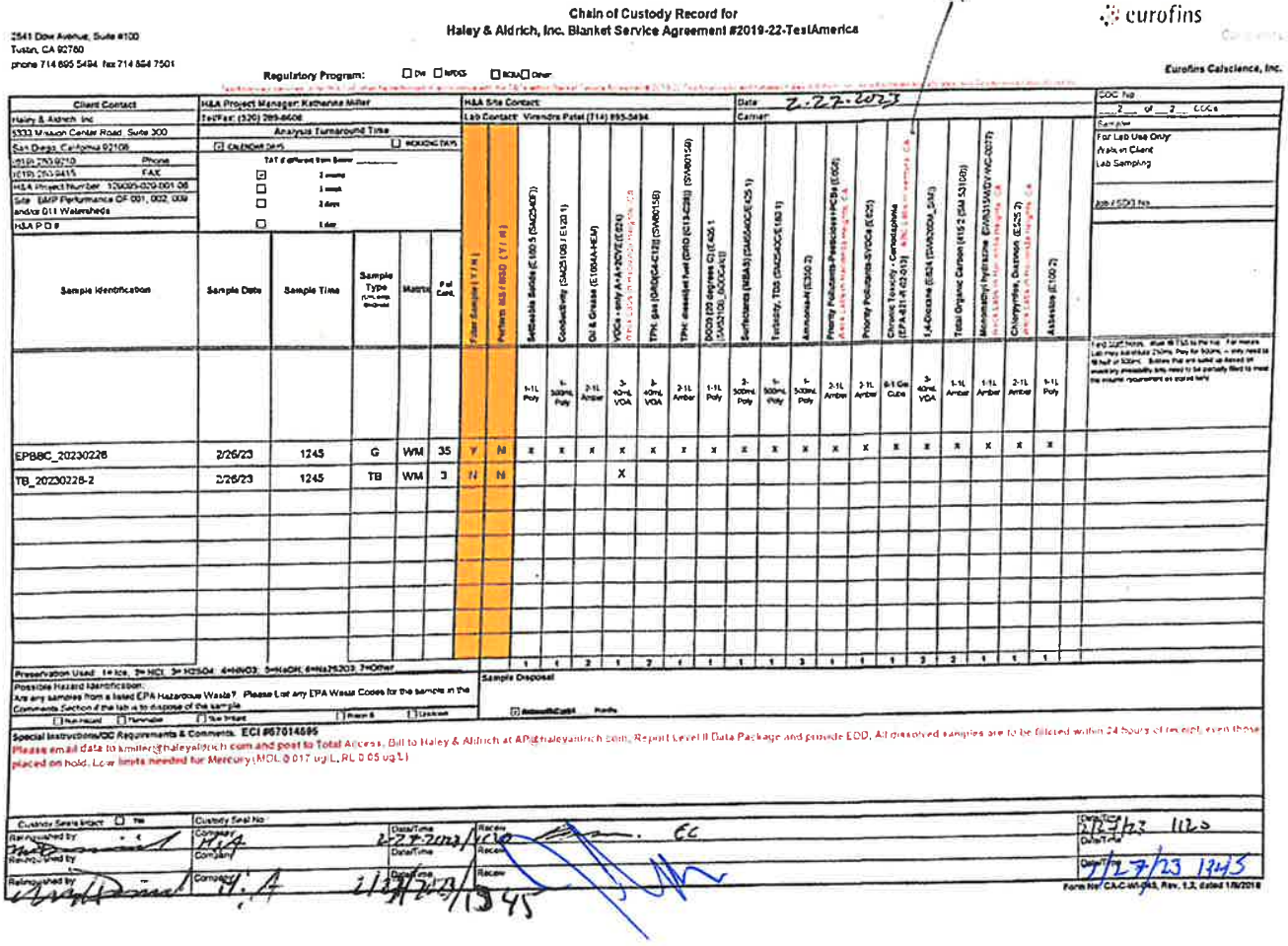
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24	24	24	24	24	0	0	0.00%	0
Overall		16	24	24	24	24	24	0	0	0.00%	0 (0%)

Scanned with CamScanner

Temp. deg. C = 4.5°C

Chlorine (mg/L) = <0.1

NH3 (mg/L) = <0.1



Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Eurofins Calscience, Inc.

Regulatory Program: ☐ Dw ☐ NPDES ☐ RCRA ☐ Other

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-22-2023	COC No: 2 of 2 COCs
Haley & Aldrich, Inc	Tel/Fax: (320) 289-8608	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	Sampler:
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			For Lab Use Only: Walk-in Client; Lab Sampling
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			
(619) 270-5670 Phone	TAT if different from Below			Job / SDG No.
(619) 270-5419 FAX	☐ 2 weeks			
H&A Project Number: 126309-020-001.06	☐ 1 week			
Site: EMP Performance OF 001, 002, XXI and/or 011 Watersheds	☐ 2 days			
H&A P.O.#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Salinity Series (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+DCE (E624)	TPH: gas (SIM)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (GRO) (C13-C28)) (SW8015B)	TOC (120 degrees C) (E415.1 (SM5310C, D, OI-HC-415))	Surfactants (MBAS) (SM5540C(E-CO.1))	Turbidity, TDS (SM2130B / E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E625)	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013)	1,4-Dioxane (E625 (SW8260B_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (EPA/815/R/07/001/WC-0037)	Chlorpyrifos, Diazinon (E525.2)	Asbestos (E100.2)
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	2-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly
EPBBC_20230226	2/26/23	1245	G	WM	35	Y	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
TB_20230228-2	2/26/23	1245	TB	WM	3	N	N				X														
								1	1	2	1	2	1	1	1	1	1	3	1	1	3	2	1	1	1

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=NaAsO2, 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the samples in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #67014695
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No:				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1610	Received by:	Company: EC	Date/Time:
Relinquished by:	Company: H&A	Date/Time: 2/27/2023 1345	Received by:	Company:	Date/Time:
					Date/Time: 2/27/23 1345

Form No: CA-C-WI-043, Rev. 1.2, dated 1/8/2018

SAP COC 2016/2020 VERSION 3

* Hand-delivered to ADC with copy of COC

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 7 February - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 15.00 ug/l
EC50 = 20.00 ug/l

ENDPOINT: REPRODUCTION

NOEC = 10.00 ug/l

IC25 = 12.18 ug/l
IC50 = 18.12 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 20 Mar-23 12:21 (p 1 of 2)
Test Code/ID: CER020723 / 14-0030-6243

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	19-0270-0407	Test Type:	Reproduction-Survival (7d)	Analyst:	Tina DeLeon
Start Date:	07 Feb-23 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Feb-23 15:45	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 2h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-3831-7124	Code:	CER020723	Project:	REF TOX
Sample Date:	07 Feb-23 14:00	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
12-2134-6724	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	✓	10	30	17.32	---	1
01-7826-1344	Reproduction	Dunnett Multiple Comparison Test	✓	10	30	17.32	14.9%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
10-0781-6132	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	13	13	13	1
				EC20	14	14	14	
				EC25	15	15	15	
				EC40	18	18	18	
				EC50	20	20	20	
20-1572-0105	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	9.744	8.161	12.04	1
			✓	IC20	11	9.214	13.1	
			✓	IC25	12.18	10.33	14.15	
			✓	IC40	15.75	14.27	17.32	
			✓	IC50	18.12	16.89	19.44	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits Lower	TAC Limits Upper	Overlap	Decision
10-0781-6132	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
12-2134-6724	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
01-7826-1344	Reproduction	Control Resp	21.6	15	<<	Yes	Passes Criteria
20-1572-0105	Reproduction	Control Resp	21.6	15	<<	Yes	Passes Criteria
01-7826-1344	Reproduction	PMSD	0.1488	0.13	0.47	Yes	Passes Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	21.6	18.77	24.43	16	29	1.249	3.95	18.29%	0.00%
3		10	27.1	24.85	29.35	21	32	0.9939	3.143	11.60%	-25.46%
5		10	27.2	25.39	29.01	23	31	0.8	2.53	9.30%	-25.93%
10		10	21.3	18.67	23.93	17	28	1.165	3.683	17.29%	1.39%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail MD5: E68F14682D021D024F00396964E3E9BD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail MD5: B6584EF080BB39328ADF89E906DB2ACD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Report Date: 20 Mar-23 12:20 (p 1 of 2)
Test Code/ID: CER020723 / 14-0030-6243

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	01-7826-1344	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	10	30	17.32	---	3.215	14.88%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	-3.649	2.133	3.215	CDF	1.0000	Non-Significant Effect
		5	18	-3.715	2.133	3.215	CDF	1.0000	Non-Significant Effect
		10	18	0.199	2.133	3.215	CDF	0.6730	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	21.6	15	<<	Yes	Passes Criteria
PMSD	0.1488	0.13	0.47	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	325.4	108.467	3	9.547	8.9E-05	Significant Effect
Error	409	11.3611	36			
Total	734.4		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	1.886	11.34	0.5963	Equal Variances
	Levene Equality of Variance Test	0.7841	4.377	0.5107	Equal Variances
	Mod Levene Equality of Variance Test	0.5917	4.377	0.6245	Equal Variances
Distribution	Anderson-Darling A2 Test	0.1802	3.878	0.9718	Normal Distribution
	D'Agostino Kurtosis Test	0.2514	2.576	0.8015	Normal Distribution
	D'Agostino Skewness Test	0.6674	2.576	0.5045	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.5086	9.21	0.7754	Normal Distribution
	Kolmogorov-Smirnov D Test	0.06346	0.1617	1.0000	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9856	0.9236	0.8811	Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	21.6	18.77	24.43	22.75	16	29	1.249	18.29%	0.00%
3		10	27.1	24.85	29.35	27	21	32	0.9939	11.60%	-25.46%
5		10	27.2	25.39	29.01	27.67	23	31	0.8	9.30%	-25.93%
10		10	21.3	18.67	23.93	20.5	17	28	1.165	17.29%	1.39%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

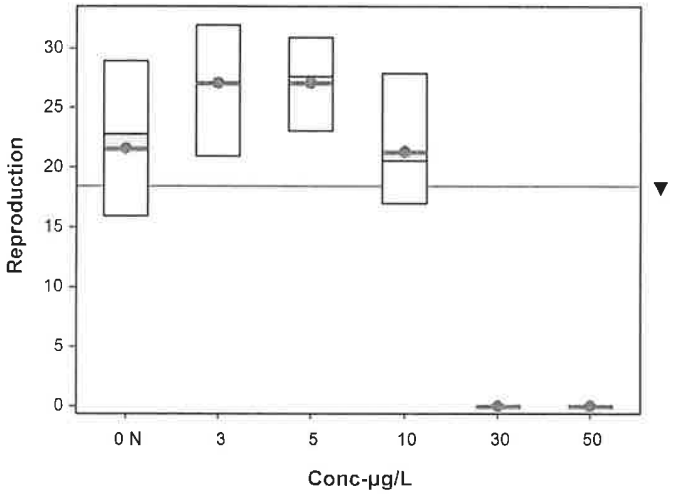
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

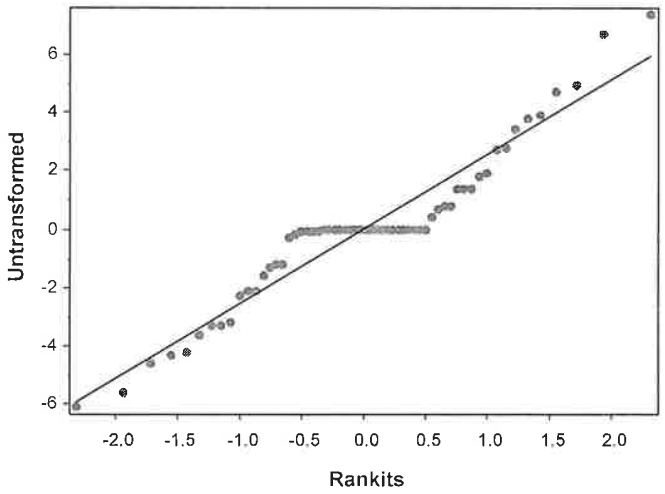
Analysis ID:	01-7826-1344	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Graphics





CETIS Analytical Report

Report Date: 20 Mar-23 12:20 (p 1 of 4)
Test Code/ID: CER020723 / 14-0030-6243

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	10-0781-6132	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8
Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	13	13	13
EC20	14	14	14
EC25	15	15	15
EC40	18	18	18
EC50	20	20	20

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	**Code**	**Count**	**Mean**	**Median**	**Min**	**Max**	**CV%**	**%Effect**	**ΣA/ΣB**	**Mean**	**%Effect**
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

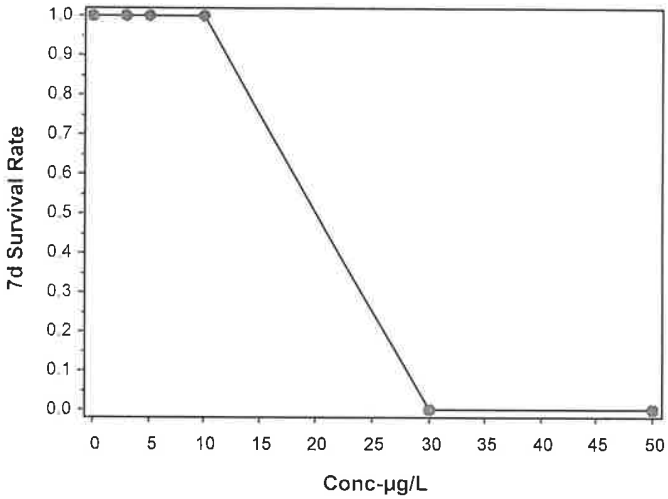
7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	10-0781-6132	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8

Graphics



Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-1572-0105	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	10 Mar-23 17:02	MD5 Hash:	B6584EF080BB39328ADF89E906DB2ACD	Editor ID:	004-984-722-8
Batch ID:	19-0270-0407	Test Type:	Reproduction-Survival (7d)	Analyst:	Tina DeLeon
Start Date:	07 Feb-23 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Feb-23 15:45	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 2h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-3831-7124	Code:	CER020723	Project:	REF TOX
Sample Date:	07 Feb-23 14:00	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	1451893	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	21.6	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	9.744	8.161	12.04
IC20	11	9.214	13.1
IC25	12.18	10.33	14.15
IC40	15.75	14.27	17.32
IC50	18.12	16.89	19.44

Reproduction Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	21.6	22.75	16	29	18.29%	0.00%	25.3	0.00%
3		10	27.1	27	21	32	11.60%	-25.46%	25.3	0.00%
5		10	27.2	27.67	23	31	9.30%	-25.93%	25.3	0.00%
10		10	21.3	20.5	17	28	17.29%	1.39%	21.3	15.81%
30		10	0	0	0	0	---	100.00%	0	100.00%
50		10	0	0	0	0	---	100.00%	0	100.00%

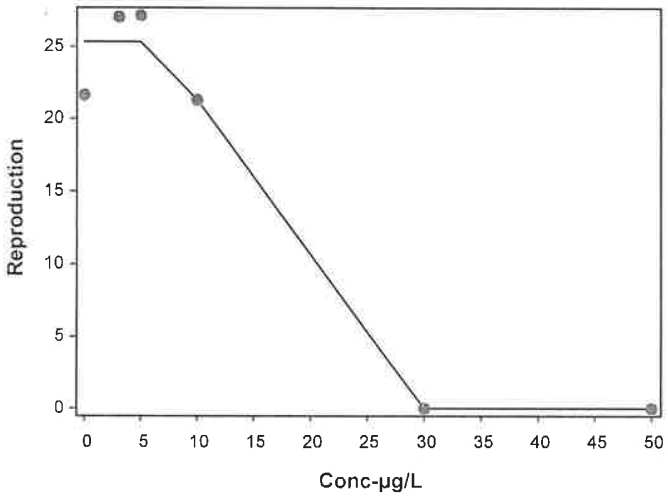
Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	29	25	22	23	20	23	18	23	17	16
3		21	27	27	32	29	27	25	27	31	25
5		30	27	31	29	26	23	24	28	28	26
10		28	20	26	18	21	22	17	18	24	19
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-1572-0105	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	B6584EF080BB39328ADF89E906DB2ACD	**Editor ID:**	004-984-722-8

Graphics



CETIS Analytical Report

Report Date: 20 Mar-23 12:21 (p 1 of 2)
Test Code/ID: CER020723 / 14-0030-6243

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-2134-6724	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	10 Mar-23 17:02	MD5 Hash:	E68F14682D021D024F00396964E3E9BD	Editor ID:	004-984-722-8
Batch ID:	19-0270-0407	Test Type:	Reproduction-Survival (7d)	Analyst:	Tina DeLeon
Start Date:	07 Feb-23 14:00	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Feb-23 15:45	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 2h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-3831-7124	Code:	CER020723	Project:	REF TOX
Sample Date:	07 Feb-23 14:00	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:	14 Feb-23 15:45	CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0000	Exact	2.7E-05	Significant Effect
		50*	0.0000	Exact	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		0	10	10	0.0000	1.0000	100.00%
50		0	10	10	0.0000	1.0000	100.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

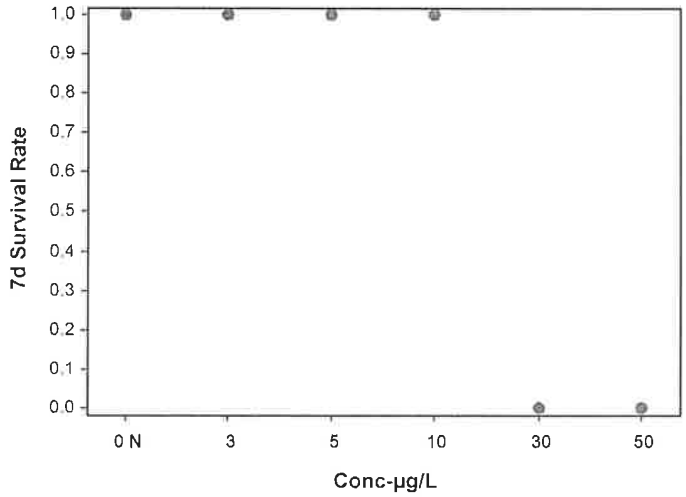
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-2134-6724	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	10 Mar-23 17:05	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	10 Mar-23 17:02	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	004-984-722-8

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	19-0270-0407	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	Tina DeLeon	
Start Date:	07 Feb-23 14:00	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	14 Feb-23 15:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d 2h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24
Sample ID:	18-3831-7124	**Code:**	CER020723	**Project:**	REF TOX	
Sample Date:	07 Feb-23 14:00	**Material:**	Copper chloride	**Source:**	Reference Toxicant	
Receipt Date:	14 Feb-23 15:45	**CAS (PC):**		**Station:**	REF TOX	
Sample Age:	---	**Client:**	ABC Labs			

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	65	65	65	65	65	0	0	0.00%	0
50		4	60	60	60	60	60	0	0	0.00%	0
Overall		12	63.33	61.77	64.9	60	65	0.7107	2.462	3.89%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.4	370.2	376.6	369	380	0.4815	3.852	1.03%	0
3		8	376.2	370.9	381.6	370	386	0.7955	6.364	1.69%	0
5		8	369.1	365.8	372.4	364	373	0.493	3.944	1.07%	0
10		8	369.9	368.6	371.2	367	372	0.1941	1.553	0.42%	0
30		6	370.3	368.9	371.8	369	373	0.2277	1.366	0.37%	0
50		3	370	365	375	368	372	0.6667	2	0.54%	0
Overall		41	371.7	370.3	373.2	364	386	0.7063	4.522	1.22%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.838	7.677	7.998	7.6	8.1	0.02403	0.1923	2.45%	0
3		8	7.763	7.596	7.929	7.5	8.1	0.02494	0.1996	2.57%	0
5		8	7.713	7.537	7.888	7.5	8.1	0.02625	0.21	2.72%	0
10		8	7.675	7.509	7.841	7.4	8	0.02478	0.1982	2.58%	0
30		6	7.617	7.295	7.938	7.1	8	0.05101	0.3061	4.02%	0
50		3	7.867	7.58	8.154	7.8	8	0.03849	0.1155	1.47%	0
Overall		41	7.737	7.668	7.805	7.1	8.1	0.03381	0.2165	2.80%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	98	98	98	98	98	0	0	0.00%	0
50		4	99	99	99	99	99	0	0	0.00%	0
Overall		12	98.33	98.02	98.65	98	99	0.1421	0.4924	0.50%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.95	7.841	8.059	7.7	8.1	0.01637	0.1309	1.65%	0
3		8	7.975	7.901	8.049	7.8	8.1	0.01108	0.08864	1.11%	0
5		8	7.95	7.841	8.059	7.7	8.1	0.01637	0.1309	1.65%	0
10		8	7.95	7.85	8.05	7.7	8.1	0.01494	0.1195	1.50%	0
30		6	7.917	7.794	8.039	7.7	8	0.01948	0.1169	1.48%	0
50		3	7.9	7.652	8.148	7.8	8	0.03333	0.1	1.27%	0
Overall		41	7.946	7.911	7.982	7.7	8.1	0.01749	0.112	1.41%	0 (0%)

CETIS Measurement Report

Report Date: 20 Mar-23 12:21 (p 2 of 2)
Test Code/ID: CER020723 / 14-0030-6243

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		5	24	24	24	24	24	0	0	0.00%	0
50		3	24	24	24	24	24	0	0	0.00%	0
Overall		40	24	24	24	24	24	0	0	0.00%	0 (0%)

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129046

570-129046 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBBC_20230226	2/26/23	1245	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EB_20230226-1	2/26/23	1245	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 1245
																									DO (mg/L) 4.44
																									pH 7.01
																									Temp (°C/F) 52.2
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1535
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.8, 2.2/2.1 SC12

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in acienda Heights CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Hacienda Heights CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights CA	Asbestos (E100.2)
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBBC_20230226	2/26/23	1245	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
TB_20230226-2	2/26/23	1245	TB	WM	3	N	N				X														
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access. Bill to Haley & Aldrich at AP@haleyaldrich.com. Report Level II Data Package and provide EDD. All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.01 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1620	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1845	Received:		Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208503.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:																	
EPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230226-2 (570-129046-3)	2/26/23	12:45 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-1-23 15:40	EC		3.1.23 15:40	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 ~ DT75

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129046-6

Login Number: 129046

List Number: 1

Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:33:48 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129046-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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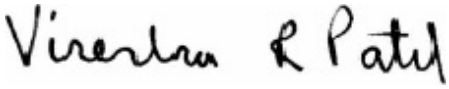
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/9/2023 10:33:48 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-7

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129046-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129046-7

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-7

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129046-1	EPBBC_20230226	Water	02/26/23 12:45	02/27/23 18:00

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322305465
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/01/2023
Analyzed: 03/10/2023

Proj: 570-208637.1/ 570-129046-7/ 57014595/ Boeing SSFL ISRA and BMP

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS				
					Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
							MFL (million fibers per liter)		
EPPBBC_20230226 (570-129046-1) 322305465-0001	3/2/2023 01:50 PM	1	1288	0.2580	≥ 0.5 µm	None Detected	ND	5.00	<5.00	0.00 - 18.00
					> 10 µm only	None Detected	ND	5.00	<5.00	0.00 - 18.00

Collection Date/Time: *02/26/2023 12:45 PM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Kyeong Corbin (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 03/14/2023 07:28:29

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

#322305465

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208637.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-7
Address: 520 Mission Street, ,	Due Date Requested: 3/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

1.4°c

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FX

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	02/28/23 1527	FC	Annette McKissack	03/01/23 935	ET Testing
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

#322305465

McKissack, Annette

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Wednesday, March 1, 2023 11:49 AM
To: McKissack, Annette
Cc: LA Testing Lab - Pasadena
Subject: RE: 570-208637.1 | 570-129046-7

[EXTERNAL E-MAIL]

Sorry waste water both levels of reporting.

Best Regards,

Virendra Patel
Project Manager

Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

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From: Virendra Patel
Sent: Wednesday, March 1, 2023 10:47 AM
To: McKissack, Annette <amckissack@latesting.com>
Cc: LA Testing Lab - Pasadena <pasadenalab@EMSL.com>
Subject: RE: 570-208637.1 | 570-129046-7

Drinking water to provide both screening levels. Thank you!

Best Regards,

Virendra Patel
Project Manager

Eurofins Environment Testing Southwest, LLC
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895 5494
Direct: 657-210-6327
Mobile: 714-887-9901

Virendra.Patel@ET.EurofinsUS.com
www.EurofinsUS.com/Env

#322305465

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From: McKissack, Annette <amckissack@latesting.com>
Sent: Wednesday, March 1, 2023 10:43 AM
To: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Cc: LA Testing Lab - Pasadena <pasadenalab@EMSL.com>
Subject: 570-208637.1 | 570-129046-7

EXTERNAL EMAIL*

Hello,

Please confirm if the above mentioned project will be analyzed as a drinking water or waste water analysis.

Thank you,

Annette McKissack
Laboratory Administrative Assistant
LA Testing 520 Mission Street South Pasadena, CA 91030
Phone: 323-254-9960 Toll Free: 800-303-0047

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Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

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129046

570-129046 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBBC_20230226	2/26/23	1245	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-1	2/26/23	1245	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 1245
																									DO (mg/L) 4.44
																									pH 7.01
																									Temp (°C/F) 52.2
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1535
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Page 13 of 16

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0 017 ug/L, RL 0 05 ug/l)

Custody Seals Intact: ☐ Yes	Custody Seal No.		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-2023/1120	Received by: EC	Date/Time: 2/23/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.8, 2.2/2.1 SC12

4/9/2023

SAP COC 2019/2020 VERSION 3

129046

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in acienda Heights CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Hacienda Heights CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBBC_20230226	2/26/23	1245	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230226-2	2/26/23	1245	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.01 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1620	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1845	Received:		Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

4/9/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208503.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
Preservation Code:																				
EPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230226-2 (570-129046-3)	2/26/23	12:45 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-1-23 15:40	EC		3.1.23 15:40	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.1 ~ DT75

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129046-7

Login Number: 129046
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 7:00:08 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-129046-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

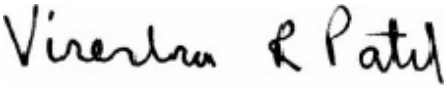
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Qualifiers

Rad

Qualifier	Qualifier Description
F	MS/MSD Recovery and/or RPD exceeds the control limits
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129046-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129046-8

Comments
No additional comments.

Receipt
The samples were received on 2/27/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.8º C and 2.1º C.

RAD
Method 900.0: Gross Alpha Beta prep batch 160-606326:

The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass: EPBBC_20230226 (570-129046-1). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha Beta prep batch 160-606236:

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 160-606326 and analytical batch 160-606671 were outside control limits for one or more analytes. In addition RER/RPD was also outside of control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 900.0: Gross Alpha Beta prep batch 160-606326:

The detection goal was not met for the following sample(s). The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank achieved the detection goal demonstrating acceptable sample preparation and instrument performance. (570-129852-R-1-F)

Method 900.0: Gross Alpha Beta prep batch 160-606326:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230226 (570-129046-1), (LCS 160-606326/2-A), (LCSB 160-606326/3-A), (MB 160-606326/1-A), (570-129852-R-1-F), (570-129852-R-1-J MS), (570-129852-R-1-L MSBT), (570-129852-R-1-M MSBTD) and (570-129852-R-1-K MSD)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231

Job ID: 570-129046-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBBC_20230226 (570-129046-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 901.1: Gamma Prep Batch 160-604032
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

**The method blank (MB) Z-score is within limits and is located in the level IV raw data.

EPBBC_20230226 (570-129046-1), (570-128840-R-1-D) and (570-128840-R-1-E DU)

Method 903.0: Radium-226 batch 602356
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time

Job ID: 570-129046-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

applied as the Activity Reference Date.
EPBBC_20230226 (570-129046-1), (LCS 160-602356/2-A), (LCSD 160-602356/3-A) and (MB 160-602356/1-A)

Methods 903.0, 9315: Radium-226 batch 603854
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Method 904.0: Radium-228 batch 602360
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: EPBBC_20230226 (570-129046-1). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 602360
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230226 (570-129046-1), (LCS 160-602360/2-A), (LCSD 160-602360/3-A) and (MB 160-602360/1-A)

Methods 904.0, 9320: Radium-228 batch 603857
The LCS recovered at (128%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCSD 160-603857/25-A)

Methods 904.0, 9320: Radium-228 batch 603857
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230226 (570-129046-1), (LCS 160-603857/2-A), (LCSD 160-603857/25-A), (MB 160-603857/1-A), (570-129852-R-1-B), (570-129852-L-1-C MS) and (570-129852-L-1-D MSD)

Method 905: Strontium-90 prep batch 160-603495:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230226 (570-129046-1), (LCS 160-603033/2-A), (LCSD 160-603033/3-A) and (MB 160-603033/1-A)

Method 905: Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Method 905: Strontium-90 batch 604379
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230226 (570-129046-1), (LCS 160-604379/2-A), (MB 160-604379/1-A), (570-129852-R-1-D), (570-129852-L-1-E MS) and (570-129852-L-1-F MSD)

Method 906.0: Tritium 605397
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is

Job ID: 570-129046-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBBC_20230226 (570-129046-1), (LCS 160-605397/2-A), (MB 160-605397/1-A), (570-129852-Q-1-B), (570-129852-K-1-D MS) and (570-129852-K-1-E MSD)

Method 906.0: The matrix spike duplicate (MSD) recovery was inadvertently not spiked. However the matrix spike (MS) was within range and all other QC was within limits. Per client, the data will be reported with this narrative.EPBBC_20230226 (570-129046-1), (570-129852-Q-1-B), (570-129852-K-1-D MS) and (570-129852-K-1-E MSD)

Method A-01-R: Isotopic Uranium Batch 605724
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.EPBBC_20230226 (570-129046-1), (LCS 160-605724/2-A), (MB 160-605724/1-A), (570-129852-R-1-E), (570-129852-L-1-G MS) and (570-129852-L-1-H MSD)

Method A-01-R: Isotopic Uranium batch 605729
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230226 (570-129046-1), (LCS 160-605729/2-A), (MB 160-605729/1-A), (570-131449-AX-1-B) and (570-131449-AX-1-C DU)

Method ExtChrom: Uranium Prep Batch 160-605729:
The following sample was prepared at a reduced aliquot due to discoloration: EPBBC_20230226 (570-129046-1).

Method ExtChrom: Uranium Prep Batch 160-605724:
The following sample was prepared at a reduced aliquot due to sediment and discoloration: EPBBC_20230226 (570-129046-1).

Method PrecSep_0: Radium-228 Prep Batch 160-602360

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230226 (570-129046-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0:

Method PrecSep-21: Radium-226 Prep Batch 160-602356

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230226 (570-129046-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21:

Method PrecSep-7: Strontium 90 Prep Batch 160-603033

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230226 (570-129046-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Client Sample ID: EPBBC_20230226 **Lab Sample ID: 570-129046-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.57	U F G	2.48	2.49	3.00	4.24	pCi/L	04/06/23 10:28	04/11/23 06:10	1
Gross Beta	**2.6W**		1.21	1.24	4.00	1.65	pCi/L	04/06/23 10:28	04/11/23 06:10	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.265	U F G	2.71	2.71	3.00	4.97	pCi/L	04/06/23 10:28	04/10/23 20:47	1
Gross Beta	**2.81**		0.861	0.906	4.00	1.10	pCi/L	04/06/23 10:28	04/10/23 20:47	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: EPA 901.1 - Cesium 1W7 & Other Gamma Emitters (GS)

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.77	U	9.02	9.02	20.0	11.0	pCi/L	03/17/23 14:08	03/29/23 17:46	1
Potassium-40	**12W**		57.8	59.7		50.2	pCi/L	03/17/23 14:08	03/29/23 17:46	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: EPA 901.1 - Cesium 1W7 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.09	U	10.0	10.0	20.0	12.8	pCi/L	03/22/23 16:26	03/30/23 05:37	1
Potassium-40	-31.4	U	113	113		172	pCi/L	03/22/23 16:26	03/30/23 05:37	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: EPA 90W0 - Radium-226 (GFPC)

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.216**		0.152	0.153	1.00	0.211	pCi/L	03/06/23 09:11	03/29/23 21:59	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*4070*		*30 - 110*	*03/20/23 09:11*	*03/29/23 61:49*	*1*

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Method: EPA 90W0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0473	U	0.0912	0.0913	1.00	0.163	pCi/L	03/16/23 07:58	04/07/23 10:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*5475*		*30 - 110*	*0321/ 263 08:45*	*0. 2082 63 10:. 4*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.638	U G	0.793	0.795	1.00	1.31	pCi/L	03/06/23 09:48	03/16/23 12:17	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*4070*		*30 - 110*	*0320/ 263 09:. 5*	*0321/ 263 16:18*	*1*
Y Carrier	*5871*		*30 - 110*	*0320/ 263 09:. 5*	*0321/ 263 16:18*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.628	U	0.473	0.477	1.00	0.720	pCi/L	03/16/23 09:45	03/30/23 12:06	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*5475*		*30 - 110*	*0321/ 263 09:. 4*	*0323025 63 16:0/*	*1*
Y Carrier	*5070*		*30 - 110*	*0321/ 263 09:. 4*	*0323025 63 16:0/*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.0636	U	0.396	0.396	3.00	0.732	pCi/L	03/09/23 13:03	03/17/23 18:33	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*8. 7.*		*30 - 110*	*032092363 13:03*	*032182363 15:33*	*1*
Y Carrier	*5476*		*30 - 110*	*032092363 13:03*	*032182363 15:33*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.0214	U	0.533	0.533	3.00	0.938	pCi/L	03/20/23 13:22	03/29/23 16:02	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*5174*		*30 - 110*	*032603 13:66*	*032692 1/ :06*	*1*
Y Carrier	*5070*		*30 - 110*	*032603 13:66*	*032692 1/ :06*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	19.8	U F	140	140	500	255	pCi/L	03/29/23 11:02	04/04/23 18:21	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	2.88		1.38	1.39	1.00	0.991	pCi/L	03/30/23 15:31	04/04/23 20:40	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBBC3202W0226
Date Collected: 02/26/2W12:45
Date Received: 02/27/2W18:00

Lab Sample ID: 570-129046-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	1.94		0.848	0.855	1.00	0.505	pCi/L	03/30/23 16:34	04/03/23 20:57	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-129046-1	EPBBC_20230226	50.0
LCS 160-602356/2-A	Lab Control Sample	87.6
LCS 160-603854/2-A	Lab Control Sample	94.8
LCSD 160-602356/3-A	Lab Control Sample Dup	83.3
LCSD 160-603854/25-A	Lab Control Sample Dup	89.2
MB 160-602356/1-A	Method Blank	87.6
MB 160-603854/1-A	Method Blank	91.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-129046-1	EPBBC_20230226	85.8

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129046-1	EPBBC_20230226	50.0	87.1
LCS 160-602360/2-A	Lab Control Sample	87.6	87.1
LCS 160-603857/2-A	Lab Control Sample	94.8	81.5
LCSD 160-602360/3-A	Lab Control Sample Dup	83.3	87.1
LCSD 160-603857/25-A	Lab Control Sample Dup	89.2	87.5
MB 160-602360/1-A	Method Blank	87.6	87.9
MB 160-603857/1-A	Method Blank	91.5	83.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129046-1	EPBBC_20230226	85.8	80.0

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129046-8
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129046-1	EPBBC_20230226	74.4	85.2
LCS 160-603033/2-A	Lab Control Sample	79.1	82.2
LCS 160-604379/2-A	Lab Control Sample	85.6	76.6
LCSD 160-603033/3-A	Lab Control Sample Dup	80.1	82.2
MB 160-603033/1-A	Method Blank	87.1	81.1
MB 160-604379/1-A	Method Blank	79.3	70.3

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-129046-1	EPBBC_20230226	81.5	80.0

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-605724/2-A	Lab Control Sample	92.1
LCS 160-605729/2-A	Lab Control Sample	38.1
MB 160-605724/1-A	Method Blank	92.8
MB 160-605729/1-A	Method Blank	46.2

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-606326/1-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606326

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.4133	U	0.657	0.658	3.00	1.12	pCi/L	04/06/23 10:28	04/10/23 20:47	1
Gross Beta	0.02677	U	0.496	0.496	4.00	0.874	pCi/L	04/06/23 10:28	04/10/23 20:47	1

Lab Sample ID: LCS 160-606326/2-A
Matrix: Water
Analysis Batch: 606895

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	51.96		7.62	3.00	2.05	pCi/L	103	75 - 125

Lab Sample ID: LCSB 160-606326/3-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606326

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	74.51		7.98	4.00	0.927	pCi/L	102	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604032/1-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604032

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.4655	U	10.3	10.3	20.0	12.1	pCi/L	03/17/23 14:08	03/22/23 19:49	1
Potassium-40	12.53	U	78.9	78.9		135	pCi/L	03/17/23 14:08	03/22/23 19:49	1

Lab Sample ID: LCS 160-604032/2-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604032

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	143200		17000		415	pCi/L	106	75 - 125
Cesium-137	40900	41780		4980	20.0	92.9	pCi/L	102	75 - 125
Cobalt-60	17800	18360		2190		50.3	pCi/L	103	75 - 125

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	5.575	U	11.5	11.5	20.0	14.5	pCi/L	03/22/23 16:26	03/29/23 21:25	1
Potassium-40	-139.9	U	180	180		285	pCi/L	03/22/23 16:26	03/29/23 21:25	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		443	pCi/L	100	75 - 125
Cesium-137	40800	42170		5030	20.0	105	pCi/L	103	75 - 125
Cobalt-60	17800	18660		2230		54.8	pCi/L	105	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-602356/1-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 602356

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03827	U	0.0641	0.0642	1.00	0.111	pCi/L	03/06/23 09:11	03/29/23 20:10	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*47*		*30 - 110*	*03/06/23 09:11*	*03/29/23 20:10*	*1*

Lab Sample ID: LCS 160-602356/2-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 602356

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	11.79		1.20	1.00	0.118	pCi/L	104	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*47*		*30 - 110*

Lab Sample ID: LCSD 160-602356/3-A
Matrix: Water
Analysis Batch: 605412

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 602356

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226	11.3	11.01		1.14	1.00	0.107	pCi/L	97	75 - 125	0.33	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*43*		*30 - 110*

Lab Sample ID: MB 160-603854/1-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603854

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.006854	U	0.0481	0.0481	1.00	0.106	pCi/L	03/16/23 07:58	04/07/23 10:41	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-603854/1-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603854

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	91.5		30 - 110	03/21/23 07:54	03/27/23 10:31	1

Lab Sample ID: LCS 160-603854/2-A
Matrix: Water
Analysis Batch: 606563

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603854

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	11.41		1.18	1.00	0.0785	pCi/L	101	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	91.4		30 - 110

Lab Sample ID: LCSD 160-603854/25-A
Matrix: Water
Analysis Batch: 606587

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603854

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226	11.3	10.67		1.13	1.00	0.155	pCi/L	94	75 - 125	0.32	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	49.6		30 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-602360/1-A
Matrix: Water
Analysis Batch: 603871

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 602360

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2985	U	0.293	0.294	1.00	0.468	pCi/L	03/06/23 09:48	03/16/23 12:10	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	47.8		30 - 110	03/20/23 09:54	03/21/23 16:10	1
Y Carrier	47.9		30 - 110	03/20/23 09:54	03/21/23 16:10	1

Lab Sample ID: LCS 160-602360/2-A
Matrix: Water
Analysis Batch: 603871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 602360

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	8.11	8.303		1.17	1.00	0.455	pCi/L	102	75 - 125

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-602360/2-A
Matrix: Water
Analysis Batch: 603871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 602360

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	478		30 - 110
Y Carrier	478		30 - 110

Lab Sample ID: LCSD 160-602360/3-A
Matrix: Water
Analysis Batch: 603871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 602360

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.11	9.182		1.28	1.00	0.521	pCi/L	113	75 - 125	0.36	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	438		30 - 110
Y Carrier	478		30 - 110

Lab Sample ID: MB 160-603857/1-A
Matrix: Water
Analysis Batch: 605623

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603857

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4545		0.308	0.311	1.00	0.452	pCi/L	03/16/23 09:45	03/30/23 12:11	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	918		30 - 110	03/16/23 09:45	03/30/23 16:11	1
Y Carrier	438		30 - 110	03/16/23 09:45	03/30/23 16:11	1

Lab Sample ID: LCS 160-603857/2-A
Matrix: Water
Analysis Batch: 605623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603857

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.08	9.981		1.32	1.00	0.466	pCi/L	124	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	9.84		30 - 110
Y Carrier	418		30 - 110

Lab Sample ID: LCSD 160-603857/25-A
Matrix: Water
Analysis Batch: 605624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603857

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.08	10.32		1.36	1.00	0.479	pCi/L	128	75 - 125	0.13	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-603857/25-A
Matrix: Water
Analysis Batch: 605624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603857

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	4986		30 - 110
Y Carrier	4785		30 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-603033/1-A
Matrix: Water
Analysis Batch: 604031

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 603033

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1395	U	0.149	0.149	3.00	0.303	pCi/L	03/09/23 13:03	03/17/23 18:29	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	4781		30 - 110	03/09/23 13:03	03/17/23 14:69	1
Y Carrier	4181		30 - 110	03/09/23 13:03	03/17/23 14:69	1

Lab Sample ID: LCS 160-603033/2-A
Matrix: Water
Analysis Batch: 604031

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 603033

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.35	6.881		0.800	3.00	0.299	pCi/L	94	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	7981		30 - 110
Y Carrier	4686		30 - 110

Lab Sample ID: LCSD 160-603033/3-A
Matrix: Water
Analysis Batch: 604031

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 603033

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.35	7.495		0.858	3.00	0.360	pCi/L	102	75 - 125	0.37	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	4081		30 - 110
Y Carrier	4686		30 - 110

Lab Sample ID: MB 160-604379/1-A
Matrix: Water
Analysis Batch: 605413

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604379

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.1030	U	0.268	0.268	3.00	0.492	pCi/L	03/20/23 13:22	03/29/23 15:59	1

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	798		30 - 110	03/26/23 13:66	03/29/23 15:59	1
Y Carrier	708		30 - 110	03/26/23 13:66	03/29/23 15:59	1

Lab Sample ID: LCS 160-604379/2-A
Matrix: Water
Analysis Batch: 605413

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604379

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Strontium-90	7.35	7.405		0.842	3.00	0.323	pCi/L	101	75 - 125

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	458		30 - 110
Y Carrier	7/ 8		30 - 110

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-605397/1-A
Matrix: Water
Analysis Batch: 606179

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605397

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	81.53	U	151	151	500	263	pCi/L	03/29/23 11:02	04/04/23 16:05	1

Lab Sample ID: LCS 160-605397/2-A
Matrix: Water
Analysis Batch: 606179

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605397

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2090	1744		317	500	251	pCi/L	83	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605724/1-A
Matrix: Water
Analysis Batch: 606117

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605724

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.03149	U	0.08996	0.09003	1.00	0.148	pCi/L	03/30/23 15:31	04/04/23 20:40	1

Lab Sample ID: LCS 160-605724/2-A
Matrix: Water
Analysis Batch: 606357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605724

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Uranium-234	12.7	13.25		1.55	1.00	0.113	pCi/L	104	75 - 125
Uranium-238	13.0	13.61		1.58	1.00	0.123	pCi/L	105	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-605724/2-A
Matrix: Water
Analysis Batch: 606357

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605724

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-636	968		30 - 110

Lab Sample ID: MB 160-605729/1-A
Matrix: Water
Analysis Batch: 605912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605729

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1686	U	0.206	0.207	1.00	0.300	pCi/L	03/30/23 16:34	04/03/23 20:56	1

Lab Sample ID: LCS 160-605729/2-A
Matrix: Water
Analysis Batch: 605927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605729

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.57		1.98	1.00	0.356	pCi/L	107	75 - 125		
Uranium-238			13.0	13.66		1.99	1.00	0.311	pCi/L	105	75 - 125		

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-636	348		30 - 110

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Prep Batch: 602356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	PrecSep-21	
MB 160-602356/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-602356/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-602356/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 602360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	PrecSep_0	
MB 160-602360/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-602360/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-602360/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Filtration Batch: 602821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	Filtration	
570-129046-1	EPBBC_20230226	Dissolved	Water	Filtration	

Prep Batch: 603033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	PrecSep-7	
MB 160-603033/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-603033/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-603033/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 603854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	PrecSep-21	602821
MB 160-603854/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-603854/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-603854/25-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 603857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	PrecSep_0	602821
MB 160-603857/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-603857/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-603857/25-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 604032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	Fill_Geo-0	
MB 160-604032/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604032/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 604379

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	PrecSep-7	602821
MB 160-604379/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-604379/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

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Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	Fill_Geo-0	602821
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	LSC_Dist_Susp	
MB 160-605397/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-605397/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 605724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Total/NA	Water	ExtChrom	
MB 160-605724/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605724/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 605729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	ExtChrom	602821
MB 160-605729/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605729/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129046-1	EPBBC_20230226	Dissolved	Water	Evaporation	602821
570-129046-1	EPBBC_20230226	Total/NA	Water	Evaporation	
MB 160-606326/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606326/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606326/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Client Sample ID: EPBBC_20230226

Date Collected: 02/26/23 12:45
Date Received: 02/27/23 18:00

Lab Sample ID: 570-129046-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	Evaporation			170.49 mL	1.0 g	606326	04/06/23 10:28	MST	EET SL
Dissolved	Analysis	900.0		1			606671	04/10/23 20:47	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			89.98 mL	1.0 g	606326	04/06/23 10:28	MST	EET SL
Total/NA	Analysis	900.0		1			606892	04/11/23 06:10	SCB	EET SL
	Instrument ID: GFPCORANGE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Dissolved	Analysis	901.1		1			605600	03/30/23 05:37	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604032	03/17/23 14:08	SEH	EET SL
Total/NA	Analysis	901.1		1			605372	03/29/23 17:46	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1900 mL	1900 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	PrecSep-21			754.39 mL	1.0 g	603854	03/16/23 07:58	DJP	EET SL
Dissolved	Analysis	903.0		1	1.0 mL	1.0 mL	606587	04/07/23 10:45	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-21			740.72 mL	1.0 g	602356	03/06/23 09:11	DJP	EET SL
Total/NA	Analysis	903.0		1			605412	03/29/23 21:59	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Dissolved	Filtration	Filtration			1900 mL	1900 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	PrecSep_0			754.39 mL	1.0 g	603857	03/16/23 09:45	DJP	EET SL
Dissolved	Analysis	904.0		1			605623	03/30/23 12:06	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep_0			740.72 mL	1.0 g	602360	03/06/23 09:48	DJP	EET SL
Total/NA	Analysis	904.0		1			603873	03/16/23 12:17	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	PrecSep-7			491.26 mL	1.0 g	604379	03/20/23 13:22	DJP	EET SL
Dissolved	Analysis	905		1			605413	03/29/23 16:02	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			502.97 mL	1.0 g	603033	03/09/23 13:03	DJP	EET SL
Total/NA	Analysis	905		1			604030	03/17/23 18:33	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	LSC_Dist_Susp			99.37 mL	1.0 g	605397	03/29/23 11:02	SEH	EET SL
Total/NA	Analysis	906.0		1			606179	04/04/23 18:21	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	ExtChrom			303.3 mL	1.0 mL	605729	03/30/23 16:34	CMM	EET SL
Dissolved	Analysis	A-01-R		1			605920	04/03/23 20:57	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			199.3 mL	1.0 mL	605724	03/30/23 15:31	CMM	EET SL
Total/NA	Analysis	A-01-R		1			606104	04/04/23 20:40	EJS	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129046-8
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129046-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129046-1	EPBBC_20230226	Water	02/26/23 12:45	02/27/23 18:00

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Wednesday, March 1, 2023 9:33 AM
To: Virendra Patel
Cc: Rapp, Kerry; Dominick, Mark
Subject: 2-CEVE

EXTERNAL EMAIL*

Virendra,

The COCs request Weck analyze 2-CEVE. Please follow the COCs and also continue to provide 2-CEVE with ECI's 624 data.

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

129046

570-129046 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7 B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	
EBBC_20230226	2/26/23	1245	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
EB_20230226-1	2/26/23	1245	TB	WM	3	N	N														x				
																									EDBPJOUX
																									Time of Readings 1245
																									DO (mg/L) 4.44
																									pH 7.01
																									Temp (°C/F) 52.2
																									TRC (mg/L) 0.00
																									Checked by:
																									Date/Time: 2-26-2023/1535
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access, Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes	Custody Seal No.	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1120	Received by: EC	Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1800	Received by:	Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

1.9/1.8, 2.2/2.1 SC12

Page 40 of 48

1 2

4/12/2023

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 2-27-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks			
H&A Project Number 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in acienda Heights CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Hacienda Heights CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
EPBBC_20230226	2/26/23	1245	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
TB_20230226-2	2/26/23	1245	TB	WM	3	N	N				X															
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.01 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.				
Relinquished by:	Company: H&A	Date/Time: 2-27-2023 1620	Received: EC		Date/Time: 2/27/23 1120
Relinquished by:	Company: EC	Date/Time: 2/27/23 1845	Received:		Date/Time: 2/27/23 1800
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208503.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/20/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)		SUB (VOCs-only A+A+2CVE (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine								Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X													X	
EPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water				X	X	X	X								7	See Attached Instructions
TB_20230226-2 (570-129046-3)	2/26/23	12:45 Pacific		Water				X											2	See Attached Instructions
								(4)	(2)	(2)	(1)									# of containers

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 3-1-23 15:40	Company: EC	Received by: [signature]	Date/Time: 3-1-23 15:40	Company: Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 4.1 - D270		

Ver: 06/08/2021

4/12/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208635.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PrecSep_21 (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	1	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FED EX	02/28/23 11:19	FEC	FED EX		
2	Relinquished by: FED EX	Date/Time:	Company	Received by: Sierra Worthington	Date/Time: MAR 01 2023 0900	Company ETAS
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208635.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045	PO #:			
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	WO #:			
Email:	Project #: 57014595			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water			X	X	X	X	X	1	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] FED EX	02/28/23 11:19	FEC	FED EX		
2	FED EX			Sierra Worthington	MAR 0 1 2023 0900	[illegible]
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208608.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	900.0/Evaporation Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	A01R_U/ExtChrom_Actin Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	901.1_Cs/Fill_Geo_0 (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	903.0/PrecSep_21 (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 02/28/23 9:23	Company: EC	Received by: FED EX	Date/Time:	Company
Relinquished by: FED EX	Date/Time:	Company	Received by: Sierra Worthington	Date/Time: MAR 0 1 2023 0900	Company TASR
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208608.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129046-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/30/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	904.0/PrecSep_0 (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	905_Sr90/PrecSep_7 (MOD) Strontium-90 - Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
EPPBBC_20230226 (570-129046-1)	2/26/23	12:45 Pacific		Water			X	X	X	X	X	2	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 02/28/23 9:23	Company: FE	Received by: FED EX	Date/Time:	Company
Relinquished by: FED EX	Date/Time:	Company	Received by: Sierra Worthington	Date/Time: MAR 0 1 2023 0900	Company: GTASL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129046-8

Login Number: 129046
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129046-8

Login Number: 129046
List Number: 4
Creator: Booker, Autumn R

List Source: Eurofins St. Louis
List Creation: 03/02/23 12:00 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-129285-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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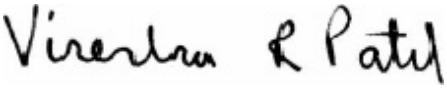
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-1

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129285-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129285-1

Comments
No additional comments.

Receipt
The samples were received on 2/28/2023 5:07 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.5º C and 3.0º C.

HPLC/IC
Method 300.0: Due to the high concentration of Chloride, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-309069 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-308039 and analytical batch 570-308099 were outside control limits for Zinc. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 200.8: The method blank for preparation batch 570-308339 and analytical batch 570-308478 contained Manganese above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 200.8: The method blank for preparation batch 570-308339 and analytical batch 570-308632 contained Manganese above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPSW001IE01_20230224 (570-129285-1) and A1BPSW0001_20230224 (570-129285-2). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-1

Client Sample ID: EPSW001IE01_20230224 — Lab Sample ID: 570-129285-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1.9		1.0	0.24	mg/L	1		300.0	Total/NA
Arsenic	0.76	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Cadmium	0.14	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	2.1		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	1600		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	30	MB	1.0	0.41	ug/L	1		200.8	Total Recoverable
Lead	0.80	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Zinc	6.0	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	0.76	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Arsenic	0.62	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	1.0	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	63	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	1.6	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Total Suspended Solids	180		3.3	2.8	mg/L	1		SM 2540D	Total/NA

Client Sample ID: A1BPSW0001_20230224 — Lab Sample ID: 570-129285-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	15		1.0	0.24	mg/L	1		300.0	Total/NA
Arsenic	5.4		1.0	0.16	ug/L	1		200.8	Total Recoverable
Cadmium	0.29	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	18		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	23000		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	640	MB	1.0	0.41	ug/L	1		200.8	Total Recoverable
Lead	15		1.0	0.12	ug/L	1		200.8	Total Recoverable
Zinc	93		20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	2.0		2.0	0.52	ug/L	1		200.8	Total Recoverable
Arsenic	1.5	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	2.0	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	320	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	12	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Lead	0.23	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Total Suspended Solids	460		5.0	4.1	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPSW001IE01_20230224
Lab Sample ID: 570-129285-1
Date Collected: 02/24/23 08:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1.9		1.0	0.24	mg/L			03/06/23 11:10	1

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2
Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	15		1.0	0.24	mg/L			03/06/23 11:27	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPSW001IE01_20230224 **Lab Sample ID: 570-129285-1**
Date Collected: 02/24/23 08:00 **Matrix: Water**
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.76	J,DX	1.0	0.16	ug/L		03/02/23 09:20	03/02/23 14:11	1
Cadmium	0.14	J,DX	1.0	0.13	ug/L		03/02/23 09:20	03/02/23 14:11	1
Copper	2.1		2.0	0.32	ug/L		03/02/23 09:20	03/02/23 14:11	1
Iron	1600		20	3.7	ug/L		03/02/23 09:20	03/02/23 14:11	1
Manganese	30	MB	1.0	0.41	ug/L		03/02/23 09:20	03/02/23 14:11	1
Lead	0.80	J,DX	1.0	0.12	ug/L		03/02/23 09:20	03/02/23 14:11	1
Zinc	6.0	J,DX	20	2.8	ug/L		03/02/23 09:20	03/02/23 14:11	1
Selenium	0.76	J,DX	2.0	0.52	ug/L		03/02/23 09:20	03/02/23 14:11	1

Client Sample ID: A1BPSW0001_20230224 **Lab Sample ID: 570-129285-2**
Date Collected: 02/24/23 09:00 **Matrix: Water**
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	5.4		1.0	0.16	ug/L		03/02/23 09:20	03/02/23 14:33	1
Cadmium	0.29	J,DX	1.0	0.13	ug/L		03/02/23 09:20	03/02/23 14:33	1
Copper	18		2.0	0.32	ug/L		03/02/23 09:20	03/02/23 14:33	1
Iron	23000		20	3.7	ug/L		03/02/23 09:20	03/02/23 14:33	1
Manganese	640	MB	1.0	0.41	ug/L		03/02/23 09:20	03/02/23 14:33	1
Lead	15		1.0	0.12	ug/L		03/02/23 09:20	03/02/23 14:33	1
Zinc	93		20	2.8	ug/L		03/02/23 09:20	03/02/23 14:33	1
Selenium	2.0		2.0	0.52	ug/L		03/02/23 09:20	03/02/23 14:33	1

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPSW001IE01_20230224
Lab Sample ID: 570-129285-1
Date Collected: 02/24/23 08:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.62**	**J,DX BU**	1.0	0.16	ug/L			03/01/23 14:38	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/01/23 14:38	1
Copper	**1.0**	**J,DX BU**	2.0	0.32	ug/L			03/01/23 14:38	1
Iron	**63**	**BU**	20	3.7	ug/L			03/01/23 14:38	1
Manganese	**1.6**	**BU**	1.0	0.41	ug/L			03/01/23 14:38	1
Lead	ND	BU	1.0	0.12	ug/L			03/01/23 14:38	1
Zinc	ND	BU	20	2.8	ug/L			03/01/23 14:38	1
Selenium	ND	BU	2.0	0.52	ug/L			03/01/23 14:38	1

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2
Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.5**	**BU**	1.0	0.16	ug/L			03/01/23 14:41	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/01/23 14:41	1
Copper	**2.0**	**BU**	2.0	0.32	ug/L			03/01/23 14:41	1
Iron	**320**	**BU**	20	3.7	ug/L			03/01/23 14:41	1
Manganese	**12**	**BU**	1.0	0.41	ug/L			03/01/23 14:41	1
Lead	**0.23**	**J,DX BU**	1.0	0.12	ug/L			03/01/23 14:41	1
Zinc	ND	BU	20	2.8	ug/L			03/01/23 14:41	1
Selenium	ND	BU	2.0	0.52	ug/L			03/01/23 14:41	1

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

General Chemistry

Client Sample ID: EPSW001IE01_20230224
Lab Sample ID: 570-129285-1
Date Collected: 02/24/23 08:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	180		3.3	2.8	mg/L			03/02/23 19:40	1

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2
Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	460		5.0	4.1	mg/L			03/02/23 19:40	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-309069/5
Matrix: Water
Analysis Batch: 309069

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			03/06/23 03:59	1

Lab Sample ID: LCS 570-309069/6
Matrix: Water
Analysis Batch: 309069

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	49.6		mg/L		99	90 - 110

Lab Sample ID: LCSD 570-309069/7
Matrix: Water
Analysis Batch: 309069

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	50.0	49.7		mg/L		99	90 - 110	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-308339/1-A
Matrix: Water
Analysis Batch: 308478

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 308339

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L		03/02/23 09:20	03/02/23 14:04	1
Cadmium	ND		1.0	0.13	ug/L		03/02/23 09:20	03/02/23 14:04	1
Copper	ND		2.0	0.32	ug/L		03/02/23 09:20	03/02/23 14:04	1
Iron	ND		20	3.7	ug/L		03/02/23 09:20	03/02/23 14:04	1
Manganese	0.432	J,DX	1.0	0.41	ug/L		03/02/23 09:20	03/02/23 14:04	1
Lead	ND		1.0	0.12	ug/L		03/02/23 09:20	03/02/23 14:04	1
Zinc	ND		20	2.8	ug/L		03/02/23 09:20	03/02/23 14:04	1
Selenium	ND		2.0	0.52	ug/L		03/02/23 09:20	03/02/23 14:04	1

Lab Sample ID: LCS 570-308339/2-A
Matrix: Water
Analysis Batch: 308478

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 308339

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	75.0		ug/L		94	85 - 115
Cadmium	80.0	76.4		ug/L		96	85 - 115
Copper	80.0	75.2		ug/L		94	85 - 115
Iron	800	771		ug/L		96	85 - 115
Manganese	80.0	78.9		ug/L		99	85 - 115
Lead	80.0	77.9		ug/L		97	85 - 115
Zinc	80.0	73.5		ug/L		92	85 - 115
Selenium	80.0	77.7		ug/L		97	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-308339/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 308478
Prep Batch: 308339

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			80.0	75.5		ug/L		94	85 - 115	1	20
Cadmium			80.0	76.0		ug/L		95	85 - 115	1	20
Copper			80.0	75.3		ug/L		94	85 - 115	0	20
Iron			800	763		ug/L		95	85 - 115	1	20
Manganese			80.0	79.0		ug/L		99	85 - 115	0	20
Lead			80.0	78.8		ug/L		99	85 - 115	1	20
Zinc			80.0	74.6		ug/L		93	85 - 115	2	20
Selenium			80.0	76.3		ug/L		95	85 - 115	2	20

Lab Sample ID: 570-129285-1 MS
Client Sample ID: EPSW001IE01_20230224
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 308478
Prep Batch: 308339

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.76	J,DX	80.0	74.6		ug/L		92	80 - 120
Cadmium	0.14	J,DX	80.0	76.5		ug/L		95	80 - 120
Copper	2.1		80.0	76.3		ug/L		93	80 - 120
Iron	1600		800	2450		ug/L		107	80 - 120
Manganese	30	MB	80.0	108		ug/L		97	80 - 120
Lead	0.80	J,DX	80.0	79.2		ug/L		98	80 - 120
Zinc	6.0	J,DX	80.0	79.3		ug/L		92	80 - 120
Selenium	0.76	J,DX	80.0	73.2		ug/L		91	80 - 120

Lab Sample ID: 570-129285-1 MSD
Client Sample ID: EPSW001IE01_20230224
Matrix: Water
Prep Type: Total Recoverable
Analysis Batch: 308478
Prep Batch: 308339

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	0.76	J,DX	80.0	74.6		ug/L		92	80 - 120	0	20
Cadmium	0.14	J,DX	80.0	75.7		ug/L		94	80 - 120	1	20
Copper	2.1		80.0	76.9		ug/L		93	80 - 120	1	20
Iron	1600		800	2510		ug/L		114	80 - 120	2	20
Manganese	30	MB	80.0	108		ug/L		97	80 - 120	0	20
Lead	0.80	J,DX	80.0	77.7		ug/L		96	80 - 120	2	20
Zinc	6.0	J,DX	80.0	79.8		ug/L		92	80 - 120	1	20
Selenium	0.76	J,DX	80.0	77.8		ug/L		96	80 - 120	6	20

Lab Sample ID: MB 570-308039/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 308100

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L			03/01/23 14:16	1
Cadmium	ND		1.0	0.13	ug/L			03/01/23 14:16	1
Copper	ND		2.0	0.32	ug/L			03/01/23 14:16	1
Iron	ND		20	3.7	ug/L			03/01/23 14:16	1
Manganese	ND		1.0	0.41	ug/L			03/01/23 14:16	1
Lead	ND		1.0	0.12	ug/L			03/01/23 14:16	1
Zinc	ND		20	2.8	ug/L			03/01/23 14:16	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-308039/1-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		2.0	0.52	ug/L			03/01/23 14:16	1

Lab Sample ID: LCS 570-308039/2-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	79.7		ug/L		100	85 - 115
Cadmium	80.0	80.0		ug/L		100	85 - 115
Copper	80.0	77.6		ug/L		97	85 - 115
Iron	800	814		ug/L		102	85 - 115
Manganese	80.0	81.3		ug/L		102	85 - 115
Lead	80.0	80.3		ug/L		100	85 - 115
Zinc	80.0	78.5		ug/L		98	85 - 115
Selenium	80.0	82.2		ug/L		103	85 - 115

Lab Sample ID: LCSD 570-308039/3-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	80.0	80.6		ug/L		101	85 - 115	1	20
Cadmium	80.0	80.5		ug/L		101	85 - 115	1	20
Copper	80.0	78.2		ug/L		98	85 - 115	1	20
Iron	800	814		ug/L		102	85 - 115	0	20
Manganese	80.0	81.5		ug/L		102	85 - 115	0	20
Lead	80.0	80.5		ug/L		101	85 - 115	0	20
Zinc	80.0	81.1		ug/L		101	85 - 115	3	20
Selenium	80.0	83.1		ug/L		104	85 - 115	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-308582/1
Matrix: Water
Analysis Batch: 308582

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/02/23 19:40	1

Lab Sample ID: LCS 570-308582/2
Matrix: Water
Analysis Batch: 308582

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.0		mg/L		97	77 - 116

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 570-308582/3
Matrix: Water
Analysis Batch: 308582

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.0		mg/L		96	77 - 116	1	10

Lab Sample ID: 570-129285-1 DU
Matrix: Water
Analysis Batch: 308582

Client Sample ID: EPSW001IE01_20230224
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	180			188		mg/L				5	10

HPLC/IC

Analysis Batch: 309069

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Total/NA	Water	300.0	
570-129285-2	A1BPSW0001_20230224	Total/NA	Water	300.0	
MB 570-309069/5	Method Blank	Total/NA	Water	300.0	
LCS 570-309069/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-309069/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Metals

Filtration Batch: 308039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Dissolved	Water	Filtration	
570-129285-2	A1BPSW0001_20230224	Dissolved	Water	Filtration	
MB 570-308039/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 308099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Dissolved	Water	200.8	308039
570-129285-2	A1BPSW0001_20230224	Dissolved	Water	200.8	308039

Analysis Batch: 308100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308039/1-A	Method Blank	Dissolved	Water	200.8	308039
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	200.8	308039
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	308039

Prep Batch: 308339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Total Recoverable	Water	200.8	
570-129285-2	A1BPSW0001_20230224	Total Recoverable	Water	200.8	
MB 570-308339/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-308339/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-308339/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-129285-1 MS	EPSW001IE01_20230224	Total Recoverable	Water	200.8	
570-129285-1 MSD	EPSW001IE01_20230224	Total Recoverable	Water	200.8	

Analysis Batch: 308478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Total Recoverable	Water	200.8	308339
MB 570-308339/1-A	Method Blank	Total Recoverable	Water	200.8	308339
LCS 570-308339/2-A	Lab Control Sample	Total Recoverable	Water	200.8	308339
LCSD 570-308339/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	308339
570-129285-1 MS	EPSW001IE01_20230224	Total Recoverable	Water	200.8	308339
570-129285-1 MSD	EPSW001IE01_20230224	Total Recoverable	Water	200.8	308339

Analysis Batch: 308632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-2	A1BPSW0001_20230224	Total Recoverable	Water	200.8	308339

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

General Chemistry

Analysis Batch: 308582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Total/NA	Water	SM 2540D	
570-129285-2	A1BPSW0001_20230224	Total/NA	Water	SM 2540D	
MB 570-308582/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-308582/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-308582/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-129285-1 DU	EPSW001IE01_20230224	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-1

Client Sample ID: EPSW001IE01_20230224

Lab Sample ID: 570-129285-1

Date Collected: 02/24/23 08:00
Matrix: Water
Date Received: 02/28/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	309069	03/06/23 11:10	UIP1	EET CAL 4
	Instrument ID: IC9									
Dissolved	Filtration	Filtration			50 mL	50 mL	308039	03/01/23 12:58	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			308099	03/01/23 14:38	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	308339	03/02/23 09:20	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			308478	03/02/23 14:11	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	300 mL	1000 mL	308582	03/02/23 19:40	BDH9	EET CAL 4
	Instrument ID: BAL71									

Client Sample ID: A1BPSW0001_20230224

Lab Sample ID: 570-129285-2

Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	309069	03/06/23 11:27	UIP1	EET CAL 4
	Instrument ID: IC9									
Dissolved	Filtration	Filtration			50 mL	50 mL	308039	03/01/23 12:58	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			308099	03/01/23 14:41	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	308339	03/02/23 09:20	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			308632	03/02/23 14:33	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	200 mL	1000 mL	308582	03/02/23 19:40	BDH9	EET CAL 4
	Instrument ID: BAL71									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129285-1	EPSW001IE01_20230224	Water	02/24/23 08:00	02/28/23 17:07
570-129285-2	A1BPSW0001_20230224	Water	02/24/23 09:00	02/28/23 17:07

129285

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins Calscience

2841 Dow Avenue, Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

Eurofins Calscience, Inc.

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under thi CoC shall be performed in accordance with the T&C^ within Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date (Time)	Sample Time (Date)	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Dissolved)	Method 200.8. As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)			Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230224	0800	02/24/23	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
A1BPSW0001_20230224	0900	02/24/23	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
DUP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	4	2	1	1			

570-129285 Chain of Custody

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C) Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by:	Company: SHA	Date/Time: 02/28/23	Received by:	EC	Date/Time: 2/28/23 1330
Relinquished by:	Company: EC	Date/Time: 2/28/23 1707	Received by:		Date/Time: 2/28/23 1707
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

3.1/3.0 2.6/2.5 SC12

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

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3/6/2023

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129285-1

Login Number: 129285
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/9/2023 1:45:00 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-129285-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

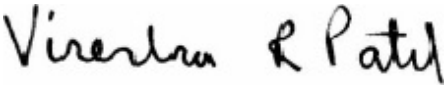
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129285-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129285-2

Comments
No additional comments.

Receipt
The samples were received on 2/28/2023 5:07 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.5º C and 3.0º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-2

Client Sample ID: EPSW001IE01_20230224 — Lab Sample ID: 570-129285-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0058		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0034		0.00050	0.000079	ug/L	1		1631E	Dissolved

Client Sample ID: A1BPSW0001_20230224 — Lab Sample ID: 570-129285-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.038		0.0025	0.00040	ug/L	5		1631E	Total/NA
Mercury	0.0024		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPSW001IE01_20230224
Lab Sample ID: 570-129285-1
Date Collected: 02/24/23 08:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0058		0.00050	0.000079	ug/L			03/06/23 19:42	1

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2
Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.038		0.0025	0.00040	ug/L			03/07/23 13:23	5

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPSW001IE01_20230224
Lab Sample ID: 570-129285-1
Date Collected: 02/24/23 08:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0034		0.00050	0.000079	ug/L			03/06/23 19:46	1

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2
Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0024		0.00050	0.000079	ug/L			03/06/23 19:50	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-419693/25
Matrix: Water
Analysis Batch: 419693

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/06/23 13:32	1

Lab Sample ID: MB 580-419693/26
Matrix: Water
Analysis Batch: 419693

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/06/23 13:37	1

Lab Sample ID: MB 580-419693/27
Matrix: Water
Analysis Batch: 419693

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/06/23 13:41	1

Lab Sample ID: LCS 580-419693/32
Matrix: Water
Analysis Batch: 419693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00440		ug/L		88	77 - 123		

Lab Sample ID: LCSD 580-419693/35
Matrix: Water
Analysis Batch: 419693

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00447		ug/L		89	77 - 123	1	24

Lab Sample ID: MB 580-419820/13
Matrix: Water
Analysis Batch: 419820

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/07/23 12:25	1

Lab Sample ID: MB 580-419820/14
Matrix: Water
Analysis Batch: 419820

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/07/23 12:29	1

Lab Sample ID: MB 580-419820/15
Matrix: Water
Analysis Batch: 419820

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/07/23 12:33	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: LCS 580-419820/16
Matrix: Water
Analysis Batch: 419820

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00493		ug/L		99	77 - 123		

Lab Sample ID: LCSD 580-419820/17
Matrix: Water
Analysis Batch: 419820

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00481		ug/L		96	77 - 123	2	24

Lab Sample ID: MB 580-419367/1-A
Matrix: Water
Analysis Batch: 419693

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/06/23 14:26	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Metals

Filtration Batch: 419367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Dissolved	Water	Filtration	
570-129285-2	A1BPSW0001_20230224	Dissolved	Water	Filtration	
MB 580-419367/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 419693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Dissolved	Water	1631E	419367
570-129285-1	EPSW001IE01_20230224	Total/NA	Water	1631E	
570-129285-2	A1BPSW0001_20230224	Dissolved	Water	1631E	419367
MB 580-419367/1-A	Method Blank	Dissolved	Water	1631E	419367
MB 580-419693/25	Method Blank	Total/NA	Water	1631E	
MB 580-419693/26	Method Blank	Total/NA	Water	1631E	
MB 580-419693/27	Method Blank	Total/NA	Water	1631E	
LCS 580-419693/32	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-419693/35	Lab Control Sample Dup	Total/NA	Water	1631E	

Analysis Batch: 419820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-2	A1BPSW0001_20230224	Total/NA	Water	1631E	
MB 580-419820/13	Method Blank	Total/NA	Water	1631E	
MB 580-419820/14	Method Blank	Total/NA	Water	1631E	
MB 580-419820/15	Method Blank	Total/NA	Water	1631E	
LCS 580-419820/16	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-419820/17	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_20230224
Lab Sample ID: 570-129285-1
Date Collected: 02/24/23 08:00
Matrix: Water
Date Received: 02/28/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	419367	03/02/23 13:25	DRM	EET SEA
Dissolved	Analysis	1631E		1			419693	03/06/23 19:46	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		1			419693	03/06/23 19:42	COW	EET SEA
	Instrument ID: 2600-4									

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2
Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	419367	03/02/23 13:25	DRM	EET SEA
Dissolved	Analysis	1631E		1			419693	03/06/23 19:50	COW	EET SEA
	Instrument ID: 2600-4									
Total/NA	Analysis	1631E		5			419820	03/07/23 13:23	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:
EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129285-1	EPSW001IE01_20230224	Water	02/24/23 08:00	02/28/23 17:07
570-129285-2	A1BPSW0001_20230224	Water	02/24/23 09:00	02/28/23 17:07

129285

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under thi CoC shall be performed in accordance with the T&C within Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.
H&A P O #	☐ 1 day			

Sample Identification	Sample Date (Time)	Sample Time (Date)	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Dissolved)	Method 200.8. As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)			Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230224	0800	02/24/23	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
1BPSW0001_20230224	0900	02/24/23	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
DUP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	4	2	1	1			

570-129285 Chain of Custody

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C) Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by:	Company: SHA	Date/Time: 02/28/23	Received by:	EC	Date/Time: 2/28/23 1330
Relinquished by:	Company: EC	Date/Time: 2/28/23 1707	Received by:		Date/Time: 2/28/23 1707
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

3.1/3.0 2.6/2.5 SC12

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

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3/9/2023

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129285-2

Login Number: 129285
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129285-2

Login Number: 129285
List Number: 3
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/02/23 01:31 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 3/23/2023 1:30:33 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-129285-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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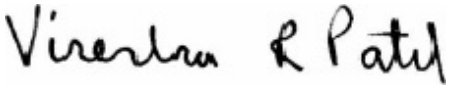

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-3

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129285-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129285-3

Comments
No additional comments.

Receipt
The samples were received on 2/28/2023 5:07 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.5º C and 3.0º C.

Receipt Exceptions

The reference method requires samples to have a pH of <2. The following samples were received with a pH of 7: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

Dioxin
Method 1613B: The ending resolution check indicated that the instrument was slightly less than 10,000 resolution. The samples were evaluated for high mass fragmentation breakthrough and none was found. There is no adverse impact on the data.

EPSW001IE01_20230224 (570-129285-1), A1BPSW0001_20230224 (570-129285-2), (CCV 320-662320/2) and (WDM 320-662320/1)

Method 1613B: The automated resolution check scheduled to be performed on March 20, 2023 at approximately 22:20 did not print. This was to be the beginning resolution check for this sequence. A manual resolution check was performed, without retuning, on March 21, 2023 at 10:21 which indicated that the instrument had maintained 10,000 resolution from March 20, 2023 at 11:12 until March 21, 2023 at 10:21, a period of 23 hours and 9 minutes. The beginning resolution check not being printed has no impact on the data.

(CCV 320-662166/2), (LCS 320-660580/2-A), (LCSD 320-660580/3-A), (MB 320-660580/1-A) and (WDM 320-662166/1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
Method 1613B: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: EPSW001IE01_20230224 (570-129285-1).

preparation batch 320-660580
Method: 1613_Sox_Sep_P
Matrix: Water

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-3

Client Sample ID: EPSW001IE01_20230224 — Lab Sample ID: 570-129285-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000016	J,DX	0.000056	0.00000058	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000038	J,DX MB	0.000056	0.0000013	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000023	J,DX MB q	0.000056	0.0000013	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000028	J,DX	0.000056	0.0000012	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000020	J,DX q	0.000056	0.00000098	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000021	J,DX q	0.000056	0.00000093	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000023	J,DX MB	0.000056	0.00000093	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000014	J,DX	0.000056	0.00000085	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000035	J,DX MB	0.000056	0.0000025	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.000012	J,DX MB	0.000056	0.0000017	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000019	J,DX q	0.000056	0.0000018	ug/L	1		1613B	Total/NA
OCDD	0.00024	MB	0.00011	0.0000024	ug/L	1		1613B	Total/NA
OCDF	0.000026	J,DX MB	0.00011	0.0000011	ug/L	1		1613B	Total/NA
Total TCDF	0.0000020	J,DX q	0.000011	0.00000057	ug/L	1		1613B	Total/NA
Total PeCDF	0.0000016	J,DX	0.000056	0.00000061	ug/L	1		1613B	Total/NA
Total HxCDD	0.000014	J,DX MB q	0.000056	0.0000013	ug/L	1		1613B	Total/NA
Total HxCDF	0.000011	J,DX MB q	0.000056	0.00000092	ug/L	1		1613B	Total/NA
Total HpCDD	0.000067	J,DX MB	0.000056	0.0000025	ug/L	1		1613B	Total/NA
Total HpCDF	0.000025	J,DX MB q	0.000056	0.0000017	ug/L	1		1613B	Total/NA

Client Sample ID: A1BPSW0001_20230224 — Lab Sample ID: 570-129285-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.0000026	J,DX	0.000049	0.00000061	ug/L	1		1613B	Total/NA
1,2,3,7,8-PeCDF	0.0000024	J,DX	0.000049	0.00000059	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.0000012	J,DX	0.000049	0.00000063	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000075	J,DX MB	0.000049	0.0000016	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.000017	J,DX MB	0.000049	0.0000017	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.000015	J,DX	0.000049	0.0000015	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.000012	J,DX	0.000049	0.0000014	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.000017	J,DX	0.000049	0.0000014	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.000013	J,DX	0.000049	0.0000013	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00057	MB	0.000049	0.000013	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00035	MB	0.000049	0.0000063	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.000016	J,DX	0.000049	0.0000066	ug/L	1		1613B	Total/NA
OCDD	0.0057	MB	0.000097	0.000011	ug/L	1		1613B	Total/NA
OCDF	0.00088	MB	0.000097	0.0000017	ug/L	1		1613B	Total/NA
Total TCDD	0.0000016	J,DX MB q	0.0000097	0.0000011	ug/L	1		1613B	Total/NA
Total PeCDD	0.000011	J,DX MB q	0.000049	0.00000061	ug/L	1		1613B	Total/NA
Total PeCDF	0.000032	J,DX q	0.000049	0.00000061	ug/L	1		1613B	Total/NA
Total HxCDD	0.00016	J,DX MB	0.000049	0.0000016	ug/L	1		1613B	Total/NA
Total HxCDF	0.00023	J,DX MB q	0.000049	0.0000013	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample ID: A1BPSW0001_20230224 (Continued)
Lab Sample ID: 570-129285-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
Total HpCDD	0.0011	MB	0.000049	0.000013	ug/L	1		1613B	Total/NA
Total HpCDF	0.00075	J,DX MB	0.000049	0.0000064	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPSW001IE01_20230224
Date Collected: 02/24/23 08:00
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129285-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000011	0.0000014	ug/L		03/14/23 04:24	03/21/23 13:24	1
1,2,3,7,8-PeCDD	ND		0.000056	0.00000089	ug/L		03/14/23 04:24	03/21/23 13:24	1
1,2,3,7,8-PeCDF	**0.0000016**	**J,DX**	0.000056	0.00000058	ug/L		03/14/23 04:24	03/21/23 13:24	1
2,3,4,7,8-PeCDF	ND		0.000056	0.00000065	ug/L		03/14/23 04:24	03/21/23 13:24	1
1,2,3,4,7,8-HxCDD	**0.0000038**	**J,DX MB**	0.000056	0.0000013	ug/L		03/14/23 04:24	03/21/23 13:24	1
1,2,3,6,7,8-HxCDD	**0.0000023**	**J,DX MB q**	0.000056	0.0000013	ug/L		03/14/23 04:24	03/21/23 13:24	1
1,2,3,7,8,9-HxCDD	**0.0000028**	**J,DX**	0.000056	0.0000012	ug/L		03/14/23 04:24	03/21/23 13:24	1
1,2,3,4,7,8-HxCDF	**0.0000020**	**J,DX q**	0.000056	0.00000098	ug/L		03/14/23 04:24	03/21/23 13:24	1
1,2,3,6,7,8-HxCDF	**0.0000021**	**J,DX q**	0.000056	0.00000093	ug/L		03/14/23 04:24	03/21/23 13:24	1
1,2,3,7,8,9-HxCDF	**0.0000023**	**J,DX MB**	0.000056	0.00000093	ug/L		03/14/23 04:24	03/21/23 13:24	1
2,3,4,6,7,8-HxCDF	**0.0000014**	**J,DX**	0.000056	0.00000085	ug/L		03/14/23 04:24	03/21/23 13:24	1
1,2,3,4,6,7,8-HpCDD	**0.000035**	**J,DX MB**	0.000056	0.0000025	ug/L		03/14/23 04:24	03/21/23 13:24	1
1,2,3,4,6,7,8-HpCDF	**0.000012**	**J,DX MB**	0.000056	0.0000017	ug/L		03/14/23 04:24	03/21/23 13:24	1
1,2,3,4,7,8,9-HpCDF	**0.0000019**	**J,DX q**	0.000056	0.0000018	ug/L		03/14/23 04:24	03/21/23 13:24	1
OCDD	**0.00024**	**MB**	0.00011	0.0000024	ug/L		03/14/23 04:24	03/21/23 13:24	1
OCDF	**0.000026**	**J,DX MB**	0.00011	0.0000011	ug/L		03/14/23 04:24	03/21/23 13:24	1
Total TCDD	ND		0.000011	0.0000014	ug/L		03/14/23 04:24	03/21/23 13:24	1
Total TCDF	**0.0000020**	**J,DX q**	0.000011	0.00000057	ug/L		03/14/23 04:24	03/21/23 13:24	1
Total PeCDD	ND		0.000056	0.00000089	ug/L		03/14/23 04:24	03/21/23 13:24	1
Total PeCDF	**0.0000016**	**J,DX**	0.000056	0.00000061	ug/L		03/14/23 04:24	03/21/23 13:24	1
Total HxCDD	**0.000014**	**J,DX MB q**	0.000056	0.0000013	ug/L		03/14/23 04:24	03/21/23 13:24	1
Total HxCDF	**0.000011**	**J,DX MB q**	0.000056	0.00000092	ug/L		03/14/23 04:24	03/21/23 13:24	1
Total HpCDD	**0.000067**	**J,DX MB**	0.000056	0.0000025	ug/L		03/14/23 04:24	03/21/23 13:24	1
Total HpCDF	**0.000025**	**J,DX MB q**	0.000056	0.0000017	ug/L		03/14/23 04:24	03/21/23 13:24	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*73*		*20 - 156*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-2,3,7,8-TCDF	*70*		*26 - 159*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-1,2,3,7,8-PeCDD	*86*		*20 - 181*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-1,2,3,7,8-PeCDF	*86*		*26 - 180*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-2,3,6,7,8-PeCDF	*83*		*21 - 178*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-1,2,3,6,7,8-HxCDD	*71*		*32 - 161*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-1,2,3,5,7,8-HxCDD	*70*		*28 - 134*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-1,2,3,6,7,8-HxCDF	*74*		*25 - 102*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-1,2,3,5,7,8-HxCDF	*78*		*25 - 123*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-1,2,3,7,8,9-HxCDF	*87*		*29 - 167*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-2,3,6,5,7,8-HxCDF	*80*		*28 - 135*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-1,2,3,6,5,7,8-HpCDD	*70*		*23 - 164*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-1,2,3,6,5,7,8-HpCDF	*71*		*28 - 163*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-1,2,3,6,7,8,9-HpCDF	*84*		*25 - 138*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-OCDD	*91*		*17 - 107*	*43/16/23 46:26*	*43/21/23 13:26*	*1*
13C-OCDF	*92*		*17 - 107*	*43/16/23 46:26*	*43/21/23 13:26*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	96		30 - 197	43/16/23 46:26	43/21/23 13:26	1

Client Sample ID: A1BPSW0001_20230224
Date Collected: 02/24/23 09:00
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129285-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000097	0.0000011	ug/L		03/14/23 04:24	03/21/23 14:11	1
2,3,7,8-TCDF	ND		0.0000097	0.00000051	ug/L		03/14/23 04:24	03/21/23 14:11	1
1,2,3,7,8-PeCDD	**0.0000026**	**J,DX**	0.000049	0.00000061	ug/L		03/14/23 04:24	03/21/23 14:11	1
1,2,3,7,8-PeCDF	**0.0000024**	**J,DX**	0.000049	0.00000059	ug/L		03/14/23 04:24	03/21/23 14:11	1
2,3,4,7,8-PeCDF	**0.0000012**	**J,DX**	0.000049	0.00000063	ug/L		03/14/23 04:24	03/21/23 14:11	1
1,2,3,4,7,8-HxCDD	**0.0000075**	**J,DX MB**	0.000049	0.0000016	ug/L		03/14/23 04:24	03/21/23 14:11	1
1,2,3,6,7,8-HxCDD	**0.000017**	**J,DX MB**	0.000049	0.0000017	ug/L		03/14/23 04:24	03/21/23 14:11	1
1,2,3,7,8,9-HxCDD	**0.000015**	**J,DX**	0.000049	0.0000015	ug/L		03/14/23 04:24	03/21/23 14:11	1
1,2,3,4,7,8-HxCDF	**0.000012**	**J,DX**	0.000049	0.0000014	ug/L		03/14/23 04:24	03/21/23 14:11	1
1,2,3,6,7,8-HxCDF	**0.000017**	**J,DX**	0.000049	0.0000014	ug/L		03/14/23 04:24	03/21/23 14:11	1
1,2,3,7,8,9-HxCDF	ND		0.000049	0.0000014	ug/L		03/14/23 04:24	03/21/23 14:11	1
2,3,4,6,7,8-HxCDF	**0.000013**	**J,DX**	0.000049	0.0000013	ug/L		03/14/23 04:24	03/21/23 14:11	1
1,2,3,4,6,7,8-HpCDD	**0.00057**	**MB**	0.000049	0.000013	ug/L		03/14/23 04:24	03/21/23 14:11	1
1,2,3,4,6,7,8-HpCDF	**0.00035**	**MB**	0.000049	0.0000063	ug/L		03/14/23 04:24	03/21/23 14:11	1
1,2,3,4,7,8,9-HpCDF	**0.000016**	**J,DX**	0.000049	0.0000066	ug/L		03/14/23 04:24	03/21/23 14:11	1
OCDD	**0.0057**	**MB**	0.000097	0.000011	ug/L		03/14/23 04:24	03/21/23 14:11	1
OCDF	**0.00088**	**MB**	0.000097	0.0000017	ug/L		03/14/23 04:24	03/21/23 14:11	1
Total TCDD	**0.0000016**	**J,DX MB q**	0.0000097	0.0000011	ug/L		03/14/23 04:24	03/21/23 14:11	1
Total TCDF	ND		0.0000097	0.00000051	ug/L		03/14/23 04:24	03/21/23 14:11	1
Total PeCDD	**0.000011**	**J,DX MB q**	0.000049	0.00000061	ug/L		03/14/23 04:24	03/21/23 14:11	1
Total PeCDF	**0.000032**	**J,DX q**	0.000049	0.00000061	ug/L		03/14/23 04:24	03/21/23 14:11	1
Total HxCDD	**0.00016**	**J,DX MB**	0.000049	0.0000016	ug/L		03/14/23 04:24	03/21/23 14:11	1
Total HxCDF	**0.00023**	**J,DX MB q**	0.000049	0.0000013	ug/L		03/14/23 04:24	03/21/23 14:11	1
Total HpCDD	**0.0011**	**MB**	0.000049	0.000013	ug/L		03/14/23 04:24	03/21/23 14:11	1
Total HpCDF	**0.00075**	**J,DX MB**	0.000049	0.0000064	ug/L		03/14/23 04:24	03/21/23 14:11	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	70		20 - 156	43/16/23 46:26	43/21/23 16:11	1
13C-2,3,7,8-TCDF	70		26 - 159	43/16/23 46:26	43/21/23 16:11	1
13C-1,2,3,7,8-PeCDD	85		20 - 181	43/16/23 46:26	43/21/23 16:11	1
13C-1,2,3,7,8-PeCDF	80		26 - 180	43/16/23 46:26	43/21/23 16:11	1
13C-2,3,6,7,8-PeCDF	89		21 - 178	43/16/23 46:26	43/21/23 16:11	1
13C-1,2,3,6,7,8-HxCDD	77		32 - 161	43/16/23 46:26	43/21/23 16:11	1
13C-1,2,3,5,7,8-HxCDD	75		28 - 134	43/16/23 46:26	43/21/23 16:11	1
13C-1,2,3,6,7,8-HxCDF	76		25 - 102	43/16/23 46:26	43/21/23 16:11	1
13C-1,2,3,5,7,8-HxCDF	81		25 - 123	43/16/23 46:26	43/21/23 16:11	1
13C-1,2,3,7,8,9-HxCDF	80		29 - 167	43/16/23 46:26	43/21/23 16:11	1
13C-2,3,6,5,7,8-HxCDF	86		28 - 135	43/16/23 46:26	43/21/23 16:11	1
13C-1,2,3,6,5,7,8-HpCDD	76		23 - 164	43/16/23 46:26	43/21/23 16:11	1
13C-1,2,3,6,5,7,8-HpCDF	71		28 - 163	43/16/23 46:26	43/21/23 16:11	1
13C-1,2,3,6,7,8,9-HpCDF	79		25 - 138	43/16/23 46:26	43/21/23 16:11	1
13C-OCDD	94		17 - 107	43/16/23 46:26	43/21/23 16:11	1

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: A1BPSW0001_20230224
Date Collected: 02/24/23 09:00
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129285-2
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-OCDF	91		17 - 107	43/16/23 46:26	43/21/23 16:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	93		30 - 197	43/16/23 46:26	43/21/23 16:11	1

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: EPSW001IE01_20230224
Date Collected: 02/24/23 08:00
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129285-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000011	0.00000091	ug/L		03/14/23 04:24	03/22/23 16:36	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*59*		*26 - 159*	*43/16/23 46:26*	*43/22/23 15:35*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*149*		*30 - 197*	*43/16/23 46:26*	*43/22/23 15:35*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (35-197)**
570-129285-1	EPSW001IE01_20230224	94
570-129285-1 - RA	EPSW001IE01_20230224	109
570-129285-2	A1BPSW0001_20230224	93
MB 320-660580/1-A	Method Blank	92

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (31-191)**
LCS 320-660580/2-A	Lab Control Sample	89
LCSD 320-660580/3-A	Lab Control Sample Dup	92

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-129285-1	EPSW001IE01_20230224	73	75	84	84	83	71	75	70
570-129285-1 - RA	EPSW001IE01_20230224		69						
570-129285-2	A1BPSW0001_20230224	75	75	86	85	89	77	76	74
MB 320-660580/1-A	Method Blank	70	67	80	74	76	70	71	68

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-129285-1	EPSW001IE01_20230224	78	87	85	75	71	80	91	92
570-129285-1 - RA	EPSW001IE01_20230224								
570-129285-2	A1BPSW0001_20230224	81	85	84	74	71	79	90	91
MB 320-660580/1-A	Method Blank	69	76	74	83	73	81	85	82

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-660580/2-A	Lab Control Sample	72	70	78	77	78	76	72	74
LCSD 320-660580/3-A	Lab Control Sample Dup	67	66	71	69	71	66	65	65

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-660580/2-A	Lab Control Sample	76	82	79	89	79	88	91	91
LCSD 320-660580/3-A	Lab Control Sample Dup	67	73	73	80	70	78	84	84

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-660580/1-A
Matrix: Water
Analysis Batch: 662166

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 660580

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000011	ug/L		03/14/23 04:24	03/21/23 00:47	1
2,3,7,8-TCDF	ND		0.000010	0.00000046	ug/L		03/14/23 04:24	03/21/23 00:47	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000035	ug/L		03/14/23 04:24	03/21/23 00:47	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000031	ug/L		03/14/23 04:24	03/21/23 00:47	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000034	ug/L		03/14/23 04:24	03/21/23 00:47	1
1,2,3,4,7,8-HxCDD	0.00000173	J,DX	0.000050	0.00000033	ug/L		03/14/23 04:24	03/21/23 00:47	1
1,2,3,6,7,8-HxCDD	0.000000382	J,DX q	0.000050	0.00000034	ug/L		03/14/23 04:24	03/21/23 00:47	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000029	ug/L		03/14/23 04:24	03/21/23 00:47	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000029	ug/L		03/14/23 04:24	03/21/23 00:47	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000031	ug/L		03/14/23 04:24	03/21/23 00:47	1
1,2,3,7,8,9-HxCDF	0.00000112	J,DX	0.000050	0.00000031	ug/L		03/14/23 04:24	03/21/23 00:47	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000028	ug/L		03/14/23 04:24	03/21/23 00:47	1
1,2,3,4,6,7,8-HpCDD	0.00000133	J,DX q	0.000050	0.00000019	ug/L		03/14/23 04:24	03/21/23 00:47	1
1,2,3,4,6,7,8-HpCDF	0.00000131	J,DX	0.000050	0.00000025	ug/L		03/14/23 04:24	03/21/23 00:47	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000028	ug/L		03/14/23 04:24	03/21/23 00:47	1
OCDD	0.00000549	J,DX	0.00010	0.00000046	ug/L		03/14/23 04:24	03/21/23 00:47	1
OCDF	0.00000166	J,DX q	0.00010	0.00000029	ug/L		03/14/23 04:24	03/21/23 00:47	1
Total TCDD	0.0000160	q	0.000010	0.0000011	ug/L		03/14/23 04:24	03/21/23 00:47	1
Total TCDF	ND		0.000010	0.00000046	ug/L		03/14/23 04:24	03/21/23 00:47	1
Total PeCDD	0.000000615	J,DX q	0.000050	0.00000035	ug/L		03/14/23 04:24	03/21/23 00:47	1
Total PeCDF	ND		0.000050	0.00000034	ug/L		03/14/23 04:24	03/21/23 00:47	1
Total HxCDD	0.00000320	J,DX q	0.000050	0.00000032	ug/L		03/14/23 04:24	03/21/23 00:47	1
Total HxCDF	0.00000112	J,DX	0.000050	0.00000030	ug/L		03/14/23 04:24	03/21/23 00:47	1
Total HpCDD	0.00000293	J,DX q	0.000050	0.00000019	ug/L		03/14/23 04:24	03/21/23 00:47	1
Total HpCDF	0.00000131	J,DX	0.000050	0.00000026	ug/L		03/14/23 04:24	03/21/23 00:47	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 164*	*03/14/23 04:24*	*03/21/23 00:47*	*1*
13C-2,3,7,8-TCDF	*67*		*24 - 169*	*03/14/23 04:24*	*03/21/23 00:47*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*25 - 181*	*03/14/23 04:24*	*03/21/23 00:47*	*1*
13C-1,2,3,7,8-PeCDF	*74*		*24 - 185*	*03/14/23 04:24*	*03/21/23 00:47*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-660580/1-A
Matrix: Water
Analysis Batch: 662166

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 660580

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	76		21 - 178	03/14/23 04:24	03/21/23 00:47	1
13C-1,2,3,4,7,8-HxCDD	70		32 - 141	03/14/23 04:24	03/21/23 00:47	1
13C-1,2,3,6,7,8-HxCDD	71		28 - 130	03/14/23 04:24	03/21/23 00:47	1
13C-1,2,3,4,7,8-HxCDF	68		26 - 152	03/14/23 04:24	03/21/23 00:47	1
13C-1,2,3,6,7,8-HxCDF	69		26 - 123	03/14/23 04:24	03/21/23 00:47	1
13C-1,2,3,7,8,9-HxCDF	76		29 - 147	03/14/23 04:24	03/21/23 00:47	1
13C-2,3,4,6,7,8-HxCDF	74		28 - 136	03/14/23 04:24	03/21/23 00:47	1
13C-1,2,3,4,6,7,8-HpCDD	83		23 - 140	03/14/23 04:24	03/21/23 00:47	1
13C-1,2,3,4,6,7,8-HpCDF	73		28 - 143	03/14/23 04:24	03/21/23 00:47	1
13C-1,2,3,4,7,8,9-HpCDF	81		26 - 138	03/14/23 04:24	03/21/23 00:47	1
13C-OCDD	85		17 - 157	03/14/23 04:24	03/21/23 00:47	1
13C-OCDF	82		17 - 157	03/14/23 04:24	03/21/23 00:47	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	92		35 - 197	03/14/23 04:24	03/21/23 00:47	1

Lab Sample ID: LCS 320-660580/2-A
Matrix: Water
Analysis Batch: 662166

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 660580

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000195		ug/L		97	67 - 158
2,3,7,8-TCDF	0.000200	0.000206		ug/L		103	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000905		ug/L		91	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000958		ug/L		96	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000959		ug/L		96	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000890		ug/L		89	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000953		ug/L		95	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000939		ug/L		94	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000918		ug/L		92	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000941		ug/L		94	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000896		ug/L		90	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000925		ug/L		93	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000880		ug/L		88	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000924		ug/L		92	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000887		ug/L		89	78 - 138
OCDD	0.00200	0.00189		ug/L		95	78 - 144
OCDF	0.00200	0.00191		ug/L		96	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	72		20 - 175
13C-2,3,7,8-TCDF	70		22 - 152
13C-1,2,3,7,8-PeCDD	78		21 - 227
13C-1,2,3,7,8-PeCDF	77		21 - 192
13C-2,3,4,7,8-PeCDF	78		13 - 328
13C-1,2,3,4,7,8-HxCDD	76		21 - 193
13C-1,2,3,6,7,8-HxCDD	72		25 - 163
13C-1,2,3,4,7,8-HxCDF	74		19 - 202

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-660580/2-A
Matrix: Water
Analysis Batch: 662166

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 660580

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,6,7,8-HxCDF	76		21 - 159
13C-1,2,3,7,8,9-HxCDF	82		17 - 205
13C-2,3,4,6,7,8-HxCDF	79		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	89		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	79		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	88		20 - 186
13C-OCDD	91		13 - 199
13C-OCDF	91		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	89		31 - 191

Lab Sample ID: LCSD 320-660580/3-A
Matrix: Water
Analysis Batch: 662166

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 660580

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000199		ug/L		100	67 - 158	2	50
2,3,7,8-TCDF			0.000200	0.000205		ug/L		102	75 - 158	1	50
1,2,3,7,8-PeCDD			0.00100	0.000956		ug/L		96	70 - 142	5	50
1,2,3,7,8-PeCDF			0.00100	0.00102		ug/L		102	80 - 134	6	50
2,3,4,7,8-PeCDF			0.00100	0.00100		ug/L		100	68 - 160	5	50
1,2,3,4,7,8-HxCDD			0.00100	0.000964		ug/L		96	70 - 164	8	50
1,2,3,6,7,8-HxCDD			0.00100	0.00102		ug/L		102	76 - 134	7	50
1,2,3,7,8,9-HxCDD			0.00100	0.00102		ug/L		102	64 - 162	8	50
1,2,3,4,7,8-HxCDF			0.00100	0.000972		ug/L		97	72 - 134	6	50
1,2,3,6,7,8-HxCDF			0.00100	0.000982		ug/L		98	84 - 130	4	50
1,2,3,7,8,9-HxCDF			0.00100	0.000977		ug/L		98	78 - 130	9	50
2,3,4,6,7,8-HxCDF			0.00100	0.000976		ug/L		98	70 - 156	5	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000925		ug/L		92	70 - 140	5	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000993		ug/L		99	82 - 122	7	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000950		ug/L		95	78 - 138	7	50
OCDD			0.00200	0.00198		ug/L		99	78 - 144	4	50
OCDF			0.00200	0.00199		ug/L		100	63 - 170	4	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	67		20 - 175
13C-2,3,7,8-TCDF	66		22 - 152
13C-1,2,3,7,8-PeCDD	71		21 - 227
13C-1,2,3,7,8-PeCDF	69		21 - 192
13C-2,3,4,7,8-PeCDF	71		13 - 328
13C-1,2,3,4,7,8-HxCDD	66		21 - 193
13C-1,2,3,6,7,8-HxCDD	65		25 - 163
13C-1,2,3,4,7,8-HxCDF	65		19 - 202
13C-1,2,3,6,7,8-HxCDF	67		21 - 159
13C-1,2,3,7,8,9-HxCDF	73		17 - 205
13C-2,3,4,6,7,8-HxCDF	73		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	80		26 - 166

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-660580/3-A
Matrix: Water
Analysis Batch: 662166

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 660580

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDF	70		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	78		20 - 186
13C-OCDD	84		13 - 199
13C-OCDF	84		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	92		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-3

Specialty Organics

Prep Batch: 660580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1 - RA	EPSW001IE01_20230224	Total/NA	Water	1613B	
570-129285-1	EPSW001IE01_20230224	Total/NA	Water	1613B	
570-129285-2	A1BPSW0001_20230224	Total/NA	Water	1613B	
MB 320-660580/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-660580/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-660580/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 662166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-660580/1-A	Method Blank	Total/NA	Water	1613B	660580
LCS 320-660580/2-A	Lab Control Sample	Total/NA	Water	1613B	660580
LCSD 320-660580/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	660580

Analysis Batch: 662320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Total/NA	Water	1613B	660580
570-129285-2	A1BPSW0001_20230224	Total/NA	Water	1613B	660580

Analysis Batch: 662589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1 - RA	EPSW001IE01_20230224	Total/NA	Water	1613B	660580

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_20230224
Lab Sample ID: 570-129285-1
Date Collected: 02/24/23 08:00
Matrix: Water
Date Received: 02/28/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		898.9 mL	20.0 uL	660580	03/14/23 04:24	FC	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	662589	03/22/23 16:36	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			898.9 mL	20.0 uL	660580	03/14/23 04:24	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	662320	03/21/23 13:24	DB	EET SAC
	Instrument ID: 12D5									

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2
Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1030.6 mL	20.0 uL	660580	03/14/23 04:24	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	662320	03/21/23 14:11	DB	EET SAC
	Instrument ID: 12D5									

Laboratory References:
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-23 *
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129285-1	EPSW001IE01_20230224	Water	02/24/23 08:00	02/28/23 17:07
570-129285-2	A1BPSW0001_20230224	Water	02/24/23 09:00	02/28/23 17:07

129285

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under this CoC shall be performed in accordance with the T&C's within Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			Job / SDG No.
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Dissolved)	Method 200.8. As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230224	0800	02/24/23	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
1BPSW0001_20230224	0900	02/24/23	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
DUP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	4	2	1	1				

570-129285 Chain of Custody

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C) Obs'd: ____ Corr'd: ____ Therm ID No.: ____

	Company	Date/Time			
Relinquished by:	JHA	02/28/23	Received by:	EC	Date/Time: 2/28/23 1330
Relinquished by:	EC	2/28/23 1707	Received by:		Date/Time: 2/28/23 1707
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

3.1/3.0 2.6/2.5 SC12

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

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3/23/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208823.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-129285-3
Address: 880 Riverside Parkway,	Due Date Requested: 3/16/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230224 (570-129285-1)	2/24/23	08:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero
A1BPSW0001_20230224 (570-129285-2)	2/24/23	09:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 03/01/23 10:37	Company: EC	Received by: [signature]	Date/Time: 3225 920	Company: GBT8AC
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.4c

Ver: 06/08/2021

3/23/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129285-3

Login Number: 129285
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129285-3

Login Number: 129285
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/02/23 12:16 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.4c 1.6c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-129285-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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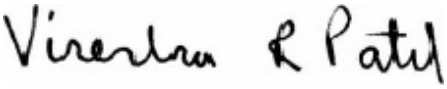
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-4

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129285-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129285-4

Comments
No additional comments.

Receipt
The samples were received on 2/28/2023 5:07 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.5º C and 3.0º C.

Receipt Exceptions

The reference method requires samples to have a pH of <2. The following samples were received with a pH of 7: <Affected Samples>. The samples were adjusted to the appropriate pH in the laboratory.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 604597
The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass: EPSW001IE01_20230224 (570-129285-1). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 604597
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20230224 (570-129285-1), A1BPSW0001_20230224 (570-129285-2), (LCS 160-604597/2-A), (LCSB 160-604597/3-A), (MB 160-604597/1-A), (570-129285-K-2-F DU), (570-129285-K-2-D MS) and (570-129285-K-2-E MSBT)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is

Job ID: 570-129285-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_20230224 (570-129285-1), A1BPSW0001_20230224 (570-129285-2), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 901.1: Gamma Prep Batch 160-604032
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

**The method blank (MB) Z-score is within limits and is located in the level IV raw data.

EPSW001IE01_20230224 (570-129285-1), A1BPSW0001_20230224 (570-129285-2), (570-128840-R-1-D) and (570-128840-R-1-E DU)

Method 906.0: Tritium 605070
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPSW001IE01_20230224 (570-129285-1), A1BPSW0001_20230224 (570-129285-2), (LCS 160-605070/2-A), (MB 160-605070/1-A), (160-49329-A-1-A), (160-49329-A-1-B DU), (160-49329-A-2-A) and (160-49329-A-2-B MS)

Method A-01-R: Isotopic Uranium batch 604368
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20230224 (570-129285-1), A1BPSW0001_20230224 (570-129285-2), (LCS 160-604368/2-A), (MB 160-604368/1-A) and (570-129285-J-1-E DU)

Job ID: 570-129285-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method ExtChrom: Uranium Prep Batch 160-604368:

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPSW001IE01_20230224 (570-129285-1) and A1BPSW0001_20230224 (570-129285-2).

Method LSC_Dist_Susp:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method Filtration: Filtration Prep Batch 160-602821:

Sample was mistakenly preserved upon receipt.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_20230224
Lab Sample ID: 570-129285-1

No Detections.

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPSW001IE01_20230224
Date Collected: 02/24/23 08:00
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129285-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	32.1	G	7.99	8.79	3.00	7.27	pCi/L	03/22/23 10:11	03/30/23 16:18	1
Gross Beta	26.3		3.54	4.41	4.00	3.42	pCi/L	03/22/23 10:11	03/30/23 16:18	1

Client Sample ID: A1BPSW0001_20230224
Date Collected: 02/24/23 09:00
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129285-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	7.57		2.45	2.60	3.00	2.82	pCi/L	03/22/23 10:11	03/30/23 16:18	1
Gross Beta	7.02		1.08	1.29	4.00	1.02	pCi/L	03/22/23 10:11	03/30/23 16:18	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPSW001IE01_20230224
Date Collected: 02/24/23 08:00
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129285-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.656	U	0.777	0.780	3.00	1.27	pCi/L	03/22/23 10:11	03/30/23 16:13	1
Gross Beta	**2.86**		0.798	0.848	4.00	1.02	pCi/L	03/22/23 10:11	03/30/23 16:13	1

Client Sample ID: A1BPSW0001_20230224
Date Collected: 02/24/23 09:00
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129285-2
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.01	U	0.975	0.982	3.00	1.56	pCi/L	03/22/23 10:11	03/30/23 16:33	1
Gross Beta	**1.64**		0.638	0.658	4.00	0.852	pCi/L	03/22/23 10:11	03/30/23 16:33	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPSW001IE01_20230224 **Lab Sample ID: 570-129285-1**
Date Collected: 02/24/23 08:00 **Matrix: Water**
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.173	U	9.77	9.77	20.0	12.8	pCi/L	03/17/23 14:08	03/28/23 19:31	1
Potassium-40	-40.3	U	143	143		196	pCi/L	03/17/23 14:08	03/28/23 19:31	1

Client Sample ID: A1BPSW0001_20230224 **Lab Sample ID: 570-129285-2**
Date Collected: 02/24/23 09:00 **Matrix: Water**
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.89	U	12.6	12.6	20.0	15.0	pCi/L	03/17/23 14:08	03/28/23 20:39	1
Potassium-40	52.5	U	93.1	93.3		101	pCi/L	03/17/23 14:08	03/28/23 20:39	1

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPSW001IE01_20230224 **Lab Sample ID: 570-129285-1**
Date Collected: 02/24/23 08:00 **Matrix: Water**
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-3.40	U	12.7	12.7	20.0	15.0	pCi/L	03/22/23 16:26	03/30/23 03:05	1
Potassium-40	**222**		79.7	83.9		52.7	pCi/L	03/22/23 16:26	03/30/23 03:05	1

Client Sample ID: A1BPSW0001_20230224 **Lab Sample ID: 570-129285-2**
Date Collected: 02/24/23 09:00 **Matrix: Water**
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-4.77	U	12.3	12.3	20.0	15.2	pCi/L	03/22/23 16:26	03/30/23 03:10	1
Potassium-40	16.0	U	85.7	85.8		156	pCi/L	03/22/23 16:26	03/30/23 03:10	1

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPSW001IE01_20230224
Lab Sample ID: 570-129285-1
Date Collected: 02/24/23 08:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-32.0	U	166	166	500	310	pCi/L	03/27/23 11:11	03/28/23 00:02	1

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2
Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-17.6	U	166	166	500	306	pCi/L	03/27/23 11:11	03/28/23 00:25	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPSW001IE01_20230224 **Lab Sample ID: 570-129285-1**
Date Collected: 02/24/23 08:00 **Matrix: Water**
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	**1.05**		0.735	0.738	1.00	0.756	pCi/L	03/20/23 12:19	03/27/23 14:38	1

Client Sample ID: A1BPSW0001_20230224 **Lab Sample ID: 570-129285-2**
Date Collected: 02/24/23 09:00 **Matrix: Water**
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.669	U	0.687	0.688	1.00	0.813	pCi/L	03/20/23 12:19	03/27/23 14:38	1

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPSW001IE01_20230224
Lab Sample ID: 570-129285-1
Date Collected: 02/24/23 08:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.357		0.202	0.203	1.00	0.159	pCi/L	03/20/23 12:19	03/27/23 14:38	1

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2
Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.170		0.138	0.139	1.00	0.147	pCi/L	03/20/23 12:19	03/27/23 14:38	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		U-232							
Lab Sample ID	Client Sample ID	(30-110)							
LCS 160-604368/2-A	Lab Control Sample	93.0							
MB 160-604368/1-A	Method Blank	90.9							

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)							
		U-232							
Lab Sample ID	Client Sample ID	(30-110)							
570-129285-1 DU	EPSW001IE01_20230224	86.2							

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-604597/1-A
Matrix: Water
Analysis Batch: 605623

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604597

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.1911	U	0.472	0.473	3.00	0.857	pCi/L	03/22/23 10:11	03/30/23 12:26	1
Gross Beta	0.01453	U	0.455	0.455	4.00	0.815	pCi/L	03/22/23 10:11	03/30/23 12:26	1

Lab Sample ID: LCS 160-604597/2-A
Matrix: Water
Analysis Batch: 605623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604597

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	56.43		8.17	3.00	2.20	pCi/L	112	75 - 125

Lab Sample ID: LCSB 160-604597/3-A
Matrix: Water
Analysis Batch: 605623

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604597

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.5	73.50		7.87	4.00	0.785	pCi/L	100	75 - 125

Lab Sample ID: 570-129285-2 MS
Matrix: Water
Analysis Batch: 605624

Client Sample ID: A1BPSW0001_20230224
Prep Type: Total/NA
Prep Batch: 604597

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	7.57		50.5	56.71		8.47	3.00	2.63	pCi/L	97	60 - 140

Lab Sample ID: 570-129285-2 MSBT
Matrix: Water
Analysis Batch: 605624

Client Sample ID: A1BPSW0001_20230224
Prep Type: Total/NA
Prep Batch: 604597

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	7.02		73.5	77.08		8.25	4.00	0.979	pCi/L	95	60 - 140

Lab Sample ID: 570-129285-2 DU
Matrix: Water
Analysis Batch: 605623

Client Sample ID: A1BPSW0001_20230224
Prep Type: Total/NA
Prep Batch: 604597

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	7.57		5.284		1.83	3.00	1.59	pCi/L	0.52	1
Gross Beta	7.02		6.647		1.21	4.00	0.898	pCi/L	0.15	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604032/1-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604032

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.4655	U	10.3	10.3	20.0	12.1	pCi/L	03/17/23 14:08	03/22/23 19:49	1
Potassium-40	12.53	U	78.9	78.9		135	pCi/L	03/17/23 14:08	03/22/23 19:49	1

Lab Sample ID: LCS 160-604032/2-A
Matrix: Water
Analysis Batch: 604760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604032

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	143200		17000		415	pCi/L	106	75 - 125
Cesium-137	40900	41780		4980	20.0	92.9	pCi/L	102	75 - 125
Cobalt-60	17800	18360		2190		50.3	pCi/L	103	75 - 125

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	5.575	U	11.5	11.5	20.0	14.5	pCi/L	03/22/23 16:26	03/29/23 21:25	1
Potassium-40	-139.9	U	180	180		285	pCi/L	03/22/23 16:26	03/29/23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		443	pCi/L	100	75 - 125
Cesium-137	40800	42170		5030	20.0	105	pCi/L	103	75 - 125
Cobalt-60	17800	18660		2230		54.8	pCi/L	105	75 - 125

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-605070/1-A
Matrix: Water
Analysis Batch: 605427

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605070

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-24.32	U	167	167	500	309	pCi/L	03/27/23 11:11	03/27/23 19:54	1

Lab Sample ID: LCS 160-605070/2-A
Matrix: Water
Analysis Batch: 605427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605070

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2100	1848		360	500	314	pCi/L	88	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-604368/1-A
Matrix: Water
Analysis Batch: 605170

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604368

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.08470	U	0.1041	0.1042	1.00	0.161	pCi/L	03/20/23 12:19	03/27/23 14:38	1
Total Uranium	0.08470	U	0.1041	0.1042	1.00	0.161	pCi/L	03/20/23 12:19	03/27/23 14:38	1

Lab Sample ID: LCS 160-604368/2-A
Matrix: Water
Analysis Batch: 605172

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604368

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	11.77		1.40	1.00	0.159	pCi/L	92	75 - 125		
Uranium-238			13.0	13.98		1.59	1.00	0.126	pCi/L	107	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*93.0*		*30 - 110*

Lab Sample ID: 570-129285-1 DU
Matrix: Water
Analysis Batch: 605183

Client Sample ID: EPSW001IE01_20230224
Prep Type: Dissolved
Prep Batch: 604368

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.357			0.5049		0.219	1.00	0.172	pCi/L			0.35	1
Total Uranium	0.357			0.5049		0.219	1.00	0.172	pCi/L			0.35	1

Rad

Filtration Batch: 602821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Dissolved	Water	Filtration	
570-129285-1	EPSW001IE01_20230224	Dissolved	Water	Filtration	
570-129285-1	EPSW001IE01_20230224	Dissolved	Water	Filtration	
570-129285-2	A1BPSW0001_20230224	Dissolved	Water	Filtration	
570-129285-2	A1BPSW0001_20230224	Dissolved	Water	Filtration	
570-129285-1 DU	EPSW001IE01_20230224	Dissolved	Water	Filtration	

Prep Batch: 604032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Total/NA	Water	Fill_Geo-0	
570-129285-2	A1BPSW0001_20230224	Total/NA	Water	Fill_Geo-0	
MB 160-604032/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604032/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 604368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Dissolved	Water	ExtChrom	602821
570-129285-1	EPSW001IE01_20230224	Total/NA	Water	ExtChrom	
570-129285-2	A1BPSW0001_20230224	Dissolved	Water	ExtChrom	602821
570-129285-2	A1BPSW0001_20230224	Total/NA	Water	ExtChrom	
MB 160-604368/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-604368/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-129285-1 DU	EPSW001IE01_20230224	Dissolved	Water	ExtChrom	602821

Prep Batch: 604597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Dissolved	Water	Evaporation	602821
570-129285-1	EPSW001IE01_20230224	Total/NA	Water	Evaporation	
570-129285-2	A1BPSW0001_20230224	Dissolved	Water	Evaporation	602821
570-129285-2	A1BPSW0001_20230224	Total/NA	Water	Evaporation	
MB 160-604597/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-604597/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-604597/3-A	Lab Control Sample	Total/NA	Water	Evaporation	
570-129285-2 MS	A1BPSW0001_20230224	Total/NA	Water	Evaporation	
570-129285-2 MSBT	A1BPSW0001_20230224	Total/NA	Water	Evaporation	
570-129285-2 DU	A1BPSW0001_20230224	Total/NA	Water	Evaporation	

Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Dissolved	Water	Fill_Geo-0	602821
570-129285-2	A1BPSW0001_20230224	Dissolved	Water	Fill_Geo-0	602821
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129285-1	EPSW001IE01_20230224	Total/NA	Water	LSC_Dist_Susp	
570-129285-2	A1BPSW0001_20230224	Total/NA	Water	LSC_Dist_Susp	
MB 160-605070/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-605070/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_20230224
Lab Sample ID: 570-129285-1
Date Collected: 02/24/23 08:00
Matrix: Water
Date Received: 02/28/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	Evaporation			200.01 mL	1.0 g	604597	03/22/23 10:11	MST	EET SL
Dissolved	Analysis	900.0		1			605623	03/30/23 16:13	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Evaporation			73.53 mL	1.0 g	604597	03/22/23 10:11	MST	EET SL
Total/NA	Analysis	900.0		1			605624	03/30/23 16:18	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1900 mL	1900 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Dissolved	Analysis	901.1		1			605602	03/30/23 03:05	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604032	03/17/23 14:08	SEH	EET SL
Total/NA	Analysis	901.1		1			605209	03/28/23 19:31	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	LSC_Dist_Susp			98.40 mL	1.0 g	605070	03/27/23 11:11	SEH	EET SL
Total/NA	Analysis	906.0		1			605427	03/28/23 00:02	REV	EET SL
	Instrument ID: LSC3180									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:53	SRE	EET SL
Dissolved	Prep	ExtChrom			496.69 mL	1.0 mL	604368	03/20/23 12:19	MAL	EET SL
Dissolved	Analysis	A-01-R		1			605182	03/27/23 14:38	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			103.66 mL	1.0 mL	604368	03/20/23 12:19	MAL	EET SL
Total/NA	Analysis	A-01-R		1			605181	03/27/23 14:38	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2
Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:57	SRE	EET SL
Dissolved	Prep	Evaporation			200.00 mL	1.0 g	604597	03/22/23 10:11	MST	EET SL
Dissolved	Analysis	900.0		1			605623	03/30/23 16:33	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	604597	03/22/23 10:11	MST	EET SL
Total/NA	Analysis	900.0		1			605624	03/30/23 16:18	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:57	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Dissolved	Analysis	901.1		1			605605	03/30/23 03:10	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604032	03/17/23 14:08	SEH	EET SL
Total/NA	Analysis	901.1		1			605204	03/28/23 20:39	EMH	EET SL
	Instrument ID: GAMMAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: A1BPSW0001_20230224
Lab Sample ID: 570-129285-2

Date Collected: 02/24/23 09:00
Matrix: Water
Date Received: 02/28/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	LSC_Dist_Susp			99.95 mL	1.0 g	605070	03/27/23 11:11	SEH	EET SL
Total/NA	Analysis	906.0		1			605427	03/28/23 00:25	REV	EET SL
	Instrument ID: LSC3180									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	602821	03/08/23 10:57	SRE	EET SL
Dissolved	Prep	ExtChrom			499.27 mL	1.0 mL	604368	03/20/23 12:19	MAL	EET SL
Dissolved	Analysis	A-01-R		1			605185	03/27/23 14:38	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			100.01 mL	1.0 mL	604368	03/20/23 12:19	MAL	EET SL
Total/NA	Analysis	A-01-R		1			605184	03/27/23 14:38	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-129285-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Connecticut	State	PH-0241	03-31-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-30-23
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-4

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-129285-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129285-1	EPSW001IE01_20230224	Water	02/24/23 08:00	02/28/23 17:07
570-129285-2	A1BPSW0001_20230224	Water	02/24/23 09:00	02/28/23 17:07

129285

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica's services under thi CoC shall be performed in accordance with the T&C within Blanket Service Agreement# 2019-22 TestAmerica by and between Haley & Aldrich Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number 129095-010-001-06	☐ 1 week			Job / SDG No.
Site: BMP Performance OF 001 002, 009 and/or 011 Watersheds	☑ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0), Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8 As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Dissolved)	Method 200.8. As, Cd, Cu, Pb, Se Method 200.7 Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)			Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230224	0800	02/24/23	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
1BPSW0001_20230224	0900	02/24/23	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
DUP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4, 4=HNO3; 5=NaOH; 6= Other								1	1	1	1	1	1	4	2	1	1			

570-129285 Chain of Custody

Possible Hazard Identification

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L)

Custody Seals Intact: ☐ Yes | Custody Seal No. | Cooler Temp. (°C) Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by:	Company: SHA	Date/Time: 02/28/23	Received by:	EC	Date/Time: 2/28/23 1330
Relinquished by:	Company: EC	Date/Time: 2/28/23 1707	Received by:		Date/Time: 2/28/23 1707
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

3.1/3.0 2.6/2.5 SC12

Form No. CA-C-WI-045, Rev 1.2, dated 1/8/2016

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4/4/2023

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-208820.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-129285-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 3/31/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
EPSW001IE01_20230224 (570-129285-1)	2/24/23	08:00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation
A1BPSW0001_20230224 (570-129285-2)	2/24/23	09:00 Pacific		Water			X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 03/01/23 10:37	Company: EE	Received by: FEDEX	Date/Time:	Company
Relinquished by: FEDEX	Date/Time:	Company	Received by: Briana Sharkey - Gazalez	Date/Time: 3/2/23 0950	Company: ETAS TL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129285-4

Login Number: 129285
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129285-4

Login Number: 129285
List Number: 4
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 03/03/23 10:21 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/4/2023 10:46:44 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131073-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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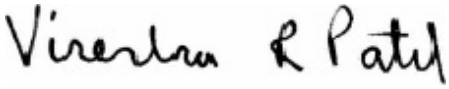
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits
LR	LCS/LCSD recovery below method control limits
MB	Analyte present in the method blank

GC Semi VOA

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

HPLC/IC

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131073-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131073-1

Comments
No additional comments.

Receipt
The samples were received on 3/14/2023 6:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.4º C.

Receipt Exceptions

TB_20230314-1 (570-131073-3). The laboratory did not receive 3x Vials 40ml HCL (Trip Blank)that was Listed on the Chain-of-Custody on the following sample # 3

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-311826. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-311925. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) for preparation batch 570-311840 and analytical batch 570-314108 recovered outside acceptance limits for Benzidine. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

Method 625.1 SIM: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-311840 and analytical batch 570-314108 recovered outside control limits for the following analytes: Di-n-octyl phthalate. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 625.1 SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 570-311840 and analytical batch 570-314108 recovered outside control limits for the following analytes: Benzidine and Di-n-octyl phthalate.

Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-314108 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: BGMP0003_20230314 (570-131073-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 570-131073-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

Metals
Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-312120 and analytical batch 570-312206 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: BGMP0003_20230314 (570-131073-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: BGMP0003_20230314 (570-131073-1), (570-131073-AA-1 MS) and (570-131073-AA-1 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540F: Insufficient sample volume was available to perform sample duplicate (DUP) associated with analytical batch 570-311816.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-313523. 8015B_DRO. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-311840.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method:625 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Client Sample ID: BGMP0003_20230314

Lab Sample ID: 570-131073-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[b]fluoranthene	0.13	J,DX MB	0.20	0.11	ug/L	1		625.1 SIM	Total/NA
C13-C28	0.038	J,DX	0.050	0.036	mg/L	1		8015B	Total/NA
Chloride	5.1		1.0	0.36	mg/L	1		300.0	Total/NA
Fluoride	0.067	J,DX	0.10	0.046	mg/L	1		300.0	Total/NA
Nitrate as N	0.19		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	5.1		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	0.19		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	50	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	45	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Aluminum	890		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	0.75	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	30		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	1.8	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Cobalt	0.71	J,DX	1.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	2.3		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	1400		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	39		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	2.5		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	2.0		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	1.4	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Zinc	6.5	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Aluminum	29	BU	15	8.6	ug/L	1		200.8	Dissolved
Arsenic	0.42	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	18	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.21	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Cobalt	0.14	J,DX BU	1.0	0.14	ug/L	1		200.8	Dissolved
Copper	1.3	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	39	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	3.9	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.4	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Hardness as calcium carbonate	48		7.1	0.50	mg/L	1		SM 2340B	Total Recoverable
Hardness as calcium carbonate	40		7.1	0.50	mg/L	1		SM 2340B	Dissolved
Turbidity	15		0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	120		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Specific Conductance	120		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	110		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	34		5.0	4.1	mg/L	1		SM 2540D	Total/NA
Settleable Solids	0.10		0.10	0.10	mL/L	1		SM 2540F	Total/NA
Carbon, Total Organic	8.6		0.50	0.26	mg/L	1		SM 5310D	Total/NA
Clay (less than 0.00391 mm)	9.16		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BGMP0003_20230314 (Continued)
Lab Sample ID: 570-131073-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Silt (0.00391 to 0.0625mm)	90.84		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	100.00		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: TB_20230314-1
Lab Sample ID: 570-131073-3

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/15/23 16:18	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/15/23 16:18	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/15/23 16:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/15/23 16:18	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/15/23 16:18	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/15/23 16:18	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/15/23 16:18	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/15/23 16:18	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/15/23 16:18	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/15/23 16:18	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/15/23 16:18	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/15/23 16:18	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/15/23 16:18	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/15/23 16:18	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/15/23 16:18	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 16:18	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/15/23 16:18	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/15/23 16:18	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/15/23 16:18	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 16:18	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/15/23 16:18	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/15/23 16:18	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/15/23 16:18	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/15/23 16:18	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/15/23 16:18	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/15/23 16:18	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/15/23 16:18	1
2-Hexanone	ND		5.0	2.2	ug/L			03/15/23 16:18	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/15/23 16:18	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/15/23 16:18	1
Acetone	ND		20	16	ug/L			03/15/23 16:18	1
Acrolein	ND		5.0	4.6	ug/L			03/15/23 16:18	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/15/23 16:18	1
Benzene	ND		0.50	0.28	ug/L			03/15/23 16:18	1
Bromobenzene	ND		0.50	0.23	ug/L			03/15/23 16:18	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/15/23 16:18	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/15/23 16:18	1
Bromoform	ND		1.0	0.25	ug/L			03/15/23 16:18	1
Bromomethane	ND		0.50	0.22	ug/L			03/15/23 16:18	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/15/23 16:18	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/15/23 16:18	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/15/23 16:18	1
Chloroethane	ND		1.0	0.29	ug/L			03/15/23 16:18	1
Chloroform	ND		0.50	0.19	ug/L			03/15/23 16:18	1
Chloromethane	ND		0.50	0.30	ug/L			03/15/23 16:18	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/15/23 16:18	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/15/23 16:18	1
Cyclohexane	ND		2.0	0.79	ug/L			03/15/23 16:18	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/15/23 16:18	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.50	0.19	ug/L			03/15/23 16:18	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/15/23 16:18	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/15/23 16:18	1
Ethanol	ND		100	65	ug/L			03/15/23 16:18	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/15/23 16:18	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/15/23 16:18	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/15/23 16:18	1
Isopropanol	ND		250	120	ug/L			03/15/23 16:18	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/15/23 16:18	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/15/23 16:18	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/15/23 16:18	1
Naphthalene	ND		1.0	0.33	ug/L			03/15/23 16:18	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/15/23 16:18	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/15/23 16:18	1
o-Xylene	ND		0.50	0.15	ug/L			03/15/23 16:18	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/15/23 16:18	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/15/23 16:18	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/15/23 16:18	1
Styrene	ND		0.50	0.19	ug/L			03/15/23 16:18	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/15/23 16:18	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/15/23 16:18	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/15/23 16:18	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/15/23 16:18	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/15/23 16:18	1
Toluene	ND		0.50	0.23	ug/L			03/15/23 16:18	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/15/23 16:18	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/15/23 16:18	1
Trichloroethene	ND		0.50	0.17	ug/L			03/15/23 16:18	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/15/23 16:18	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/15/23 16:18	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/15/23 16:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*60 - 140*		*03/15/23 16:18*	*1*
4-Bromofluorobenzene (Surr)	*94*		*60 - 140*		*03/15/23 16:18*	*1*
Dibromofluoromethane (Surr)	*88*		*60 - 140*		*03/15/23 16:18*	*1*
Toluene-d8 (Surr)	*96*		*60 - 140*		*03/15/23 16:18*	*1*

Client Sample ID: f B320290914-1
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-9
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/15/23 15:56	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/15/23 15:56	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/15/23 15:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/15/23 15:56	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/15/23 15:56	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/15/23 15:56	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/15/23 15:56	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/15/23 15:56	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: f B320290914-1
Date Collected: 09/14/29 11:10
Date Receiv ed: 09/14/29 1v:05

Lab Sample ID: 570-191079-9
Matri_: x ater

Anal8te	Result	U ualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/15/23 15:56	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/15/23 15:56	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/15/23 15:56	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/15/23 15:56	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/15/23 15:56	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/15/23 15:56	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/15/23 15:56	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 15:56	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/15/23 15:56	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/15/23 15:56	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/15/23 15:56	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 15:56	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/15/23 15:56	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/15/23 15:56	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/15/23 15:56	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/15/23 15:56	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/15/23 15:56	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/15/23 15:56	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/15/23 15:56	1
2-Hexanone	ND		5.0	2.2	ug/L			03/15/23 15:56	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/15/23 15:56	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/15/23 15:56	1
Acetone	ND		20	16	ug/L			03/15/23 15:56	1
Acrolein	ND		5.0	4.6	ug/L			03/15/23 15:56	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/15/23 15:56	1
Benzene	ND		0.50	0.28	ug/L			03/15/23 15:56	1
Bromobenzene	ND		0.50	0.23	ug/L			03/15/23 15:56	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/15/23 15:56	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/15/23 15:56	1
Bromoform	ND		1.0	0.25	ug/L			03/15/23 15:56	1
Bromomethane	ND		0.50	0.22	ug/L			03/15/23 15:56	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/15/23 15:56	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/15/23 15:56	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/15/23 15:56	1
Chloroethane	ND		1.0	0.29	ug/L			03/15/23 15:56	1
Chloroform	ND		0.50	0.19	ug/L			03/15/23 15:56	1
Chloromethane	ND		0.50	0.30	ug/L			03/15/23 15:56	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/15/23 15:56	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/15/23 15:56	1
Cyclohexane	ND		2.0	0.79	ug/L			03/15/23 15:56	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/15/23 15:56	1
Dibromomethane	ND		0.50	0.19	ug/L			03/15/23 15:56	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/15/23 15:56	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/15/23 15:56	1
Ethanol	ND		100	65	ug/L			03/15/23 15:56	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/15/23 15:56	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/15/23 15:56	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/15/23 15:56	1
Isopropanol	ND		250	120	ug/L			03/15/23 15:56	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: f B320290914-1
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-9
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Isopropylbenzene	ND		0.50	0.16	ug/L			03/15/23 15:56	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/15/23 15:56	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/15/23 15:56	1
Naphthalene	ND		1.0	0.33	ug/L			03/15/23 15:56	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/15/23 15:56	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/15/23 15:56	1
o-Xylene	ND		0.50	0.15	ug/L			03/15/23 15:56	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/15/23 15:56	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/15/23 15:56	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/15/23 15:56	1
Styrene	ND		0.50	0.19	ug/L			03/15/23 15:56	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/15/23 15:56	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/15/23 15:56	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/15/23 15:56	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/15/23 15:56	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/15/23 15:56	1
Toluene	ND		0.50	0.23	ug/L			03/15/23 15:56	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/15/23 15:56	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/15/23 15:56	1
Trichloroethene	ND		0.50	0.17	ug/L			03/15/23 15:56	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/15/23 15:56	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/15/23 15:56	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/15/23 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*60 - 140*		*03/15/23 15:56*	*1*
4-Bromofluorobenzene (Surr)	*98*		*60 - 140*		*03/15/23 15:56*	*1*
Dibromofluoromethane (Surr)	*87*		*60 - 140*		*03/15/23 15:56*	*1*
Toluene-d8 (Surr)	*96*		*60 - 140*		*03/15/23 15:56*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: Sx v46 v260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	Uuali0er	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/15/23 21:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*108*		*67 - 133*		*03/15/23 21:09*	*1*

Method: EPA 625.1 SIM - SemiVolatile Organic Compounds GC/MS (SIM)

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	Uuali0er	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 19:48	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 19:48	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.090	ug/L		03/15/23 13:38	03/23/23 19:48	1
1,3-Dichlorobenzene	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 19:48	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		03/15/23 13:38	03/23/23 19:48	1
2,4,6-Trichlorophenol	ND		0.99	0.14	ug/L		03/15/23 13:38	03/23/23 19:48	1
2,4-Dichlorophenol	ND		0.99	0.14	ug/L		03/15/23 13:38	03/23/23 19:48	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 19:48	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		03/15/23 13:38	03/23/23 19:48	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/15/23 13:38	03/23/23 19:48	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		03/15/23 13:38	03/23/23 19:48	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		03/15/23 13:38	03/23/23 19:48	1
2-Chlorophenol	ND		0.20	0.095	ug/L		03/15/23 13:38	03/23/23 19:48	1
2-Nitrophenol	ND		5.0	3.5	ug/L		03/15/23 13:38	03/23/23 19:48	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		03/15/23 13:38	03/23/23 19:48	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		03/15/23 13:38	03/23/23 19:48	1
4-Bromophenyl phenyl ether	ND		0.20	0.099	ug/L		03/15/23 13:38	03/23/23 19:48	1
4-Chloro-3-methylphenol	ND		0.99	0.13	ug/L		03/15/23 13:38	03/23/23 19:48	1
4-Chlorophenyl phenyl ether	ND		0.20	0.16	ug/L		03/15/23 13:38	03/23/23 19:48	1
4-Nitrophenol	ND		5.0	3.3	ug/L		03/15/23 13:38	03/23/23 19:48	1
Acenaphthene	ND		0.20	0.097	ug/L		03/15/23 13:38	03/23/23 19:48	1
Acenaphthylene	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 19:48	1
Anthracene	ND		0.20	0.083	ug/L		03/15/23 13:38	03/23/23 19:48	1
Benzidine	ND	LR BA	5.0	2.7	ug/L		03/15/23 13:38	03/23/23 19:48	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		03/15/23 13:38	03/23/23 19:48	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		03/15/23 13:38	03/23/23 19:48	1
BenFoXb[Quoranthene	**0.19**	**TJD, MB**	0.20	0.11	ug/L		03/15/23 13:38	03/23/23 19:48	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 19:48	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 19:48	1
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 19:48	1
Bis(2-chloroethoxy)methane	ND		0.20	0.10	ug/L		03/15/23 13:38	03/23/23 19:48	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		03/15/23 13:38	03/23/23 19:48	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/15/23 13:38	03/23/23 19:48	1
Butyl benzyl phthalate	ND		0.99	0.67	ug/L		03/15/23 13:38	03/23/23 19:48	1
Chrysene	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 19:48	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		03/15/23 13:38	03/23/23 19:48	1
Diethyl phthalate	ND		2.0	0.18	ug/L		03/15/23 13:38	03/23/23 19:48	1
Dimethyl phthalate	ND		2.0	0.097	ug/L		03/15/23 13:38	03/23/23 19:48	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		03/15/23 13:38	03/23/23 19:48	1
Di-n-octyl phthalate	ND	LQ	3.0	0.53	ug/L		03/15/23 13:38	03/23/23 19:48	1
Fluoranthene	ND		0.20	0.10	ug/L		03/15/23 13:38	03/23/23 19:48	1
Fluorene	ND		0.20	0.094	ug/L		03/15/23 13:38	03/23/23 19:48	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 19:48	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		03/15/23 13:38	03/23/23 19:48	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		03/15/23 13:38	03/23/23 19:48	1
Hexachloroethane	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 19:48	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 19:48	1
Isophorone	ND		0.20	0.098	ug/L		03/15/23 13:38	03/23/23 19:48	1
Naphthalene	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 19:48	1

Method: EPA 625.1 SIM - SemiVolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Nitrobenzene	ND		0.20	0.14	ug/L		03/15/23 13:38	03/23/23 19:48	1
N-Nitrosodimethylamine	ND		0.20	0.18	ug/L		03/15/23 13:38	03/23/23 19:48	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		03/15/23 13:38	03/23/23 19:48	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 19:48	1
Pentachlorophenol	ND		0.99	0.84	ug/L		03/15/23 13:38	03/23/23 19:48	1
Phenanthrene	ND		0.20	0.16	ug/L		03/15/23 13:38	03/23/23 19:48	1
Phenol	ND		0.99	0.52	ug/L		03/15/23 13:38	03/23/23 19:48	1
Pyrene	ND		0.20	0.085	ug/L		03/15/23 13:38	03/23/23 19:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*80*		*28 - 127*	*03/15/23 13:38*	*03/23/23 19:48*	*1*
2-Fluorobiphenyl (Surr)	*61*		*31 - 120*	*03/15/23 13:38*	*03/23/23 19:48*	*1*
2-Fluorophenol	*42*		*17 - 120*	*03/15/23 13:38*	*03/23/23 19:48*	*1*
Nitrobenzene-d5	*69*		*27 - 120*	*03/15/23 13:38*	*03/23/23 19:48*	*1*
Phenol-d6 (Surr)	*29*		*10 - 120*	*03/15/23 13:38*	*03/23/23 19:48*	*1*
p-Terphenyl-d14 (Surr)	*74*		*45 - 120*	*03/15/23 13:38*	*03/23/23 19:48*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: Sx v46 v015B - Gasoline Range Organics - (GC)

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	Uuali0er	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
GRO (C4-C12)	ND		50	30	ug/L			03/21/23 16:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*122*		*20 - 144*		*03/21/23 16:58*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: Sx v46 v015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
C19-C2v	0.09v	TJD,	0.050	0.036	mg/L		03/21/23 17:31	03/27/23 22:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*104*		*53 - 151*	*03/21/23 17:31*	*03/27/23 22:08*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: EPA 21v.6 - ChromiumJ] e_aW4alent (Ion Chromatograph8)

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date ReceiW4ed: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/15/23 03:56	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: EPA 21v.6 - ChromiumJ] e_aW4alent (Ion Chromatograph8) - DissolW4ed

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date ReceiW4ed: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/15/23 05:45	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: EPA 900.0 - AnionsJIon Chromatograph8

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date Receiwed: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Chloride	**5.1**		1.0	0.36	mg/L			03/15/23 08:12	1
Nitrite as N	ND		0.10	0.043	mg/L			03/15/23 08:12	1
yluoride	**0.067**	**TJD,**	0.10	0.046	mg/L			03/15/23 08:12	1
Nitrate as N	**0.1H**		0.10	0.020	mg/L			03/15/23 08:12	1
SulQate	**5.1**		1.0	0.24	mg/L			03/15/23 08:12	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: EPA 914.0 - Perchlorate (IC)

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Perchlorate	ND		2.0	0.91	ug/L			03/15/23 20:26	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: EPA NO2NO9 Calc - NitrogenJNitrate-Nitrite

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Nitrate Nitrite as N	0.1H		0.10	0.020	mg/L			03/20/23 12:49	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: EPA 200.7 ReW4.4 - Metals (ICP) - f otal RecoWerable

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date ReceiWed: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Boron	50	TJD,	500	3.5	ug/L		03/16/23 08:23	03/16/23 23:49	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: EPA 200.7 ReW4.4 - Metals (ICP) - DissolWed

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date ReceiWed: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Boron	45	TJD, Bz	500	3.5	ug/L			03/17/23 19:36	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: EPA 200.v - Metals (ICP/MS) - f otal RecoWerable

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date ReceiWed: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Aluminum	**vH0**		15	8.6	ug/L		03/16/23 07:46	03/16/23 12:11	1
Silver	ND		1.0	0.23	ug/L		03/16/23 07:46	03/16/23 12:11	1
Arsenic	**0.75**	**TJD,**	1.0	0.16	ug/L		03/16/23 07:46	03/16/23 12:11	1
Barium	**90**		1.0	0.17	ug/L		03/16/23 07:46	03/16/23 12:11	1
Beryllium	ND		0.50	0.26	ug/L		03/16/23 07:46	03/16/23 12:11	1
Cadmium	ND		1.0	0.13	ug/L		03/16/23 07:46	03/16/23 12:11	1
Chromium	**1.v**	**TJD,**	2.0	0.14	ug/L		03/16/23 07:46	03/16/23 12:11	1
Cobalt	**0.71**	**TJD,**	1.0	0.14	ug/L		03/16/23 07:46	03/16/23 12:11	1
Copper	**2.9**		2.0	0.32	ug/L		03/16/23 07:46	03/16/23 12:11	1
Iron	**1400**		20	3.7	ug/L		03/16/23 07:46	03/16/23 12:11	1
Manganese	**9H**		1.0	0.41	ug/L		03/16/23 07:46	03/16/23 12:11	1
Nickel	**2.5**		2.0	0.17	ug/L		03/16/23 07:46	03/16/23 12:11	1
Lead	**2.0**		1.0	0.12	ug/L		03/16/23 07:46	03/16/23 12:11	1
Antimon8	**1.4**	**TJD,**	2.0	0.36	ug/L		03/16/23 07:46	03/16/23 12:11	1
Zinc	**6.5**	**TJD,**	20	2.8	ug/L		03/16/23 07:46	03/16/23 12:11	1
Selenium	ND		2.0	0.52	ug/L		03/16/23 07:46	03/16/23 12:11	1
Thallium	ND		1.0	0.11	ug/L		03/16/23 07:46	03/16/23 12:11	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: EPA 200.v - Metals (ICP/MS) - DissolWed

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date ReceiWed: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Aluminum	**2H**	**Bz**	15	8.6	ug/L			03/16/23 12:20	1
Silver	ND	BU	1.0	0.23	ug/L			03/16/23 12:20	1
Arsenic	**0.42**	**TJD, Bz**	1.0	0.16	ug/L			03/16/23 12:20	1
Barium	**1v**	**Bz**	1.0	0.17	ug/L			03/16/23 12:20	1
Beryllium	ND	BU	0.50	0.26	ug/L			03/16/23 12:20	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/16/23 12:20	1
Chromium	**0.21**	**TJD, Bz**	2.0	0.14	ug/L			03/16/23 12:20	1
Cobalt	**0.14**	**TJD, Bz**	1.0	0.14	ug/L			03/16/23 12:20	1
Copper	**1.9**	**TJD, Bz**	2.0	0.32	ug/L			03/16/23 12:20	1
Iron	**9H**	**Bz**	20	3.7	ug/L			03/16/23 12:20	1
Manganese	**9.H**	**Bz**	1.0	0.41	ug/L			03/16/23 12:20	1
Nickel	**1.4**	**TJD, Bz**	2.0	0.17	ug/L			03/16/23 12:20	1
Thallium	ND	BU	1.0	0.11	ug/L			03/16/23 12:20	1
Lead	ND	BU	1.0	0.12	ug/L			03/16/23 12:20	1
Antimony	ND	BU	2.0	0.36	ug/L			03/16/23 12:20	1
Zinc	ND	BU	20	2.8	ug/L			03/16/23 12:20	1
Selenium	ND	BU	2.0	0.52	ug/L			03/16/23 12:20	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: SM 2940B - f otal] ardness (as CaCO9) b8 calculation - f otal RecoWerable

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date ReceiWed: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
] ardness as calcium carbonate	4v		7.1	0.50	mg/L			03/21/23 17:15	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: SM 2940B - f otal] ardness (as CaCO9) b8 calculation - DissolWed

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date ReceiWed: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
] ardness as calcium carbonate	40		7.1	0.50	mg/L			03/21/23 17:28	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

General Chemistr8

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date Received: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	Uuali0er	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
HEM (Oil & Grease) (1664A)	ND		0.98	0.50	mg/L		03/16/23 10:47	03/16/23 16:09	1
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			03/24/23 12:34	1
Ammonia (EPA 350.1)	ND		0.075	0.032	mg/L		03/23/23 12:55	03/23/23 15:01	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/27/23 13:47	1
f urbidit8 (SM 2190B)	**15**		0.05	0.05	NTU			03/15/23 22:19	1
f otal DissolWed Solids (SM 2540C)	**110**		10	8.7	mg/L			03/17/23 18:04	1
f otal Suspended Solids (SM 2540D)	**94**		5.0	4.1	mg/L			03/20/23 13:31	1
Biochemical Oxygen Demand (SM 5210B)	ND		2.0	1.0	mg/L		03/15/23 16:06	03/15/23 17:52	1
CarbonJf otal Organic (SM 5910D)	**v.6**		0.50	0.26	mg/L			03/28/23 08:14	1
MBAS (SM 5540C)	ND		0.20	0.050	mg/L		03/15/23 15:30	03/15/23 17:43	1

Anal8te	Result	Uuali0er	RL	RL	z nit	D	Prepared	Anal8Fed	Dil yac
Speci0c Conductance (SM 2510B)	**120**		1.0	1.0	umhos/cm			03/20/23 17:52	1
Speci0c Conductance (SM 2510B)	**120**		1.0	1.0	umhos/cm			03/20/23 17:52	1
Settleable Solids (SM 2540y)	**0.10**		0.10	0.10	mL/L			03/15/23 09:53	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

General Chemistr8 - DissolWed

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date ReceiWed: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	MDL	z nit	D	Prepared	Anal8Fed	Dil yac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			03/24/23 12:34	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: ASf M D4464 - Particle SiFe Distribution oQ Catal8tic Material (Laser light scattering)

Client Sample ID: BGMP0009320290914
Date Collected: 09/14/29 11:10
Date ReceiWed: 09/14/29 1v:05

Lab Sample ID: 570-191079-1
Matri_: x ater

Anal8te	Result	UualiQer	RL	RL	z nit	D	Prepared	Anal8Fed	Dil yac
Cla8 (less than 0.009H1 mm)	**H.16**		0.01	0.01	%			03/20/23 18:22	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/20/23 18:22	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			03/20/23 18:22	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/20/23 18:22	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/20/23 18:22	1
Silt (0.009H1 to 0.0625mm)	**H0.v4**		0.01	0.01	%			03/20/23 18:22	1
f otal Silt and Cla8 (0 to 0.0626mm)	**100.00**		0.01	0.01	%			03/20/23 18:22	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/20/23 18:22	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			03/20/23 18:22	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

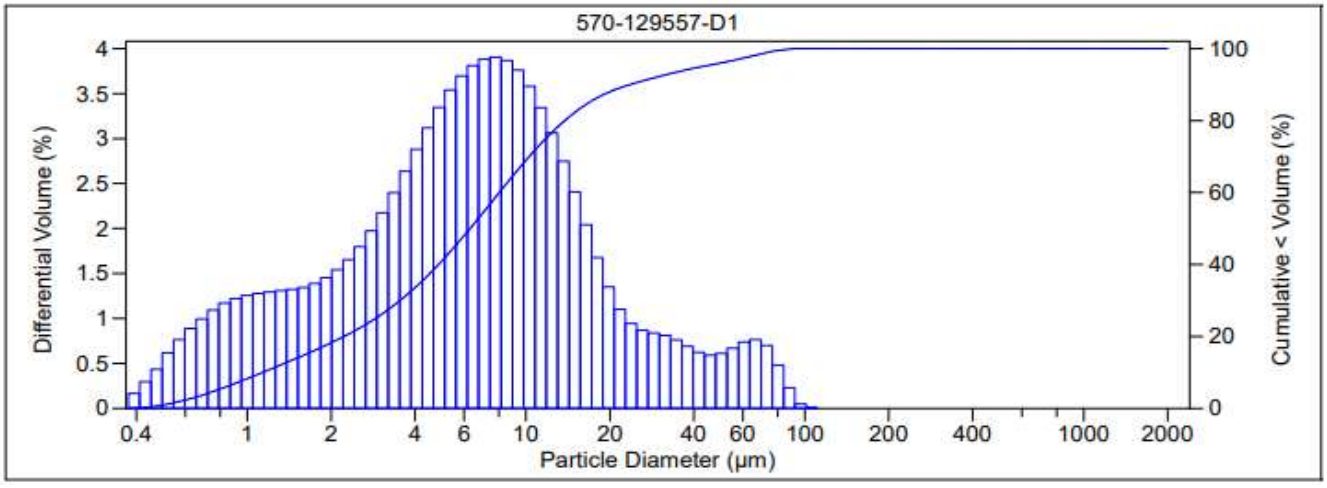
GSI Environmental, Inc.

Date Sampled:	03/01/23
Date Received:	03/02/23
Work Order No:	570-129557
Date Analyzed:	03/16/23
Method:	ASTM D4464M

Project: Sierra Recycling and Demolition

Sample ID	Depth ft	Description	Mean Grain Size mm
Pre-Aboveground Clara		Silt	0.011

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	2.16	67.21	30.62	97.84



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

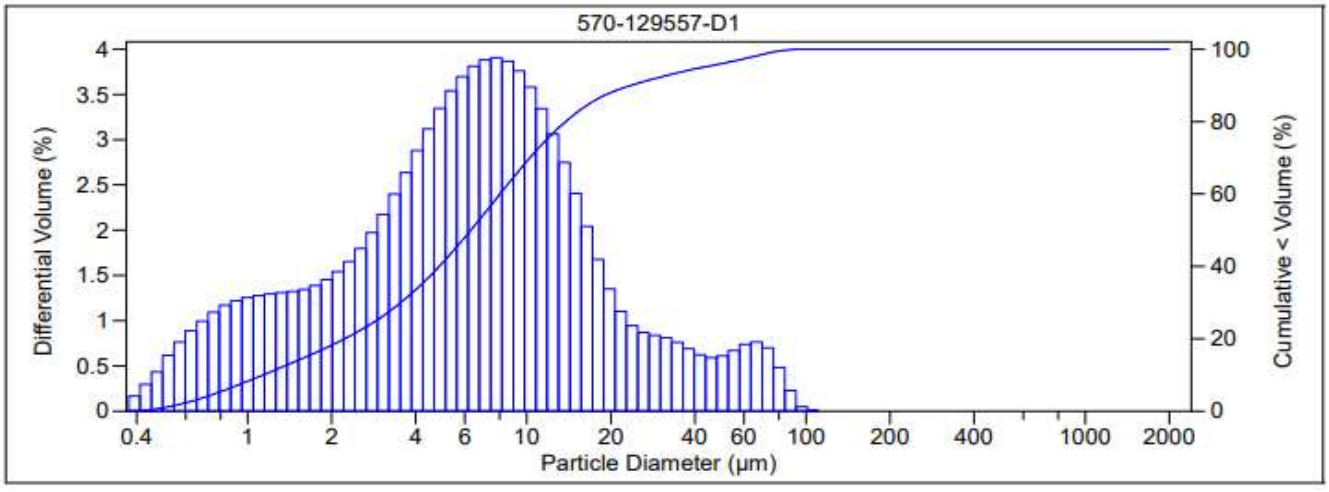
GSI Environmental, Inc.

Date Sampled:	03/01/23
Date Received:	03/02/23
Work Order No:	570-129557
Date Analyzed:	03/16/23
Method:	ASTM D4464M

Project: Sierra Recycling and Demolition

Sample ID	Depth ft	Description	Mean Grain Size mm
Pre-Aboveground Clara		Silt	0.011

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	2.35	64.81	32.84	97.65



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

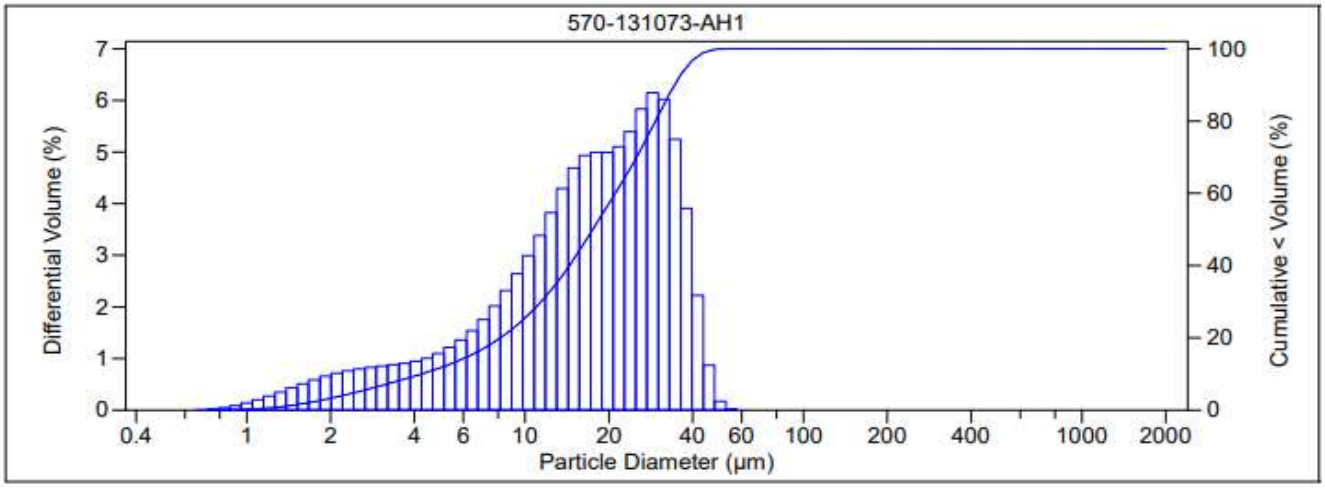
Haley & Aldrich, Inc.

Date Sampled:	03/14/23
Date Received:	03/14/23
Work Order No:	570-131073
Date Analyzed:	03/16/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP - NEW

Sample ID	Depth ft	Description	Mean Grain Size mm
BGMP0003_20230314		Silt	0.019

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	90.84	9.16	100.00



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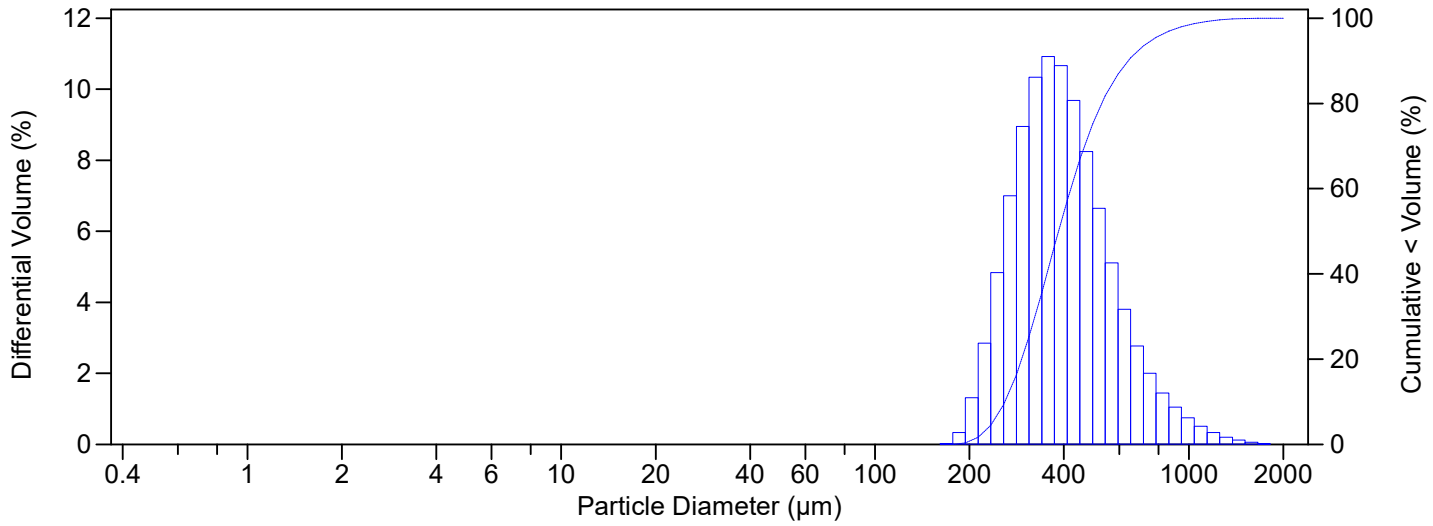
	STD SAND_16 Mar 2023_20.06.05.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	21		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.73%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:04 16 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_16 Mar 2023_20.06.05.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	426.7 µm	S.D.:	176.3 µm
Median:	384.9 µm	Variance:	31078 µm^2
Mean/Median ratio:	1.109	Skewness:	1.955 Right skewed
Mode:	356.1 µm	Kurtosis:	5.896 Leptokurtic

d_{10}: 259.3 µm d_{50}: 384.9 µm d_{90}: 641.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.34	Median:	1.38	Deviation:	0.51
Skewness:	-0.14	Kurtosis:	1.03		

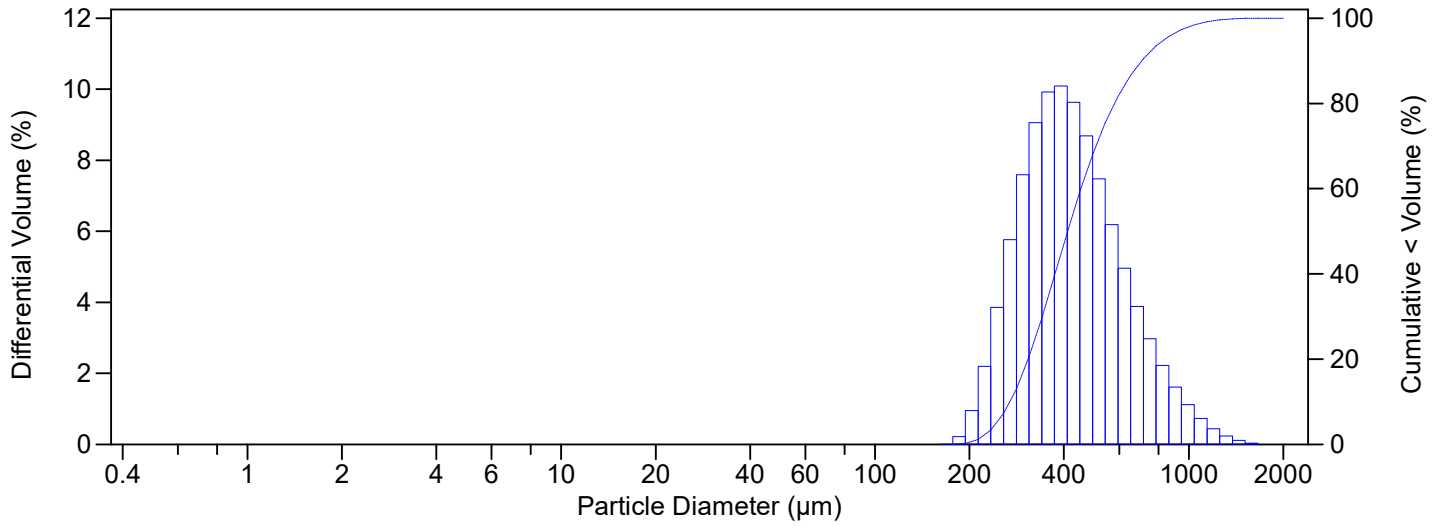
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
236.3 µm	280.8 µm	308.7 µm	353.2 µm	384.9 µm	492.8 µm	564.6 µm	769.3 µm

Particle Diameter µm	STD SAND _16 Mar 2023_20.06 .05.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.89
250	68.2
500	22.4
1000	1.58
2000	

STD SAND_16 Mar 2023_20.06.05.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.33
0.412	0	22.73	0	1255	0.21
0.452	0	24.95	0	1377	0.12
0.496	0	27.39	0	1512	0.058
0.545	0	30.07	0	1660	0.014
0.598	0	33.01	0	1822	0.00072
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.021		
3.206	0	176.9	0.34		
3.519	0	194.2	1.31		
3.863	0	213.2	2.85		
4.241	0	234.1	4.84		
4.656	0	256.9	7.00		
5.111	0	282.1	8.95		
5.611	0	309.6	10.3		
6.159	0	339.9	10.9		
6.761	0	373.1	10.7		
7.422	0	409.6	9.69		
8.148	0	449.7	8.25		
8.944	0	493.6	6.65		
9.819	0	541.9	5.11		
10.78	0	594.9	3.81		
11.83	0	653.0	2.77		
12.99	0	716.9	2.01		
14.26	0	786.9	1.45		
15.65	0	863.9	1.05		
17.18	0	948.3	0.75		
18.86	0	1041	0.51		

File name:	C:\LS13320\STD SAND_16 Mar 2023_20.51.40.$ls		
	STD SAND_16 Mar 2023_20.51.40.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	23		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.61%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:50 16 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_16 Mar 2023_20.51.40.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	457.5 µm	S.D.:	189.6 µm
Median:	411.0 µm	Variance:	35967 µm^2
Mean/Median ratio:	1.113	Skewness:	1.556 Right skewed
Mode:	391.0 µm	Kurtosis:	3.281 Leptokurtic

d_{10}: 268.9 µm d_{50}: 411.0 µm d_{90}: 708.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.25	Median:	1.28	Deviation:	0.54
Skewness:	-0.13	Kurtosis:	1.00		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
243.6 µm	292.9 µm	324.3 µm	374.7 µm	411.0 µm	538.9 µm	622.3 µm	839.6 µm

Particle Diameter µm	STD SAND _16 Mar 2023_20.51 .40.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.08
250	62.9
500	29.0
1000	2.06
2000	

STD SAND_16 Mar 2023_20.51.40.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.44
0.412	0	22.73	0	1255	0.24
0.452	0	24.95	0	1377	0.11
0.496	0	27.39	0	1512	0.032
0.545	0	30.07	0	1660	0.0024
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.013		
3.206	0	176.9	0.22		
3.519	0	194.2	0.95		
3.863	0	213.2	2.20		
4.241	0	234.1	3.86		
4.656	0	256.9	5.76		
5.111	0	282.1	7.59		
5.611	0	309.6	9.05		
6.159	0	339.9	9.92		
6.761	0	373.1	10.1		
7.422	0	409.6	9.63		
8.148	0	449.7	8.69		
8.944	0	493.6	7.48		
9.819	0	541.9	6.19		
10.78	0	594.9	4.97		
11.83	0	653.0	3.88		
12.99	0	716.9	2.97		
14.26	0	786.9	2.22		
15.65	0	863.9	1.62		
17.18	0	948.3	1.12		
18.86	0	1041	0.73		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-131073-1	BGMP0003_20230314	89	94	88	96
570-131073-3	TB_20230314-1	87	98	87	96
LCS 570-311826/1003	Lab Control Sample	95	96	92	100
LCSD 570-311826/4	Lab Control Sample Dup	92	97	96	98
MB 570-311826/6	Method Blank	86	95	88	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		14DCBTN
Lab Sample ID	Client Sample ID	(67-133)
570-131073-1	BGMP0003_20230314	108
LCS 570-311925/4	Lab Control Sample	85
LCSD 570-311925/5	Lab Control Sample Dup	86
MB 570-311925/7	Method Blank	92

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-131073-1	BGMP0003_20230314	80	61	42	69	29	74
LCS 570-311840/2-A	Lab Control Sample	95	75	60	75	42	85
LCSD 570-311840/3-A	Lab Control Sample Dup	99	79	65	78	46	96
MB 570-311840/1-A	Method Blank	50	74	49	81	33	81

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(20-144)
570-131073-1	BGMP0003_20230314	122

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**BFB1 (20-144)**
LCS 570-313446/9	Lab Control Sample	115
LCSD 570-313446/10	Lab Control Sample Dup	115
MB 570-313446/11	Method Blank	115

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**OTCSN1 (53-151)**
570-131073-1	BGMP0003_20230314	104
LCS 570-313523/2-A	Lab Control Sample	97
LCSD 570-313523/3-A	Lab Control Sample Dup	98
MB 570-313523/1-A	Method Blank	102

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-311826/6
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/15/23 15:10	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/15/23 15:10	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/15/23 15:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/15/23 15:10	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/15/23 15:10	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/15/23 15:10	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/15/23 15:10	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/15/23 15:10	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/15/23 15:10	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/15/23 15:10	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/15/23 15:10	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/15/23 15:10	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/15/23 15:10	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/15/23 15:10	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/15/23 15:10	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 15:10	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/15/23 15:10	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/15/23 15:10	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/15/23 15:10	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 15:10	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/15/23 15:10	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/15/23 15:10	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/15/23 15:10	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/15/23 15:10	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/15/23 15:10	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/15/23 15:10	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/15/23 15:10	1
2-Hexanone	ND		5.0	2.2	ug/L			03/15/23 15:10	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/15/23 15:10	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/15/23 15:10	1
Acetone	ND		20	16	ug/L			03/15/23 15:10	1
Acrolein	ND		5.0	4.6	ug/L			03/15/23 15:10	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/15/23 15:10	1
Benzene	ND		0.50	0.28	ug/L			03/15/23 15:10	1
Bromobenzene	ND		0.50	0.23	ug/L			03/15/23 15:10	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/15/23 15:10	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/15/23 15:10	1
Bromoform	ND		1.0	0.25	ug/L			03/15/23 15:10	1
Bromomethane	ND		0.50	0.22	ug/L			03/15/23 15:10	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/15/23 15:10	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/15/23 15:10	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/15/23 15:10	1
Chloroethane	ND		1.0	0.29	ug/L			03/15/23 15:10	1
Chloroform	ND		0.50	0.19	ug/L			03/15/23 15:10	1
Chloromethane	ND		0.50	0.30	ug/L			03/15/23 15:10	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/15/23 15:10	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/15/23 15:10	1
Cyclohexane	ND		2.0	0.79	ug/L			03/15/23 15:10	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-311826/6
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.15	ug/L			03/15/23 15:10	1
Dibromomethane	ND		0.50	0.19	ug/L			03/15/23 15:10	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/15/23 15:10	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/15/23 15:10	1
Ethanol	ND		100	65	ug/L			03/15/23 15:10	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/15/23 15:10	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/15/23 15:10	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/15/23 15:10	1
Isopropanol	ND		250	120	ug/L			03/15/23 15:10	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/15/23 15:10	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/15/23 15:10	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/15/23 15:10	1
Naphthalene	ND		1.0	0.33	ug/L			03/15/23 15:10	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/15/23 15:10	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/15/23 15:10	1
o-Xylene	ND		0.50	0.15	ug/L			03/15/23 15:10	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/15/23 15:10	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/15/23 15:10	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/15/23 15:10	1
Styrene	ND		0.50	0.19	ug/L			03/15/23 15:10	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/15/23 15:10	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/15/23 15:10	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/15/23 15:10	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/15/23 15:10	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/15/23 15:10	1
Toluene	ND		0.50	0.23	ug/L			03/15/23 15:10	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/15/23 15:10	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/15/23 15:10	1
Trichloroethene	ND		0.50	0.17	ug/L			03/15/23 15:10	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/15/23 15:10	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/15/23 15:10	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/15/23 15:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*96 - 146*		*603/ 320 1/ 516*	*1*
4-Bromofluorobenzene (Surr)	*: /*		*96 - 146*		*603/ 320 1/ 516*	*1*
Dibromofluoromethane (Surr)	*88*		*96 - 146*		*603/ 320 1/ 516*	*1*
7oluene-d8 (Surr)	*: T*		*96 - 146*		*603/ 320 1/ 516*	*1*

Lab Sample ID: LCS 570-311826/1003
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	9.99		ug/L		100	60 - 140
1,1,1-Trichloroethane	10.0	9.70		ug/L		97	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.2		ug/L		102	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	11.3		ug/L		113	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-311826/1003
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1-Dichloroethane	10.0	9.86		ug/L		99	70 - 130
1,1-Dichloroethene	10.0	9.66		ug/L		97	50 - 150
1,1-Dichloropropene	10.0	10.2		ug/L		102	60 - 140
1,2,3-Trichlorobenzene	10.0	10.6		ug/L		106	60 - 140
1,2,3-Trichloropropane	10.0	9.57		ug/L		96	60 - 140
1,2,4-Trichlorobenzene	10.0	10.4		ug/L		104	60 - 140
1,2,4-Trimethylbenzene	10.0	9.85		ug/L		99	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	10.3		ug/L		103	60 - 140
1,2-Dibromoethane	10.0	9.97		ug/L		100	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	10.5		ug/L		105	60 - 140
1,2-Dichlorobenzene	10.0	10.7		ug/L		107	65 - 135
1,2-Dichloroethane	10.0	9.63		ug/L		96	70 - 130
1,2-Dichloropropane	10.0	10.0		ug/L		100	35 - 165
1,3,5-Trimethylbenzene	10.0	10.1		ug/L		101	60 - 140
1,3-Dichlorobenzene	10.0	10.6		ug/L		106	70 - 130
1,3-Dichloropropane	10.0	10.3		ug/L		103	60 - 140
1,4-Dichlorobenzene	10.0	10.5		ug/L		105	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	10.6		ug/L		106	60 - 140
2,2-Dichloropropane	10.0	10.4		ug/L		104	60 - 140
2-Butanone (MEK)	10.0	7.15		ug/L		72	60 - 140
2-Chloroethyl vinyl ether	10.0	7.71		ug/L		77	1 - 225
2-Chlorotoluene	10.0	10.0		ug/L		100	60 - 140
2-Hexanone	10.0	9.01		ug/L		90	60 - 140
4-Chlorotoluene	10.0	10.3		ug/L		103	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	10.1		ug/L		101	60 - 140
Acetone	10.0	ND		ug/L		114	60 - 140
Acrolein	20.0	17.8		ug/L		89	60 - 140
Acrylonitrile	10.0	10.3		ug/L		103	60 - 140
Benzene	10.0	10.5		ug/L		105	65 - 135
Bromobenzene	10.0	10.5		ug/L		105	60 - 140
Bromochloromethane	10.0	10.2		ug/L		102	60 - 140
Bromodichloromethane	10.0	9.80		ug/L		98	65 - 135
Bromoform	10.0	10.9		ug/L		109	70 - 130
Bromomethane	10.0	13.8		ug/L		138	15 - 185
Carbon disulfide	10.0	10.2		ug/L		102	60 - 140
Carbon tetrachloride	10.0	9.75		ug/L		98	70 - 130
Chlorobenzene	10.0	10.2		ug/L		102	65 - 135
Chloroethane	10.0	10.1		ug/L		101	40 - 160
Chloroform	10.0	9.42		ug/L		94	70 - 135
Chloromethane	10.0	10.0		ug/L		100	1 - 205
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	60 - 140
cis-1,3-Dichloropropene	10.0	10.3		ug/L		103	25 - 175
Cyclohexane	10.0	10.7		ug/L		107	60 - 140
Dibromochloromethane	10.0	10.1		ug/L		101	70 - 135
Dibromomethane	10.0	9.82		ug/L		98	60 - 140
Dichlorodifluoromethane	10.0	9.94		ug/L		99	60 - 140
Di-isopropyl ether (DIPE)	10.0	9.87		ug/L		99	60 - 140
Ethanol	100	118		ug/L		118	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-311826/1003
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	9.94		ug/L		99	60 - 140
Ethylbenzene	10.0	10.5		ug/L		105	60 - 140
Hexachloro-1,3-butadiene	10.0	10.4		ug/L		104	60 - 140
Isopropanol	50.0	ND		ug/L		113	60 - 140
Isopropylbenzene	10.0	10.7		ug/L		107	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	9.88		ug/L		99	60 - 140
Methylene Chloride	10.0	9.57		ug/L		96	60 - 140
Naphthalene	10.0	10.6		ug/L		106	60 - 140
n-Butylbenzene	10.0	10.6		ug/L		106	60 - 140
N-Propylbenzene	10.0	10.5		ug/L		105	60 - 140
o-Xylene	10.0	10.3		ug/L		103	60 - 140
m,p-Xylene	20.0	20.6		ug/L		103	60 - 140
p-Isopropyltoluene	10.0	10.5		ug/L		105	60 - 140
sec-Butylbenzene	10.0	10.8		ug/L		108	60 - 140
Styrene	10.0	10.3		ug/L		103	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	10.1		ug/L		101	60 - 140
tert-Butyl alcohol (TBA)	50.0	55.3		ug/L		111	60 - 140
tert-Butylbenzene	10.0	10.8		ug/L		108	60 - 140
Tetrachloroethene	10.0	11.1		ug/L		111	70 - 130
Tetrahydrofuran	10.0	10.1		ug/L		101	60 - 140
Toluene	10.0	10.2		ug/L		102	70 - 130
trans-1,2-Dichloroethene	10.0	9.92		ug/L		99	70 - 130
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	50 - 150
Trichloroethene	10.0	9.85		ug/L		98	65 - 135
Trichlorofluoromethane	10.0	9.78		ug/L		98	50 - 150
Vinyl acetate	10.0	9.50		ug/L		95	60 - 140
Vinyl chloride	10.0	10.3		ug/L		103	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*: /*		*96 - 146*
4-Bromofluorobenzene (Surr)	*: 9*		*96 - 146*
Dibromofluoromethane (Surr)	*: 2*		*96 - 146*
7oluene-d8 (Surr)	*166*		*96 - 146*

Lab Sample ID: LCSD 570-311826/4
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.2		ug/L		102	60 - 140	2	30
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	70 - 130	7	36
1,1,2,2-Tetrachloroethane	10.0	10.7		ug/L		107	60 - 140	5	61
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.9		ug/L		119	60 - 140	5	30
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	70 - 130	3	45
1,1-Dichloroethane	10.0	10.5		ug/L		105	70 - 130	6	40
1,1-Dichloroethene	10.0	10.8		ug/L		108	50 - 150	11	32
1,1-Dichloropropene	10.0	11.0		ug/L		110	60 - 140	7	30
1,2,3-Trichlorobenzene	10.0	11.6		ug/L		116	60 - 140	9	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-311826/4
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichloropropane			10.0	10.1		ug/L		101	60 - 140	5	30
1,2,4-Trichlorobenzene			10.0	11.3		ug/L		113	60 - 140	8	30
1,2,4-Trimethylbenzene			10.0	10.6		ug/L		106	60 - 140	7	30
1,2-Dibromo-3-Chloropropane			10.0	10.1		ug/L		101	60 - 140	2	30
1,2-Dibromoethane			10.0	10.5		ug/L		105	60 - 140	5	30
1,2-Dichloro-1,1,2-trifluoroethane			10.0	11.2		ug/L		112	60 - 140	6	30
1,2-Dichlorobenzene			10.0	10.9		ug/L		109	65 - 135	2	57
1,2-Dichloroethane			10.0	9.18		ug/L		92	70 - 130	5	49
1,2-Dichloropropane			10.0	10.2		ug/L		102	35 - 165	2	55
1,3,5-Trimethylbenzene			10.0	10.6		ug/L		106	60 - 140	5	30
1,3-Dichlorobenzene			10.0	11.2		ug/L		112	70 - 130	5	43
1,3-Dichloropropane			10.0	10.6		ug/L		106	60 - 140	3	30
1,4-Dichlorobenzene			10.0	11.2		ug/L		112	65 - 135	7	57
2,2-Dichloro-1,1,1-trifluoroethane			10.0	10.8		ug/L		108	60 - 140	2	30
2,2-Dichloropropane			10.0	11.1		ug/L		111	60 - 140	7	30
2-Butanone (MEK)			10.0	8.22		ug/L		82	60 - 140	14	30
2-Chloroethyl vinyl ether			10.0	7.74		ug/L		77	1 - 225	0	71
2-Chlorotoluene			10.0	10.3		ug/L		103	60 - 140	3	30
2-Hexanone			10.0	9.90		ug/L		99	60 - 140	9	30
4-Chlorotoluene			10.0	10.9		ug/L		109	60 - 140	6	30
4-Methyl-2-pentanone (MIBK)			10.0	10.6		ug/L		106	60 - 140	5	30
Acetone			10.0	ND		ug/L		129	60 - 140	12	30
Acrolein			20.0	17.6		ug/L		88	60 - 140	1	60
Acrylonitrile			10.0	10.5		ug/L		105	60 - 140	2	60
Benzene			10.0	10.7		ug/L		107	65 - 135	1	61
Bromobenzene			10.0	10.9		ug/L		109	60 - 140	4	30
Bromochloromethane			10.0	11.0		ug/L		110	60 - 140	8	30
Bromodichloromethane			10.0	10.0		ug/L		100	65 - 135	2	56
Bromoform			10.0	10.9		ug/L		109	70 - 130	1	42
Bromomethane			10.0	12.8		ug/L		128	15 - 185	7	61
Carbon disulfide			10.0	11.0		ug/L		110	60 - 140	8	30
Carbon tetrachloride			10.0	10.5		ug/L		105	70 - 130	7	41
Chlorobenzene			10.0	10.7		ug/L		107	65 - 135	4	53
Chloroethane			10.0	11.4		ug/L		114	40 - 160	12	78
Chloroform			10.0	10.0		ug/L		100	70 - 135	6	30
Chloromethane			10.0	11.4		ug/L		114	1 - 205	13	60
cis-1,2-Dichloroethene			10.0	10.4		ug/L		104	60 - 140	4	30
cis-1,3-Dichloropropene			10.0	10.3		ug/L		103	25 - 175	0	58
Cyclohexane			10.0	11.6		ug/L		116	60 - 140	8	30
Dibromochloromethane			10.0	10.5		ug/L		105	70 - 135	4	50
Dibromomethane			10.0	9.84		ug/L		98	60 - 140	0	30
Dichlorodifluoromethane			10.0	11.2		ug/L		112	60 - 140	12	30
Di-isopropyl ether (DIPE)			10.0	10.3		ug/L		103	60 - 140	4	30
Ethanol			100	120		ug/L		120	60 - 140	1	30
Ethyl-t-butyl ether (ETBE)			10.0	10.4		ug/L		104	60 - 140	4	30
Ethylbenzene			10.0	10.9		ug/L		109	60 - 140	4	63
Hexachloro-1,3-butadiene			10.0	11.8		ug/L		118	60 - 140	13	30
Isopropanol			50.0	ND		ug/L		112	60 - 140	1	30
Isopropylbenzene			10.0	11.1		ug/L		111	60 - 140	4	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-311826/4
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	10.3		ug/L		103	60 - 140	5	30
Methylene Chloride	10.0	10.2		ug/L		102	60 - 140	6	28
Naphthalene	10.0	11.4		ug/L		114	60 - 140	8	30
n-Butylbenzene	10.0	11.6		ug/L		116	60 - 140	8	30
N-Propylbenzene	10.0	11.4		ug/L		114	60 - 140	8	30
o-Xylene	10.0	10.5		ug/L		105	60 - 140	1	30
m,p-Xylene	20.0	21.8		ug/L		109	60 - 140	6	30
p-Isopropyltoluene	10.0	11.3		ug/L		113	60 - 140	8	30
sec-Butylbenzene	10.0	11.6		ug/L		116	60 - 140	8	30
Styrene	10.0	10.8		ug/L		108	60 - 140	5	30
Tert-amyl-methyl ether (TAME)	10.0	10.1		ug/L		101	60 - 140	0	30
tert-Butyl alcohol (TBA)	50.0	58.8		ug/L		118	60 - 140	6	30
tert-Butylbenzene	10.0	11.3		ug/L		113	60 - 140	5	30
Tetrachloroethene	10.0	11.8		ug/L		118	70 - 130	6	39
Tetrahydrofuran	10.0	10.7		ug/L		107	60 - 140	6	30
Toluene	10.0	10.3		ug/L		103	70 - 130	1	41
trans-1,2-Dichloroethene	10.0	11.1		ug/L		111	70 - 130	11	45
trans-1,3-Dichloropropene	10.0	10.4		ug/L		104	50 - 150	2	86
Trichloroethene	10.0	10.4		ug/L		104	65 - 135	5	48
Trichlorofluoromethane	10.0	10.2		ug/L		102	50 - 150	5	84
Vinyl acetate	10.0	9.84		ug/L		98	60 - 140	4	30
Vinyl chloride	10.0	11.2		ug/L		112	5 - 195	8	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*: 2*		*96 - 146*
4-Bromofluorobenzene (Surr)	*: T*		*96 - 146*
Dibromofluoromethane (Surr)	*: 9*		*96 - 146*
7oluene-d8 (Surr)	*: 8*		*96 - 146*

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-311925/7
Matrix: Water
Analysis Batch: 311925

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/15/23 19:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*: 2*		*9T - 100*		*603/ 320 1: 5 1*	*1*

Lab Sample ID: LCS 570-311925/4
Matrix: Water
Analysis Batch: 311925

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	19.1		ug/L		95	75 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-311925/4
Matrix: Water
Analysis Batch: 311925

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dichlorobutane (Surr)	*8/*		*9T - 100*

Lab Sample ID: LCSD 570-311925/5
Matrix: Water
Analysis Batch: 311925

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	17.7		ug/L		88	75 - 120	7	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Dichlorobutane (Surr)	*89*		*9T - 100*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-311840/1-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311840

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 11:25	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 11:25	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		03/15/23 13:38	03/23/23 11:25	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		03/15/23 13:38	03/23/23 11:25	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		03/15/23 13:38	03/23/23 11:25	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/15/23 13:38	03/23/23 11:25	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		03/15/23 13:38	03/23/23 11:25	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 11:25	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		03/15/23 13:38	03/23/23 11:25	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/15/23 13:38	03/23/23 11:25	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		03/15/23 13:38	03/23/23 11:25	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		03/15/23 13:38	03/23/23 11:25	1
2-Chlorophenol	ND		0.20	0.096	ug/L		03/15/23 13:38	03/23/23 11:25	1
2-Nitrophenol	ND		5.0	3.5	ug/L		03/15/23 13:38	03/23/23 11:25	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		03/15/23 13:38	03/23/23 11:25	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		03/15/23 13:38	03/23/23 11:25	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		03/15/23 13:38	03/23/23 11:25	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		03/15/23 13:38	03/23/23 11:25	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		03/15/23 13:38	03/23/23 11:25	1
4-Nitrophenol	ND		5.0	3.4	ug/L		03/15/23 13:38	03/23/23 11:25	1
Acenaphthene	ND		0.20	0.098	ug/L		03/15/23 13:38	03/23/23 11:25	1
Acenaphthylene	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 11:25	1
Anthracene	ND		0.20	0.084	ug/L		03/15/23 13:38	03/23/23 11:25	1
Benzidine	ND		5.0	2.7	ug/L		03/15/23 13:38	03/23/23 11:25	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		03/15/23 13:38	03/23/23 11:25	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		03/15/23 13:38	03/23/23 11:25	1
Benzo[b]fluoranthene	0.135	J,DX	0.20	0.11	ug/L		03/15/23 13:38	03/23/23 11:25	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 11:25	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 11:25	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-311840/1-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 311840

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 11:25	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 11:25	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		03/15/23 13:38	03/23/23 11:25	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/15/23 13:38	03/23/23 11:25	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		03/15/23 13:38	03/23/23 11:25	1
Chrysene	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 11:25	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		03/15/23 13:38	03/23/23 11:25	1
Diethyl phthalate	ND		2.0	0.18	ug/L		03/15/23 13:38	03/23/23 11:25	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		03/15/23 13:38	03/23/23 11:25	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		03/15/23 13:38	03/23/23 11:25	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		03/15/23 13:38	03/23/23 11:25	1
Fluoranthene	ND		0.20	0.10	ug/L		03/15/23 13:38	03/23/23 11:25	1
Fluorene	ND		0.20	0.095	ug/L		03/15/23 13:38	03/23/23 11:25	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 11:25	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		03/15/23 13:38	03/23/23 11:25	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		03/15/23 13:38	03/23/23 11:25	1
Hexachloroethane	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 11:25	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		03/15/23 13:38	03/23/23 11:25	1
Isophorone	ND		0.20	0.099	ug/L		03/15/23 13:38	03/23/23 11:25	1
Naphthalene	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 11:25	1
Nitrobenzene	ND		0.20	0.14	ug/L		03/15/23 13:38	03/23/23 11:25	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/15/23 13:38	03/23/23 11:25	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		03/15/23 13:38	03/23/23 11:25	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		03/15/23 13:38	03/23/23 11:25	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/15/23 13:38	03/23/23 11:25	1
Phenanthrene	ND		0.20	0.16	ug/L		03/15/23 13:38	03/23/23 11:25	1
Phenol	ND		1.0	0.52	ug/L		03/15/23 13:38	03/23/23 11:25	1
Pyrene	ND		0.20	0.086	ug/L		03/15/23 13:38	03/23/23 11:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,9-7ribromophenol	*/ 6*		*28 - 12T*	*603/ 320 1058*	*603203/20 1152/*	*1*
2-Fluorobiphenyl (Surr)	*T4*		*01 - 126*	*603/ 320 1058*	*603203/20 1152/*	*1*
2-Fluorophenol	*4:*		*1T - 126*	*603/ 320 1058*	*603203/20 1152/*	*1*
Nitrobenzene-d/	*81*		*2T - 126*	*603/ 320 1058*	*603203/20 1152/*	*1*
Phenol-d9 (Surr)	*00*		*16 - 126*	*603/ 320 1058*	*603203/20 1152/*	*1*
p-7erphenyl-d14 (Surr)	*81*		*4/ - 126*	*603/ 320 1058*	*603203/20 1152/*	*1*

Lab Sample ID: LCS 570-311840/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 311840

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	13.1		ug/L		65	57 - 130
1,2-Dichlorobenzene	20.0	15.4		ug/L		77	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	16.4		ug/L		82	60 - 115
1,3-Dichlorobenzene	20.0	14.8		ug/L		74	37 - 120
1,4-Dichlorobenzene	20.0	15.1		ug/L		75	39 - 120
2,4,6-Trichlorophenol	20.0	19.2		ug/L		96	52 - 129

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-311840/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 311840

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dichlorophenol	20.0	17.0		ug/L		85	53 - 122
2,4-Dimethylphenol	20.0	16.1		ug/L		80	42 - 120
2,4-Dinitrophenol	20.0	22.1		ug/L		111	1 - 173
2,4-Dinitrotoluene	20.0	21.1		ug/L		106	48 - 127
2,6-Dinitrotoluene	20.0	20.8		ug/L		104	68 - 137
2-Chloronaphthalene	20.0	15.3		ug/L		76	65 - 120
2-Chlorophenol	20.0	17.6		ug/L		88	36 - 120
2-Nitrophenol	20.0	18.5		ug/L		93	45 - 167
3,3'-Dichlorobenzidine	20.0	17.0		ug/L		85	8 - 213
4,6-Dinitro-2-methylphenol	20.0	21.3		ug/L		107	53 - 130
4-Bromophenyl phenyl ether	20.0	14.7		ug/L		74	65 - 120
4-Chloro-3-methylphenol	20.0	18.5		ug/L		93	41 - 128
4-Chlorophenyl phenyl ether	20.0	15.2		ug/L		76	38 - 145
4-Nitrophenol	20.0	13.0		ug/L		65	13 - 129
Acenaphthene	20.0	15.3		ug/L		77	60 - 132
Acenaphthylene	20.0	18.6		ug/L		93	54 - 126
Anthracene	20.0	16.8		ug/L		84	43 - 120
Benzidine	20.0	ND	LR	ug/L		12	20 - 164
Benzo[a]anthracene	20.0	18.2		ug/L		91	42 - 133
Benzo[a]pyrene	20.0	18.1		ug/L		91	32 - 148
Benzo[b]fluoranthene	20.0	17.3		ug/L		86	42 - 140
Benzo[g,h,i]perylene	20.0	18.0		ug/L		90	1 - 195
Benzo[k]fluoranthene	20.0	18.1		ug/L		91	25 - 146
bis (2-chloroisopropyl) ether	20.0	15.7		ug/L		78	63 - 139
Bis(2-chloroethoxy)methane	20.0	13.5		ug/L		68	49 - 165
Bis(2-chloroethyl)ether	20.0	15.4		ug/L		77	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	25.4		ug/L		127	29 - 137
Butyl benzyl phthalate	20.0	22.4		ug/L		112	1 - 140
Chrysene	20.0	17.0		ug/L		85	44 - 140
Dibenz(a,h)anthracene	20.0	17.2		ug/L		86	1 - 200
Diethyl phthalate	20.0	19.5		ug/L		97	1 - 120
Dimethyl phthalate	20.0	19.1		ug/L		96	1 - 120
Di-n-butyl phthalate	20.0	20.0		ug/L		100	8 - 120
Di-n-octyl phthalate	20.0	25.1		ug/L		126	19 - 132
Fluoranthene	20.0	16.7		ug/L		83	43 - 121
Fluorene	20.0	16.2		ug/L		81	70 - 120
Hexachlorobenzene	20.0	14.4		ug/L		72	8 - 142
Hexachlorobutadiene	20.0	13.2		ug/L		66	38 - 120
Hexachlorocyclopentadiene	20.0	19.3		ug/L		96	43 - 145
Hexachloroethane	20.0	15.5		ug/L		77	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	16.9		ug/L		84	1 - 151
Isophorone	20.0	16.2		ug/L		81	47 - 180
Naphthalene	20.0	12.7		ug/L		64	36 - 120
Nitrobenzene	20.0	15.2		ug/L		76	54 - 158
N-Nitrosodimethylamine	20.0	9.67		ug/L		48	20 - 120
N-Nitrosodi-n-propylamine	20.0	16.2		ug/L		81	14 - 198
N-Nitrosodiphenylamine	20.0	17.3		ug/L		87	65 - 133
Pentachlorophenol	20.0	17.0		ug/L		85	38 - 152
Phenanthrene	20.0	15.1		ug/L		75	65 - 120

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-311840/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 311840

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Phenol			20.0	8.73		ug/L		44	17 - 120		
Pyrene			20.0	16.8		ug/L		84	70 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,9-7ribromophenol	*: /*		*28 - 12T*
2-Fluorobiphenyl (Surr)	*T/*		*01 - 126*
2-Fluorophenol	*96*		*1T - 126*
Nitrobenzene-d/	*T/*		*2T - 126*
Phenol-d9 (Surr)	*42*		*16 - 126*
p-7erphenyl-d14 (Surr)	*8/*		*4/ - 126*

Lab Sample ID: LCSD 570-311840/3-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 311840

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene			20.0	13.9		ug/L		70	57 - 130	6	30
1,2-Dichlorobenzene			20.0	17.1		ug/L		85	40 - 120	10	20
1,2-Diphenylhydrazine(as Azobenzene)			20.0	17.9		ug/L		89	60 - 115	9	30
1,3-Dichlorobenzene			20.0	16.6		ug/L		83	37 - 120	12	20
1,4-Dichlorobenzene			20.0	17.1		ug/L		86	39 - 120	13	20
2,4,6-Trichlorophenol			20.0	19.3		ug/L		97	52 - 129	0	35
2,4-Dichlorophenol			20.0	18.0		ug/L		90	53 - 122	6	30
2,4-Dimethylphenol			20.0	17.0		ug/L		85	42 - 120	6	35
2,4-Dinitrophenol			20.0	17.7		ug/L		88	1 - 173	22	79
2,4-Dinitrotoluene			20.0	21.4		ug/L		107	48 - 127	1	25
2,6-Dinitrotoluene			20.0	21.8		ug/L		109	68 - 137	4	29
2-Chloronaphthalene			20.0	15.8		ug/L		79	65 - 120	3	15
2-Chlorophenol			20.0	19.6		ug/L		98	36 - 120	10	37
2-Nitrophenol			20.0	19.5		ug/L		98	45 - 167	5	33
3,3'-Dichlorobenzidine			20.0	19.5		ug/L		97	8 - 213	14	65
4,6-Dinitro-2-methylphenol			20.0	21.0		ug/L		105	53 - 130	1	122
4-Bromophenyl phenyl ether			20.0	16.2		ug/L		81	65 - 120	9	26
4-Chloro-3-methylphenol			20.0	18.8		ug/L		94	41 - 128	2	44
4-Chlorophenyl phenyl ether			20.0	16.2		ug/L		81	38 - 145	6	36
4-Nitrophenol			20.0	11.3		ug/L		56	13 - 129	14	79
Acenaphthene			20.0	16.6		ug/L		83	60 - 132	8	29
Acenaphthylene			20.0	19.9		ug/L		99	54 - 126	7	45
Anthracene			20.0	18.5		ug/L		93	43 - 120	10	40
Benzidine			20.0	6.20	BA	ug/L		31	20 - 164	88	30
Benzo[a]anthracene			20.0	20.0		ug/L		100	42 - 133	10	32
Benzo[a]pyrene			20.0	20.7		ug/L		103	32 - 148	13	43
Benzo[b]fluoranthene			20.0	19.6		ug/L		98	42 - 140	13	43
Benzo[g,h,i]perylene			20.0	19.7		ug/L		98	1 - 195	9	61
Benzo[k]fluoranthene			20.0	21.0		ug/L		105	25 - 146	15	38
bis (2-chloroisopropyl) ether			20.0	17.8		ug/L		89	63 - 139	13	46
Bis(2-chloroethoxy)methane			20.0	14.1		ug/L		70	49 - 165	4	32
Bis(2-chloroethyl)ether			20.0	17.3		ug/L		86	43 - 126	12	65

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-311840/3-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 311840

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate	20.0	26.0		ug/L		130	29 - 137	3	50
Butyl benzyl phthalate	20.0	24.1		ug/L		121	1 - 140	8	36
Chrysene	20.0	18.7		ug/L		94	44 - 140	10	53
Dibenz(a,h)anthracene	20.0	18.8		ug/L		94	1 - 200	9	75
Diethyl phthalate	20.0	20.1		ug/L		101	1 - 120	3	60
Dimethyl phthalate	20.0	20.1		ug/L		101	1 - 120	5	110
Di-n-butyl phthalate	20.0	21.4		ug/L		107	8 - 120	7	28
Di-n-octyl phthalate	20.0	27.6	LQ	ug/L		138	19 - 132	9	42
Fluoranthene	20.0	19.3		ug/L		96	43 - 121	15	40
Fluorene	20.0	17.2		ug/L		86	70 - 120	6	23
Hexachlorobenzene	20.0	15.8		ug/L		79	8 - 142	9	33
Hexachlorobutadiene	20.0	14.0		ug/L		70	38 - 120	6	38
Hexachlorocyclopentadiene	20.0	20.1		ug/L		101	43 - 145	4	22
Hexachloroethane	20.0	17.4		ug/L		87	55 - 120	11	32
Indeno[1,2,3-cd]pyrene	20.0	18.3		ug/L		92	1 - 151	8	60
Isophorone	20.0	17.3		ug/L		87	47 - 180	7	56
Naphthalene	20.0	13.7		ug/L		68	36 - 120	7	39
Nitrobenzene	20.0	16.3		ug/L		81	54 - 158	7	37
N-Nitrosodimethylamine	20.0	10.8		ug/L		54	20 - 120	11	21
N-Nitrosodi-n-propylamine	20.0	18.2		ug/L		91	14 - 198	12	52
N-Nitrosodiphenylamine	20.0	18.5		ug/L		93	65 - 133	7	20
Pentachlorophenol	20.0	15.6		ug/L		78	38 - 152	9	52
Phenanthrene	20.0	16.7		ug/L		83	65 - 120	10	24
Phenol	20.0	9.53		ug/L		48	17 - 120	9	39
Pyrene	20.0	18.7		ug/L		93	70 - 120	10	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,9-7ribromophenol	*: :*		*28 - 12T*
2-Fluorobiphenyl (Surr)	*T:*		*01 - 126*
2-Fluorophenol	*9/*		*1T - 126*
Nitrobenzene-d/	*T8*		*2T - 126*
Phenol-d9 (Surr)	*49*		*16 - 126*
p-7erphenyl-d14 (Surr)	*: 9*		*4/ - 126*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-313446/11
Matrix: Water
Analysis Batch: 313446

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/21/23 14:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*11/*		*26 - 144*		*603213 20 145 49*	*1*

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCS 570-313446/9
Matrix: Water
Analysis Batch: 313446

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	2210		ug/L		115	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*11/*		*26 - 144*

Lab Sample ID: LCSD 570-313446/10
Matrix: Water
Analysis Batch: 313446

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	2230		ug/L		116	71 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*11/*		*26 - 144*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-313523/1-A
Matrix: Water
Analysis Batch: 314947

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313523

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/21/23 17:31	03/27/23 12:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*162*		*/ 0 - 1/ 1*	*603213201T501*	*603T320 1252:*	*1*

Lab Sample ID: LCS 570-313523/2-A
Matrix: Water
Analysis Batch: 314947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313523

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			4.00	3.83		mg/L		96	65 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*: T*		*/ 0 - 1/ 1*

Lab Sample ID: LCSD 570-313523/3-A
Matrix: Water
Analysis Batch: 314947

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313523

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			4.00	3.90		mg/L		97	65 - 129	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*: 8*		*/ 0 - 1/ 1*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-311633/3
Matrix: Water
Analysis Batch: 311633

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/15/23 02:06	1

Lab Sample ID: LCS 570-311633/4
Matrix: Water
Analysis Batch: 311633

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	50.2		ug/L		100	95 - 107

Lab Sample ID: LCSD 570-311633/5
Matrix: Water
Analysis Batch: 311633

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	49.9		ug/L		100	95 - 107	0	20

Lab Sample ID: MB 570-311634/1-A
Matrix: Water
Analysis Batch: 311633

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/15/23 05:12	1

Lab Sample ID: LCS 570-311634/2-A
Matrix: Water
Analysis Batch: 311633

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	50.5		ug/L		101	95 - 107

Lab Sample ID: 570-131073-1 MS
Matrix: Water
Analysis Batch: 311633

Client Sample ID: BGMP0003_20230314
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	ND		50.1	49.7		ug/L		99	85 - 121

Lab Sample ID: 570-131073-1 MSD
Matrix: Water
Analysis Batch: 311633

Client Sample ID: BGMP0003_20230314
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	ND		50.1	49.0		ug/L		98	85 - 121	1	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-311636/5
Matrix: Water
Analysis Batch: 311636

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/15/23 04:09	1
Nitrate as N	ND		0.10	0.020	mg/L			03/15/23 04:09	1

Lab Sample ID: LCS 570-311636/6
Matrix: Water
Analysis Batch: 311636

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.59		mg/L		104	90 - 110
Nitrate as N	5.00	4.98		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-311636/7
Matrix: Water
Analysis Batch: 311636

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.49		mg/L		100	90 - 110	4	15
Nitrate as N	5.00	5.02		mg/L		100	90 - 110	1	15

Lab Sample ID: MB 570-311637/5
Matrix: Water
Analysis Batch: 311637

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/15/23 04:09	1
Fluoride	ND		0.10	0.046	mg/L			03/15/23 04:09	1
Sulfate	ND		1.0	0.24	mg/L			03/15/23 04:09	1

Lab Sample ID: LCS 570-311637/6
Matrix: Water
Analysis Batch: 311637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	47.8		mg/L		96	90 - 110
Fluoride	2.50	2.61		mg/L		105	90 - 110
Sulfate	50.0	48.9		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-311637/7
Matrix: Water
Analysis Batch: 311637

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	47.3		mg/L		95	90 - 110	1	15
Fluoride	2.50	2.65		mg/L		106	90 - 110	2	15
Sulfate	50.0	48.4		mg/L		97	90 - 110	1	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-311891/7
Matrix: Water
Analysis Batch: 311891

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/15/23 18:00	1

Lab Sample ID: LCS 570-311891/8
Matrix: Water
Analysis Batch: 311891

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	25.1		ug/L		100	85 - 115		

Lab Sample ID: LCSD 570-311891/9
Matrix: Water
Analysis Batch: 311891

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.8		ug/L		99	85 - 115	1	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-312079/1-A
Matrix: Water
Analysis Batch: 312340

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 312079

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		03/16/23 08:23	03/16/23 22:51	1

Lab Sample ID: LCS 570-312079/2-A
Matrix: Water
Analysis Batch: 312340

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 312079

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	485	J,DX	ug/L		97	85 - 115		

Lab Sample ID: LCSD 570-312079/3-A
Matrix: Water
Analysis Batch: 312340

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 312079

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	481	J,DX	ug/L		96	85 - 115	1	20

Lab Sample ID: MB 570-312534/1-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			03/17/23 19:29	1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 570-312534/2-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	446	J,DX	ug/L		89	85 - 115		

Lab Sample ID: LCSD 570-312534/3-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	428	J,DX	ug/L		86	85 - 115	4	20

Lab Sample ID: 570-131073-1 MS
Matrix: Water
Analysis Batch: 312749

Client Sample ID: BGMP0003_20230314
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	45	J,DX BU	500	481	J,DX	ug/L		87	80 - 120		

Lab Sample ID: 570-131073-1 MSD
Matrix: Water
Analysis Batch: 312749

Client Sample ID: BGMP0003_20230314
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	45	J,DX BU	500	482	J,DX	ug/L		87	80 - 120	0	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-312065/1-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 312065

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		03/16/23 07:46	03/16/23 10:55	1
Silver	ND		1.0	0.23	ug/L		03/16/23 07:46	03/16/23 10:55	1
Arsenic	ND		1.0	0.16	ug/L		03/16/23 07:46	03/16/23 10:55	1
Barium	ND		1.0	0.17	ug/L		03/16/23 07:46	03/16/23 10:55	1
Beryllium	ND		0.50	0.26	ug/L		03/16/23 07:46	03/16/23 10:55	1
Cadmium	ND		1.0	0.13	ug/L		03/16/23 07:46	03/16/23 10:55	1
Chromium	ND		2.0	0.14	ug/L		03/16/23 07:46	03/16/23 10:55	1
Cobalt	ND		1.0	0.14	ug/L		03/16/23 07:46	03/16/23 10:55	1
Copper	ND		2.0	0.32	ug/L		03/16/23 07:46	03/16/23 10:55	1
Iron	ND		20	3.7	ug/L		03/16/23 07:46	03/16/23 10:55	1
Manganese	ND		1.0	0.41	ug/L		03/16/23 07:46	03/16/23 10:55	1
Nickel	ND		2.0	0.17	ug/L		03/16/23 07:46	03/16/23 10:55	1
Lead	ND		1.0	0.12	ug/L		03/16/23 07:46	03/16/23 10:55	1
Antimony	ND		2.0	0.36	ug/L		03/16/23 07:46	03/16/23 10:55	1
Zinc	ND		20	2.8	ug/L		03/16/23 07:46	03/16/23 10:55	1
Selenium	ND		2.0	0.52	ug/L		03/16/23 07:46	03/16/23 10:55	1
Thallium	ND		1.0	0.11	ug/L		03/16/23 07:46	03/16/23 10:55	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-312065/2-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 312065

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	79.6		ug/L		99	85 - 115
Silver	80.0	78.3		ug/L		98	85 - 115
Arsenic	80.0	78.5		ug/L		98	85 - 115
Barium	80.0	78.7		ug/L		98	85 - 115
Beryllium	80.0	79.4		ug/L		99	85 - 115
Cadmium	80.0	78.5		ug/L		98	85 - 115
Chromium	80.0	78.2		ug/L		98	85 - 115
Cobalt	80.0	77.2		ug/L		97	85 - 115
Copper	80.0	78.0		ug/L		98	85 - 115
Iron	800	804		ug/L		101	85 - 115
Manganese	80.0	78.4		ug/L		98	85 - 115
Nickel	80.0	77.8		ug/L		97	85 - 115
Lead	80.0	79.0		ug/L		99	85 - 115
Antimony	80.0	77.9		ug/L		97	85 - 115
Zinc	80.0	76.9		ug/L		96	85 - 115
Selenium	80.0	75.1		ug/L		94	85 - 115
Thallium	80.0	76.7		ug/L		96	85 - 115

Lab Sample ID: LCSD 570-312065/3-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 312065

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	81.4		ug/L		102	85 - 115	2	20
Silver	80.0	80.7		ug/L		101	85 - 115	3	20
Arsenic	80.0	80.3		ug/L		100	85 - 115	2	20
Barium	80.0	80.2		ug/L		100	85 - 115	2	20
Beryllium	80.0	80.8		ug/L		101	85 - 115	2	20
Cadmium	80.0	80.6		ug/L		101	85 - 115	3	20
Chromium	80.0	81.1		ug/L		101	85 - 115	4	20
Cobalt	80.0	79.9		ug/L		100	85 - 115	3	20
Copper	80.0	80.3		ug/L		100	85 - 115	3	20
Iron	800	822		ug/L		103	85 - 115	2	20
Manganese	80.0	81.0		ug/L		101	85 - 115	3	20
Nickel	80.0	80.8		ug/L		101	85 - 115	4	20
Lead	80.0	81.1		ug/L		101	85 - 115	3	20
Antimony	80.0	80.9		ug/L		101	85 - 115	4	20
Zinc	80.0	78.2		ug/L		98	85 - 115	2	20
Selenium	80.0	77.1		ug/L		96	85 - 115	3	20
Thallium	80.0	78.3		ug/L		98	85 - 115	2	20

Lab Sample ID: MB 570-312120/1-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			03/16/23 11:52	1
Silver	ND		1.0	0.23	ug/L			03/16/23 11:52	1
Arsenic	ND		1.0	0.16	ug/L			03/16/23 11:52	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-312120/1-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		1.0	0.17	ug/L			03/16/23 11:52	1
Beryllium	ND		0.50	0.26	ug/L			03/16/23 11:52	1
Cadmium	ND		1.0	0.13	ug/L			03/16/23 11:52	1
Chromium	ND		2.0	0.14	ug/L			03/16/23 11:52	1
Cobalt	ND		1.0	0.14	ug/L			03/16/23 11:52	1
Copper	ND		2.0	0.32	ug/L			03/16/23 11:52	1
Iron	ND		20	3.7	ug/L			03/16/23 11:52	1
Manganese	ND		1.0	0.41	ug/L			03/16/23 11:52	1
Nickel	ND		2.0	0.17	ug/L			03/16/23 11:52	1
Lead	ND		1.0	0.12	ug/L			03/16/23 11:52	1
Antimony	ND		2.0	0.36	ug/L			03/16/23 11:52	1
Zinc	ND		20	2.8	ug/L			03/16/23 11:52	1
Selenium	ND		2.0	0.52	ug/L			03/16/23 11:52	1
Thallium	ND		1.0	0.11	ug/L			03/16/23 11:52	1

Lab Sample ID: LCS 570-312120/2-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum			80.0	77.6		ug/L		97	85 - 115		
Silver			80.0	77.7		ug/L		97	85 - 115		
Arsenic			80.0	77.3		ug/L		97	85 - 115		
Barium			80.0	78.3		ug/L		98	85 - 115		
Beryllium			80.0	78.9		ug/L		99	85 - 115		
Cadmium			80.0	77.6		ug/L		97	85 - 115		
Chromium			80.0	78.2		ug/L		98	85 - 115		
Cobalt			80.0	77.3		ug/L		97	85 - 115		
Copper			80.0	77.9		ug/L		97	85 - 115		
Iron			800	797		ug/L		100	85 - 115		
Manganese			80.0	79.1		ug/L		99	85 - 115		
Nickel			80.0	77.8		ug/L		97	85 - 115		
Lead			80.0	80.3		ug/L		100	85 - 115		
Antimony			80.0	77.4		ug/L		97	85 - 115		
Zinc			80.0	75.1		ug/L		94	85 - 115		
Selenium			80.0	75.4		ug/L		94	85 - 115		
Thallium			80.0	77.2		ug/L		96	85 - 115		

Lab Sample ID: LCSD 570-312120/3-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum			80.0	80.2		ug/L		100	85 - 115	3	20
Silver			80.0	79.8		ug/L		100	85 - 115	3	20
Arsenic			80.0	79.6		ug/L		100	85 - 115	3	20
Barium			80.0	79.5		ug/L		99	85 - 115	2	20
Beryllium			80.0	82.0		ug/L		102	85 - 115	4	20
Cadmium			80.0	79.6		ug/L		99	85 - 115	3	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-312120/3-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium			80.0	79.6		ug/L		99	85 - 115	2	20
Cobalt			80.0	78.6		ug/L		98	85 - 115	2	20
Copper			80.0	79.2		ug/L		99	85 - 115	2	20
Iron			800	802		ug/L		100	85 - 115	1	20
Manganese			80.0	80.3		ug/L		100	85 - 115	2	20
Nickel			80.0	79.1		ug/L		99	85 - 115	2	20
Lead			80.0	82.0		ug/L		102	85 - 115	2	20
Antimony			80.0	79.8		ug/L		100	85 - 115	3	20
Zinc			80.0	76.9		ug/L		96	85 - 115	2	20
Selenium			80.0	79.0		ug/L		99	85 - 115	5	20
Thallium			80.0	79.5		ug/L		99	85 - 115	3	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-312148/1-A
Matrix: Water
Analysis Batch: 312265

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312148

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/16/23 10:47	03/16/23 16:09	1

Lab Sample ID: LCS 570-312148/2-A
Matrix: Water
Analysis Batch: 312265

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312148

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HEM (Oil & Grease)			40.0	37.1		mg/L		93	78 - 114		

Lab Sample ID: LCSD 570-312148/3-A
Matrix: Water
Analysis Batch: 312265

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 312148

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	37.6		mg/L		94	78 - 114	1	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-314231/5-A
Matrix: Water
Analysis Batch: 314249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314231

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/23/23 12:55	03/23/23 14:28	1

Lab Sample ID: LCS 570-314231/6-A
Matrix: Water
Analysis Batch: 314249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314231

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.477		mg/L		95	90 - 110		

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCSD 570-314231/7-A
Matrix: Water
Analysis Batch: 314249

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314231

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.476		mg/L		95	90 - 110	0	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309190/11
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/27/23 12:56	1

Lab Sample ID: LCS 570-309190/12
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			250	259		ug/L		104	90 - 110		

Lab Sample ID: LCSD 570-309190/13
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	271		ug/L		109	90 - 110	5	20

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-312018/1
Matrix: Water
Analysis Batch: 312018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			1000	1000		NTU		100.6	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-312018/2
Matrix: Water
Analysis Batch: 312018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			10.0	10		NTU		99.6	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-312018/3
Matrix: Water
Analysis Batch: 312018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			0.0200	ND		NTU		100.0	0.0 - 200.0		

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-313148/11
Matrix: Water
Analysis Batch: 313148

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/20/23 15:25	1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-312701/1
Matrix: Water
Analysis Batch: 312701

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/17/23 18:04	1

Lab Sample ID: LCS 570-312701/2
Matrix: Water
Analysis Batch: 312701

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	994		mg/L		99	84 - 108

Lab Sample ID: LCSD 570-312701/3
Matrix: Water
Analysis Batch: 312701

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1010		mg/L		101	84 - 108	2	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-313066/1
Matrix: Water
Analysis Batch: 313066

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/20/23 13:31	1

Lab Sample ID: LCS 570-313066/2
Matrix: Water
Analysis Batch: 313066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.0		mg/L		97	77 - 116

Lab Sample ID: LCSD 570-313066/3
Matrix: Water
Analysis Batch: 313066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	97.0		mg/L		97	77 - 116	0	10

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: 570-131073-1 DU
Matrix: Water
Analysis Batch: 313066

Client Sample ID: BGMP0003_20230314
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	34		35.0		mg/L		4	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCS 570-311759/2-A
Matrix: Water
Analysis Batch: 313443

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 311759

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	209		mg/L		105	84.6 - 115.4

Lab Sample ID: USB 570-313443/2
Matrix: Water
Analysis Batch: 313443

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			03/15/23 11:04	1

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-315470/33
Matrix: Water
Analysis Batch: 315470

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			03/28/23 04:35	1

Lab Sample ID: LCS 570-315470/34
Matrix: Water
Analysis Batch: 315470

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon, Total Organic	5.03	4.68		mg/L		93	85 - 115

Lab Sample ID: LCSD 570-315470/35
Matrix: Water
Analysis Batch: 315470

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic	5.03	4.73		mg/L		94	85 - 115	1	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-312166/5-A
Matrix: Water
Analysis Batch: 312164

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312166

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/15/23 15:30	03/15/23 17:33	1

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: LCS 570-312166/6-A
Matrix: Water
Analysis Batch: 312164

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312166

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.439		mg/L		88	83 - 122		

Lab Sample ID: LCSD 570-312166/7-A
Matrix: Water
Analysis Batch: 312164

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 312166

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.456		mg/L		91	83 - 122	4	10

GC/MS VOA

Analysis Batch: 311826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	624.1	
570-131073-3	TB_20230314-1	Total/NA	Water	624.1	
MB 570-311826/6	Method Blank	Total/NA	Water	624.1	
LCS 570-311826/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-311826/4	Lab Control Sample Dup	Total/NA	Water	624.1	

Analysis Batch: 311925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	8260B SIM	
MB 570-311925/7	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-311925/4	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-311925/5	Lab Control Sample Dup	Total/NA	Water	8260B SIM	

GC/MS Semi VOA

Prep Batch: 311840

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	625	
MB 570-311840/1-A	Method Blank	Total/NA	Water	625	
LCS 570-311840/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-311840/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 314108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	625.1 SIM	311840
MB 570-311840/1-A	Method Blank	Total/NA	Water	625.1 SIM	311840
LCS 570-311840/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	311840
LCSD 570-311840/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	311840

GC VOA

Analysis Batch: 313446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	8015B	
MB 570-313446/11	Method Blank	Total/NA	Water	8015B	
LCS 570-313446/9	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-313446/10	Lab Control Sample Dup	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 313523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	3510C	
MB 570-313523/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-313523/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-313523/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 314947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-313523/1-A	Method Blank	Total/NA	Water	8015B	313523
LCS 570-313523/2-A	Lab Control Sample	Total/NA	Water	8015B	313523
LCSD 570-313523/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	313523

GC Semi VOA

Analysis Batch: 315118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	8015B	313523

HPLC/IC

Analysis Batch: 311633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	218.6	311634
570-131073-1	BGMP0003_20230314	Total/NA	Water	218.6	
MB 570-311633/3	Method Blank	Total/NA	Water	218.6	
MB 570-311634/1-A	Method Blank	Dissolved	Water	218.6	311634
LCS 570-311633/4	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-311634/2-A	Lab Control Sample	Dissolved	Water	218.6	311634
LCSD 570-311633/5	Lab Control Sample Dup	Total/NA	Water	218.6	
570-131073-1 MS	BGMP0003_20230314	Dissolved	Water	218.6	311634
570-131073-1 MSD	BGMP0003_20230314	Dissolved	Water	218.6	311634

Filtration Batch: 311634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	Filtration	
MB 570-311634/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-311634/2-A	Lab Control Sample	Dissolved	Water	Filtration	
570-131073-1 MS	BGMP0003_20230314	Dissolved	Water	Filtration	
570-131073-1 MSD	BGMP0003_20230314	Dissolved	Water	Filtration	

Analysis Batch: 311636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	300.0	
MB 570-311636/5	Method Blank	Total/NA	Water	300.0	
LCS 570-311636/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-311636/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 311637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	300.0	
MB 570-311637/5	Method Blank	Total/NA	Water	300.0	
LCS 570-311637/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-311637/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 311891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	314.0	
MB 570-311891/7	Method Blank	Total/NA	Water	314.0	
LCS 570-311891/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-311891/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 313055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	NO2NO3 Calc	

Metals

Analysis Batch: 311940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total Recoverable	Water	SM 2340B	

Prep Batch: 312065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total Recoverable	Water	200.8	
MB 570-312065/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-312065/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-312065/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Prep Batch: 312079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total Recoverable	Water	200.7	
MB 570-312079/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-312079/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-312079/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	

Filtration Batch: 312120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	Filtration	
MB 570-312120/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-312120/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312120/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 312206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	200.8	312120
570-131073-1	BGMP0003_20230314	Total Recoverable	Water	200.8	312065
MB 570-312065/1-A	Method Blank	Total Recoverable	Water	200.8	312065
MB 570-312120/1-A	Method Blank	Dissolved	Water	200.8	312120
LCS 570-312065/2-A	Lab Control Sample	Total Recoverable	Water	200.8	312065
LCS 570-312120/2-A	Lab Control Sample	Dissolved	Water	200.8	312120
LCSD 570-312065/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	312065
LCSD 570-312120/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	312120

Analysis Batch: 312313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	SM 2340B	

Analysis Batch: 312340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total Recoverable	Water	200.7 Rev 4.4	312079
MB 570-312079/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	312079
LCS 570-312079/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	312079
LCSD 570-312079/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	312079

Filtration Batch: 312534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	Filtration	
MB 570-312534/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-312534/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312534/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Metals (Continued)

Filtration Batch: 312534 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1 MS	BGMP0003_20230314	Dissolved	Water	Filtration	
570-131073-1 MSD	BGMP0003_20230314	Dissolved	Water	Filtration	

Analysis Batch: 312749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	200.7 Rev 4.4	312534
MB 570-312534/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	312534
LCS 570-312534/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	312534
LCSD 570-312534/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	312534
570-131073-1 MS	BGMP0003_20230314	Dissolved	Water	200.7 Rev 4.4	312534
570-131073-1 MSD	BGMP0003_20230314	Dissolved	Water	200.7 Rev 4.4	312534

General Chemistry

Analysis Batch: 309190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	Kelada 01	
MB 570-309190/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309190/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309190/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	

Prep Batch: 311759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	BOD Prep	
LCS 570-311759/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	

Analysis Batch: 311816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	SM 2540F	

Analysis Batch: 312018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	SM 2130B	
LCSSRM 570-312018/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-312018/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-312018/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Prep Batch: 312148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	1664A	
MB 570-312148/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-312148/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-312148/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 312164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	SM 5540C	312166
MB 570-312166/5-A	Method Blank	Total/NA	Water	SM 5540C	312166
LCS 570-312166/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	312166
LCSD 570-312166/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	312166

General Chemistry

Prep Batch: 312166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	SM 5540C	
MB 570-312166/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-312166/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-312166/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Analysis Batch: 312265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	1664A	312148
MB 570-312148/1-A	Method Blank	Total/NA	Water	1664A	312148
LCS 570-312148/2-A	Lab Control Sample	Total/NA	Water	1664A	312148
LCSD 570-312148/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	312148

Analysis Batch: 312701

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	SM 2540C	
MB 570-312701/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-312701/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-312701/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 313066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	SM 2540D	
MB 570-313066/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-313066/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-313066/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-131073-1 DU	BGMP0003_20230314	Total/NA	Water	SM 2540D	

Analysis Batch: 313148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	SM 2510B	
MB 570-313148/11	Method Blank	Total/NA	Water	SM 2510B	

Analysis Batch: 313443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	SM 5210B	311759
USB 570-313443/2	Method Blank	Total/NA	Water	SM 5210B	
LCS 570-311759/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	311759

Prep Batch: 314231

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	Distill/Ammonia	
MB 570-314231/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-314231/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-314231/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 314249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	350.1	314231
MB 570-314231/5-A	Method Blank	Total/NA	Water	350.1	314231
LCS 570-314231/6-A	Lab Control Sample	Total/NA	Water	350.1	314231
LCSD 570-314231/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	314231

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

General Chemistry

Analysis Batch: 314522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	218.6 CR3	
570-131073-1	BGMP0003_20230314	Total/NA	Water	218.6 CR3	

Analysis Batch: 315470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	SM 5310D	
MB 570-315470/33	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-315470/34	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-315470/35	Lab Control Sample Dup	Total/NA	Water	SM 5310D	

Geotechnical

Analysis Batch: 313070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	D4464	
LCS 570-313070/21	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-313070/23	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Client Sample ID: BGMP0003_20230314

Date Collected: 03/14/23 11:10
Date Received: 03/14/23 18:05

Lab Sample ID: 570-131073-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	311826	03/15/23 16:18	N1A	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	311925	03/15/23 21:09	UJHB	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			1008.8 mL	2 mL	311840	03/15/23 13:38	UM1W	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	314108	03/23/23 19:48	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	313446	03/21/23 16:58	P1R	EET CAL 4
	Instrument ID: GC73									
Total/NA	Prep	3510C			250 mL	2.5 mL	313523	03/21/23 17:31	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	315118	03/27/23 22:08	N1A	EET CAL 4
	Instrument ID: GC47									
Dissolved	Filtration	Filtration			100 mL	100 mL	311634	03/15/23 01:34	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	311633	03/15/23 05:45	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	218.6		1	4 mL	4 mL	311633	03/15/23 03:56	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	300.0		1	4 mL	4 mL	311636	03/15/23 08:12	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	311637	03/15/23 08:12	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	311891	03/15/23 20:26	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			313055	03/20/23 12:49	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Dissolved	Filtration	Filtration			50 mL	50 mL	312534	03/17/23 10:56	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			312749	03/17/23 19:36	P1R	EET CAL 4
	Instrument ID: ICP10									
Total Recoverable	Prep	200.7			50 mL	50 mL	312079	03/16/23 08:23	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			312340	03/16/23 23:49	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	312120	03/16/23 10:02	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			312206	03/16/23 12:20	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	312065	03/16/23 07:46	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			312206	03/16/23 12:11	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Analysis	SM 2340B		1			312313	03/21/23 17:28	P1R	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Analysis	SM 2340B		1			311940	03/21/23 17:15	P1R	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	1664A			1021 mL	1000 mL	312148	03/16/23 10:47	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			312265	03/16/23 16:09	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Client Sample ID: BGMP0003_20230314

Date Collected: 03/14/23 11:10
Date Received: 03/14/23 18:05

Lab Sample ID: 570-131073-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	218.6 CR3		1			314522	03/24/23 12:34	WH6J	EET CAL 4
Total/NA	Analysis	218.6 CR3		1			314522	03/24/23 12:34	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	314231	03/23/23 12:55	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	314249	03/23/23 15:01	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309190	03/27/23 13:47	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			312018	03/15/23 22:19	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			313148	03/20/23 17:52	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	312701	03/17/23 18:04	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	200 mL	1000 mL	313066	03/20/23 13:31	TXA8	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	311816	03/15/23 09:53	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	BOD Prep					311759	03/15/23 16:06	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	313443	03/15/23 17:52	U7UR	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	SM 5310D		1	40 mL	40 mL	315470	03/28/23 08:14	GG0B	EET CAL 4
	Instrument ID: TOC10									
Total/NA	Prep	SM 5540C			100 mL	100 mL	312166	03/15/23 15:30	ZVB7	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	312164	03/15/23 17:43	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	D4464		1			313070	03/20/23 18:22	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB_20230314-1

Date Collected: 03/14/23 11:10
Date Received: 03/14/23 18:05

Lab Sample ID: 570-131073-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	311826	03/15/23 15:56	N1A	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
9ro3ectP ite: / oeinS j j Bg lj F A and / L 9

Job ID: 570-121072-1

Laboratory: Eurofins Calscience

All accreditationRPertifVcationRheld by thiRlaboratory are liRted. s ot all accreditationRPertifVcationRare af f licable to thiRref ort.

Authority	Program	Identification Number	Expiration Date
AriNona	j tate	Ap0z20	11-1Z-82
CaliMrnia	goRAnSeleRCo6nty j anitation DiRtrictR	1010u	07-21-82
CaliMrnia	j CAQL D gA9	17gA0u1u	11-20-82
CaliMrnia	j tate	20z8	07-21-8v
s eCada	j tate	CA00111	0z-01-82
EreSon	s 4gA9	v175	08-08-8v
Uj DA	Uj Bederal 9roSramR	9220-88-0005u	05-8v-82
WaRhinSton	j tate	Cu1Z-1z	10-11-82

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

1664A = EPA-821-98-002
ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131073-1	BGMP0003_20230314	Water	03/14/23 11:10	03/14/23 18:05
570-131073-3	TB_20230314-1	Water	03/14/23 11:10	03/14/23 18:05

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210553.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131073-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/28/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230314-2 (570-131073-2)	3/14/23	11:10 Pacific		Water					X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/14/23 1634	EC		3/14/23 1624	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2 - D27E

4/4/2023

Loc: 570
131073

570-131073 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Mark Dominick	Date: 3-14-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9806	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Weck Labs in Hacienda Heights, CA	E. coli (SM9221) Enthalby Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
BGBMP0003_20230314	3/14/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
TB_20230314-1	3/14/23	1110	TB	WM	3	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	2	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings

Meter Serial #: 22BJ6UX

Time of Readings: 1110

DO (mg/L): 5.02

pH: 6.52

Temp (°C/°F): 56.1

TRC (mg/L): 0.00

Checked by:

Date/Time: 1220 / 3-14-23

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1345	Received by: EC	Date/Time: 3/14/23 1345
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Received by: RC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.5/2.4 1.8/1.7 5C12

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/4/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARC DOMINICI	Date: 3.14.2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
BGBMP0003_20230314	3/14/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230314-2	3/14/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1315	Receiv		Date/Time: 3/14/23 1315
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Receiv	EC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131073-1

Login Number: 131073
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131073-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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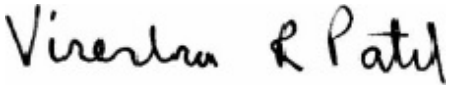
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131073-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131073-2

Comments
No additional comments.

Receipt
The samples were received on 3/14/2023 6:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.4º C.

Receipt Exceptions

TB_20230314-1 (570-131073-3). The laboratory did not receive 3x Vials 40ml HCL (Trip Blank)that was Listed on the Chain-of-Custody on the following sample # 3

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-2

Client Sample ID: BGMP0003_20230314

Lab Sample ID: 570-131073-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0084		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0065		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-121072-9
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: BGMP0003_20230314 **Lab Sample ID: 570-131073-1**
Date Collected: 03/14/23 11:10 **Matrix: Water**
Date Received: 03/14/23 18:05

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0084		0,00050	0,00007M	uBjF			02j97j92 17:52	1

3 udoEef 4 HCrli eri

Page 7 of 20 4/4/2023

Client Sample Results

4 Client HCay & Adrchler, . dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-121072-9

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: BGMP0003_20230314
Date Collected: 03/14/23 11:10
Date Received: 03/14/23 18:05

Lab Sample ID: 570-131073-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0065		0,00050	0,00007M	uBjF			02j97j92 17:sM	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-421566/15
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/27/23 13:43	1

Lab Sample ID: MB 580-421566/16
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/27/23 13:48	1

Lab Sample ID: MB 580-421566/17
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/27/23 13:52	1

Lab Sample ID: LCS 580-421566/23
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00465		ug/L		93	77 - 123		

Lab Sample ID: LCSD 580-421566/24
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00465		ug/L		93	77 - 123	0	24

Lab Sample ID: MB 580-420581/1-A
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/27/23 15:57	1

Metals

Filtration Batch: 420581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	Filtration	
MB 580-420581/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 421566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	1631E	420581
570-131073-1	BGMP0003_20230314	Total/NA	Water	1631E	
MB 580-420581/1-A	Method Blank	Dissolved	Water	1631E	420581
MB 580-421566/15	Method Blank	Total/NA	Water	1631E	
MB 580-421566/16	Method Blank	Total/NA	Water	1631E	
MB 580-421566/17	Method Blank	Total/NA	Water	1631E	
LCS 580-421566/23	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-421566/24	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-2

Client Sample ID: BGMP0003_20230314
Date Collected: 03/14/23 11:10
Date Received: 03/14/23 18:05

Lab Sample ID: 570-131073-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	420581	03/16/23 13:15	DRM	EET SEA
Dissolved	Analysis	1631E		1			421566	03/27/23 17:49	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			421566	03/27/23 17:53	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-2

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131073-1	BGMP0003_20230314	Water	03/14/23 11:10	03/14/23 18:05

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210553.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131073-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/28/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230314-2 (570-131073-2)	3/14/23	11:10 Pacific		Water					X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/14/23 1634	EC		3/14/23 1624	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2 - D27E

Loc: 570
131073

570-131073 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Mark Dominick	Date: 3-14-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9806	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Weck Labs in Hacienda Heights, CA	E. coli (SM9221) Enthalby Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
BGBMP0003_20230314	3/14/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
TB_20230314-1	3/14/23	1110	TB	WM	3	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	2	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings

Meter Serial #: 22BJ6UX

Time of Readings: 1110

DO (mg/L): 5.02

pH: 6.52

Temp (°C/°F): 56.1

TRC (mg/L): 0.00

Checked by:

Date/Time: 1220 / 3-14-23

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1345	Received by: EC	Date/Time: 3/14/23 1345
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Received by: RC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.5/2.4 1.8/1.7 5C12

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARC DOMINICI	Date: 3.14.2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM232OB (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM232OB (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
BGBMP0003_20230314	3/14/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230314-2	3/14/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1315	Receiv	Date/Time: 3/14/23 1315
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Receiv EC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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4/4/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210633.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-131073-2
Address: 5755 8th Street East,	Due Date Requested: 3/30/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements: 6368 9239 0533
Empty Kit Relinquished by: Date:	Time: Method of Shipment:
Relinquished by: Date/Time: 03/15/23 9:07 Company EC	Received by: Date/Time: 3/16/23 8:15 Company EPLS
Relinquished by: Date/Time: Company	Received by: Date/Time: Company
Relinquished by: Date/Time: Company	Received by: Date/Time: Company
Custody Seals Intact: ☒ Yes ☐ No Custody Seal No.: NP	Cooler Temperature(s) °C and Other Remarks: 0.1 D,2 05

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131073-2

Login Number: 131073
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131073-2

Login Number: 131073
List Number: 3
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/16/23 01:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/10/2023 2:04:38 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131073-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

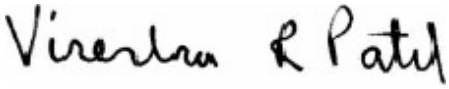
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131073-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131073-3

Comments
No additional comments.

Receipt
The samples were received on 3/14/2023 6:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.4º C.

Receipt Exceptions

TB_20230314-1 (570-131073-3). The laboratory did not receive 3x Vials 40ml HCL (Trip Blank)that was Listed on the Chain-of-Custody on the following sample # 3

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Method	Method Description	Protocol	Laboratory
j Mbdoi eAt de	NM t i e-uAt H- Qh9 o3C- 3 Tl 3E A vMA &	Roi l	Qi e r t 34H

Protocol References:

Roi l q Roi l

Laboratory References:

Qi e r t 34H q Qi e r t 34H y i t 3 HsCt 3- / t Ap3 Hc=21 k h/ t Ap3 Hy Tl cWAt i Sl c9 y =C868

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131073-1	BGMP0003_20230314	Water	03/14/23 11:10	03/14/23 18:05

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 481538
Report Level: IV
Report Date: 03/27/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Project: BOEING NPDES SSFL - Boeing SSFL ISRA and BMP - NEW 57014595

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	Lab Job #: Project No: Location: Date Received:	481538 BOEING NPDES SSFL Boeing SSFL ISRA and BMP - NEW 57014595 03/14/23

Sample ID	Lab ID	Collected	Matrix
BGMP0003_20230314 (570-131073-1)	481538-001	03/14/23 11:10	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	481538
	Project No:	BOEING NPDES SSFL
	Location:	Boeing SSFL ISRA and BMP - NEW 57014595
	Date Received:	03/14/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/14/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

481538

Chain of Custody Record

0-7148

eurofins
Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210552.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-131073-3
Address: 931 W. Barkley Ave,	Due Date Requested: 3/27/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/14/23 1720	EC		3/14/23 1720	ET
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

4/10/2023

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: ECL Calscience Project: Boeing

Date Received: 3/14/23 Sampler's Name Present: ☐ Yes ☒ No

Section 2

Sample(s) received in a cooler? ☒ Yes, How many? 1 ☐ No (skip section 2) Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 4.8 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☒ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 6.7 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	X		
Are sample IDs present?	X		
Are sampling dates & times present?	X		
Is a relinquished signature present?	X		
Are the tests required clearly indicated on the COC?	X		
Are custody seals present?		X	
If custody seals are present, were they intact?			X
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			X
Did all samples arrive intact? If no, indicate in Section 4 below.	X		
Did all bottle labels agree with COC? (ID, dates and times)	X		
Were the samples collected in the correct containers for the required tests?	X		
Are the containers labeled with the correct preservatives?	X		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			X
Was a sufficient amount of sample submitted for the requested tests?	X		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 3/14/23

Enthalpy Analytical, a subsidiary of Montrose Environmental Group ,Inc.
931 W. Barkley Ave, Orange, CA 92868 • T: (714) 771-6900 • F: (714) 538-1209
www.enthalpy.com/socal

ICOC No:
570-210552

Containers

Count	Container Type	Preservative
3	Plastic 120mL - Sterile/Na2SO3	Sodium Sulfite

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 481538 **Project#:** BOEING NPDES SSFL

Client: Eurofins Calscience Tustin **Location:** Boeing SSFL ISRA and BMP - NEW 570...

Field ID:	BGMP0003_20230314 (570-131073-1)	**Batch#:**	309788	**Analyzed:**	03/15/23 13:46
Lab ID:	481538-001	**Sampled:**	03/14/23 11:10	**Prep:**	
Matrix:	Water	**Received:**	03/14/23	**Analysis:**	SM 9223Bb
DiIn Fac:	1.000	**Prepared:**	03/14/23 18:02	**Analyst:**	SMT

481538-001 Analyte	Result	RL	Units
Coliform, E. Coli	**9.7**	1.0	MPN/100ml

Legend

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: VC Prep Date/Time: 3/14/23 1802 QC Batch ID: 309788 Batch Page 1 of 2

Read Analyst: PS Read Date/Time 3/15/23 1346

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: HU142/HU430 Pipette Lot #: A1041222

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 3/1/23 Bottle Lot #: DU006U Comparator Lot #: HU148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 35.1°C 1830 Incubator Out, Temp/Time: 35.4°C 1346

Fecal Coliform: Water Bath ID: JA 3/14/23 Water Bath In, Temp/Time: 44.6°C 1830 Water Bath Out, Temp/Time: 44.6°C 1346

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		481538-001	1x	49	48	>2419.6	>2400	8	1	9.7	9.7					EC-01
			10x	49	16	275.5	2800	0	0	<1	<10					
			100x	9	0	9.8	9800	0	0	<1	<100					
		481541-022	1x	49	48	>2419.6	>2400	49	48	>2419.6	>2400					M-01
		023		49	48	>2419.6	>2400	49	48	>2419.6	>2400					-02
		481518-001		12	2	15.8	16	0	0	<1	<1	0	0	<1	<1	RC-01
		-002		49	22	387.3	390	0	0	<1	<1	0	0	<1	<1	-02
		-003		22	1	29.5	30	0	0	<1	<1	1	0	1.0	1.0	-03
		-004		43	6	105.0	100	0	0	<1	<1	0	0	<1	<1	-04
		-005		2	0	2.0	2.0	0	0	<1	<1	0	0	<1	<1	-05
		481520-001		49	48	>2419.6	>2400	0	0	<1	<1	1	0	1.0	1.0	RN-01
		-002		49	48	>2419.6	>2400	49	20	344.8	<1340	26	2	38.4	38	-02
		-003		37	5	73.3	73	0	0	<1	<1	0	0	<1	<1	-03
Quality Control		**Culture ID**														
Positive +/+ (E. Coli)		3/12/23		49	48	>2419.6	>2400	49	48	>24	>2400	49	48	>24	>2400	
Positive +/- (K. Pneumonia)				49	48	>2419.6	>2400	0	0	<1	<1	49	48	>2419.6	>2400	
Negative -/- (P. Aeruginosa)				0	0	<1	<1	0	0	<1	<1	0	0	<1	<1	

Data Entered By: JA 3/14/23 Data Reviewed By:

SM 9223 B-b, Quanti-Tray

Prep Analyst: VC Prep Date/Time: 3/4/23 1802 QC Batch ID: 309788 Batch Page 2 of 2

Read Analyst: RS Read Date/Time 3/5/23 1346

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: HU642/HU430 Pipette Lot #: 4104222

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 3/1/23 Bottle Lot #: DU60606V Comparator Lot #: HU648

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 35.1°C 1830 Incubator Out, Temp/Time: 1346 35.4°C

Fecal Coliform: Water Bath ID: 1 Water Bath In, Temp/Time: 44.6°C 1830 Water Bath Out, Temp/Time: 1346 44.6°C

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts		MPN Table Value	Final Result, MPN	E. coli Counts		MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only)		MPN Table Value	Final Result, MPN	Comments
				Large Wells	Small Wells			Large Wells	Small Wells			Large Wells	Small Wells			
		4181520-004	1x	49	18	307.6	310	0	0	<1	<1	0	0	<1	<1	RN-04

JA 3/16/23

Quality Control	Culture ID														
Positive +/+ (E. Coli)	3/2/23	49	48	>2419.6	>2400	49	48	>2419.6	>2400	49	48	>2419.6	>2400		
Positive +/- (K. Pneumonia)	↓	49	48	>2419.6	>2400	0	0	<1	<1	49	48	>2419.6	>2400		
Negative -/- (P. Aeruginosa)		0	0	<1	<1	0	0	<1	<1	0	0	<1	<1		

Data Entered By: JA 3/16/23 Data Reviewed By:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210553.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131073-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/28/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230314-2 (570-131073-2)	3/14/23	11:10 Pacific		Water					X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/14/23 1634	EC		3/14/23 1624	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2 - D27E

4/10/2023

Loc: 570
131073

570-131073 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Mark Dominick	Date: 3-14-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9806	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Weck Labs in Hacienda Heights, CA	E. coli (SM9221) Enthalby Analytical in Orange, CA	Cyanide (SM 4500-CN-E)
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly
BGBMP0003_20230314	3/14/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
TB_20230314-1	3/14/23	1110	TB	WM	3	N	N														x		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	2	6	5

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #: 22BJ6UX
Time of Readings: 1110
DO (mg/L): 5.02
pH: 6.52
Temp (°C/°F): 56.1
TRC (mg/L): 0.00
Checked by:
Date/Time: 1220 / 3-14-23

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1345	Received by: EC	Date/Time: 3/14/23 1345
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Received by: RC	Date/Time: 3/14/23 1805
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.5/2.4 1.8/1.7 5C12

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/10/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARC DOMINICI	Date: 3.14.2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
BGBMP0003_20230314	3/14/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230314-2	3/14/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1315	Receiv		Date/Time: 3/14/23 1315
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Receiv	EC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131073-3

Login Number: 131073
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/21/2023 11:00:59 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131073-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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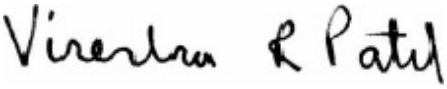

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Authorized for release by
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-4

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131073-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131073-4

Comments
No additional comments.

Receipt
The samples were received on 3/14/2023 6:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.4º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: BGMP0003_20230314 (570-131073-1), (CCV 320-665897/1) and (MB 320-664640/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: (CCV 320-666484/2), (LCS 320-664640/2-A) and (LCSD 320-664640/3-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: The method blank for preparation batch 320-664640 contained 1,2,3,4,6,7,8-HpCDF above the reporting limit (RL). None of the samples associated with this method blank contained the target compound over the RL; therefore, re-extraction and/or re-analysis of samples were not performed.

Method 1613B: The method blank for preparation batch 320-664640 and analytical batch 320-665897 contained OCDD above the reporting limit (RL). This compound is considered a common laboratory contaminant. The associated sample(s) was not re-extracted and/or re-analyzed because the concentration of the common lab contaminant in the method blank was less than 5 times the RL.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
Method 1613B: Elevated reporting limits are provided for the following sample due to insufficient sample provided for preparation: BGMP0003_20230314 (570-131073-1). Nominal volume required by method is 1L.

preparation batch 320-664640
Method: 1613_Sox_Sep_P
Matrix: Water

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-4

Client Sample ID: BGMP0003_20230314 — Lab Sample ID: 570-131073-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	0.0000016	J,DX MB	0.000054	0.000000028	ug/L	1		1613B	Total/NA
OCDD	0.000015	J,DX q MB	0.00011	0.000000059	ug/L	1		1613B	Total/NA
OCDF	0.0000016	J,DX q MB	0.00011	0.000000034	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000036	J,DX MB	0.000054	0.000000028	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: BGMP0003_20230314 **Lab Sample ID: 570-131073-1**
Date Collected: 03/14/23 11:10 **Matrix: Water**
Date Received: 03/14/23 18:05

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
8h2h7h8-T6 DD	MD		0,000011	0,0000000 N3	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
8h2h7h8-T6 Dg	MD		0,000011	0,0000000 13	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
1h8h2h7h8-. i 6 DD	MD		0,000054	0,0000000 8N	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
1h8h2h7h8-. i 6 Dg	MD		0,000054	0,0000000 88	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
8h2h4h7h8-. i 6 Dg	MD		0,000054	0,0000000 87	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
1h8h2h4h7h8-t 96 DD	MD		0,000054	0,0000000 41	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
1h8h2hNh7h8-t 96 DD	MD		0,000054	0,0000000 42	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
1h8h2h7h8hx-t 96 DD	MD		0,000054	0,0000000 23	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
1h8h2h4h7h8-t 96 Dg	MD		0,000054	0,0000000 14	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
1h8h2hNh7h8-t 96 Dg	MD		0,000054	0,0000000 14	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
1h8h2h7h8hx-t 96 Dg	MD		0,000054	0,0000000 17	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
8h2h4hNh7h8-t 96 Dg	MD		0,000054	0,0000000 15	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
1,2,3,4,6,7,8-HpCDD	**0.0000016**	**J,DX MB**	0,000054	0,0000000 83	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
1h8h2h4hNh7h8-t p6 Dg	MD		0,000054	0,0000000 84	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
1h8h2h4h7h8hx-t p6 Dg	MD		0,000054	0,0000000 8N	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
OCDD	**0.000015**	**J,DX q MB**	0,00011	0,0000000 5x	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
OCDF	**0.0000016**	**J,DX q MB**	0,00011	0,0000000 24	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
TorHCT6 DD	MD		0,000011	0,0000000 N3	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
TorHCT6 Dg	MD		0,000011	0,0000000 13	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
TorHC. i 6 DD	MD		0,000054	0,0000000 8N	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
TorHC. i 6 Dg	MD		0,000054	0,0000000 88	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
TorHCt 96 DD	MD		0,000054	0,0000000 23	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
TorHCt 96 Dg	MD		0,000054	0,0000000 14	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
Total HpCDD	**0.0000036**	**J,DX MB**	0,000054	0,0000000 83	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1
TorHCt p6 Dg	MD		0,000054	0,0000000 84	uBjF		02j21j82 0N:84	04j0Nj82 81:47	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*56*		*24 - 150*	*63/31/23965 20*	*60/65/2392 1 07*	*1*
13C-2,3,7,8-TCD:	*47*		*20 - 15F*	*63/31/23965 20*	*60/65/2392 1 07*	*1*
13C-1,2,3,7,8-PeCDD	*52*		*24 - 181*	*63/31/23965 20*	*60/65/2392 1 07*	*1*
13C-1,2,3,7,8-PeCD:	*4F*		*20 - 184*	*63/31/23965 20*	*60/65/2392 1 07*	*1*

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Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: BGMP0003_20230314 **Lab Sample ID: 570-131073-1**
Date Collected: 03/14/23 11:10 **Matrix: Water**
Date Received: 03/14/23 18:05

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,0,7,8-PeCD:	45		21 - 178	63/31/23965 20	60/65/23921 07	1
13C-1,2,3,0,7,8-HxCDD	51		32 - 101	63/31/23965 20	60/65/23921 07	1
13C-1,2,3,5,7,8-HxCDD	50		28 - 136	63/31/23965 20	60/65/23921 07	1
13C-1,2,3,0,7,8-HxCD:	56		25 - 142	63/31/23965 20	60/65/23921 07	1
13C-1,2,3,5,7,8-HxCD:	53		25 - 123	63/31/23965 20	60/65/23921 07	1
13C-1,2,3,7,8,F-HxCD:	4F		2F - 107	63/31/23965 20	60/65/23921 07	1
13C-2,3,0,5,7,8-HxCD:	51		28 - 135	63/31/23965 20	60/65/23921 07	1
13C-1,2,3,0,5,7,8-HpCDD	5F		23 - 106	63/31/23965 20	60/65/23921 07	1
13C-1,2,3,0,5,7,8-HpCD:	40		28 - 103	63/31/23965 20	60/65/23921 07	1
13C-1,2,3,0,7,8,F-HpCD:	52		25 - 138	63/31/23965 20	60/65/23921 07	1
13C-OCDD	51		17 - 147	63/31/23965 20	60/65/23921 07	1
13C-OCD:	48		17 - 147	63/31/23965 20	60/65/23921 07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl0-2,3,7,8-TCDD	54		34 - 1F7	63/31/23965 20	60/65/23921 07	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-131073-1	BGMP0003_20230314	65								
MB 320-664640/1-A	Method Blank	57								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-664640/2-A	Lab Control Sample	68								
LCSD 320-664640/3-A	Lab Control Sample Dup	70								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-131073-1	BGMP0003_20230314	60	57	62	59	56	61	64	60
MB 320-664640/1-A	Method Blank	41	37	42	39	38	35	36	35

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-131073-1	BGMP0003_20230314	63	59	61	69	54	62	61	58
MB 320-664640/1-A	Method Blank	34	36	33	39	31	37	35	32

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-664640/2-A	Lab Control Sample	56	54	60	56	56	54	58	55
LCSD 320-664640/3-A	Lab Control Sample Dup	59	56	59	56	55	54	56	52

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-664640/2-A	Lab Control Sample	57	56	56	63	51	59	54	56
LCSD 320-664640/3-A	Lab Control Sample Dup	55	56	55	59	50	53	53	52

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-4

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-664640/1-A
Matrix: Water
Analysis Batch: 665897

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 664640

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
M2h7h8-86 DD	TD		0,000010	0,0000001 3	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
M2h7h8-86 Dg	TD		0,000010	0,0000000 M5	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
1hM2h7h8-. i 6 DD	TD		0,000050	0,0000000 XM	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
1hM2h7h8-. i 6 Dg	TD		0,000050	0,0000000 7X	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
M2h4h7h8-. i 6 Dg	TD		0,000050	0,0000000 XM	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
1hM2h4h7h8-t q6 DD	TD		0,000050	0,0000000 75	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
1hM2huh7h8-t q6 DD	TD		0,000050	0,0000000 7u	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
1hM2h7h8hX-t q6 DD	TD		0,000050	0,0000000 uX	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
1hM2h4h7h8-t q6 Dg	0,00001X3	JhDx	0,000050	0,000000M 3	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
1hM2huh7h8-t q6 Dg	0,00000250	JhDx	0,000050	0,000000M X	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
1hM2h7h8hX-t q6 Dg	0,00000110	JhDx 9	0,000050	0,000000M 3	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
M2h4huh7h8-t q6 Dg	0,00000M41	JhDx	0,000050	0,000000M 3	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
1hM2h4huh7h8-t p6 DD	0,0000M0M	JhDx 9	0,000050	0,000000M 7	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
1hM2h4huh7h8-t p6 Dg	0,000057X	9	0,000050	0,0000004 2	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
1hM2h4h7h8hX-t p6 Dg	0,0000040M	JhDx 9	0,000050	0,0000004 2	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
O6 DD	0,000422		0,00010	0,000001X	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
O6 Dg	0,0000721	JhDx	0,00010	0,0000005 7	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
8orHC86 DD	TD		0,000010	0,0000001 3	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
8orHC86 Dg	TD		0,000010	0,0000000 M5	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
8orHC. i 6 DD	TD		0,000050	0,0000000 XM	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
8orHC. i 6 Dg	TD		0,000050	0,0000000 7X	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
8orHCt q6 DD	TD		0,000050	0,0000000 uX	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
8orHCt q6 Dg	0,0000410	JhDx 9	0,000050	0,000000M 3	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
8orHCt p6 DD	0,0000412	JhDx 9	0,000050	0,000000M 7	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1
8orHCt p6 Dg	0,0000744	9	0,000050	0,0000004 2	NBjF		02j21jM2 0u:M4	04j0ujM2 1M53	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*51*		*26 - 145*	*/ 30310 23 / 4:25*	*/ 50' 40 23 12:68*	*1*
13C-2,3,7,8-TCDF	*37*		*25 - 149*	*/ 30310 23 / 4:25*	*/ 50' 40 23 12:68*	*1*
13C-1,2,3,7,8-PeCDD	*52*		*26 - 181*	*/ 30310 23 / 4:25*	*/ 50' 40 23 12:68*	*1*

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Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-664640/1-A
Matrix: Water
Analysis Batch: 665897

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 664640

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	39		25 - 186	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-2,3,5,7,8-PeCDF	38		21 - 178	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-1,2,3,5,7,8-HxCDD	36		32 - 151	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-1,2,3,4,7,8-HxCDD	34		28 - 13/	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-1,2,3,5,7,8-HxCDF	36		24 - 162	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-1,2,3,4,7,8-HxCDF	35		24 - 123	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-1,2,3,7,8,9-HxCDF	34		29 - 157	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-2,3,5,4,7,8-HxCDF	33		28 - 134	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-1,2,3,5,4,7,8-HpCDD	39		23 - 15/	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-1,2,3,5,4,7,8-HpCDF	31		28 - 153	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-1,2,3,5,7,8,9-HpCDF	37		24 - 138	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-OCDD	36		17 - 167	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1
13C-OCDF	32		17 - 167	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl5-2,3,7,8-TCDD	67		36 - 197	/ 30 3102 23 / 4:25	/ 50 4023 12:68	1

Lab Sample ID: LCS 320-664640/2-A
Matrix: Water
Analysis Batch: 666484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 664640

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
M2h7h8-86 DD			0,000M00	0,000173		NBjF		3X	u7 - 153		
M2h7h8-86 Dg			0,000M00	0,0001XX		NBjF		100	75 - 153		
1hM2h7h8-. i 6 DD			0,00100	0,000347		NBjF		35	70 - 14M		
1hM2h7h8-. i 6 Dg			0,00100	0,000313		NBjF		3M	30 - 124		
M2h4h7h8-. i 6 Dg			0,00100	0,0003M8		NBjF		32	u3 - 1u0		
1hM2h4h7h8-t q6 DD			0,00100	0,00035M		NBjF		35	70 - 1u4		
1hM2huh7h8-t q6 DD			0,00100	0,0003uX		NBjF		37	7u - 124		
1hM2h7h8hX-t q6 DD			0,00100	0,000351		NBjF		35	u4 - 1uM		
1hM2h4h7h8-t q6 Dg			0,00100	0,000372		NBjF		37	7M - 124		
1hM2huh7h8-t q6 Dg			0,00100	0,000330		NBjF		33	34 - 120		
1hM2h7h8hX-t q6 Dg			0,00100	0,000330		NBjF		33	73 - 120		
M2h4huh7h8-t q6 Dg			0,00100	0,000377		NBjF		33	70 - 15u		
1hM2h4huh7h8-t p6 DD			0,00100	0,000302		NBjF		30	70 - 140		
1hM2h4huh7h8-t p6 Dg			0,00100	0,000X1X		NBjF		XM	3M - 1MM		
1hM2h4h7h8hX-t p6 Dg			0,00100	0,000352		NBjF		35	73 - 123		
O6 DD			0,00M00	0,001XM		NBjF		Xu	73 - 144		
O6 Dg			0,00M00	0,0013M		NBjF		X1	u2 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	64		2/ - 176
13C-2,3,7,8-TCDF	65		22 - 162
13C-1,2,3,7,8-PeCDD	4/		21 - 227
13C-1,2,3,7,8-PeCDF	64		21 - 192
13C-2,3,5,7,8-PeCDF	64		13 - 328
13C-1,2,3,5,7,8-HxCDD	65		21 - 193
13C-1,2,3,4,7,8-HxCDD	68		26 - 143

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-664640/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 666484 **Prep Batch: 664640**

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,5,7,8-HxCDF	66		19 - 2/ 2
13C-1,2,3,4,7,8-HxCDF	67		21 - 169
13C-1,2,3,7,8,9-HxCDF	64		17 - 2/ 6
13C-2,3,5,4,7,8-HxCDF	64		22 - 174
13C-1,2,3,5,4,7,8-HpCDD	43		24 - 144
13C-1,2,3,5,4,7,8-HpCDF	61		21 - 168
13C-1,2,3,5,7,8,9-HpCDF	69		2/ - 184
13C-OCDD	65		13 - 199
13C-OCDF	64		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl5-2,3,7,8-TCDD	48		31 - 191

Lab Sample ID: LCSD 320-664640/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 666484 **Prep Batch: 664640**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
M2h7h8-86 DD			0,000M00	0,000171		NBjF		3u	u7 - 153	4	50
M2h7h8-86 Dg			0,000M00	0,00013X		NBjF		X5	75 - 153	5	50
1hM2h7h8-. i 6 DD			0,00100	0,0003M1		NBjF		3M	70 - 14M	2	50
1hM2h7h8-. i 6 Dg			0,00100	0,000314		NBjF		31	30 - 124	0	50
M2h4h7h8-. i 6 Dg			0,00100	0,000314		NBjF		31	u3 - 1u0	M	50
1hM2h4h7h8-t q6 DD			0,00100	0,000745		NBjF		74	70 - 1u4	12	50
1hM2huh7h8-t q6 DD			0,00100	0,000343		NBjF		35	7u - 124	M	50
1hM2h7h8hX-t q6 DD			0,00100	0,000311		NBjF		31	u4 - 1uM	5	50
1hM2h4h7h8-t q6 Dg			0,00100	0,0003MX		NBjF		32	7M- 124	5	50
1hM2huh7h8-t q6 Dg			0,00100	0,000327		NBjF		34	34 - 120	5	50
1hM2h7h8hX-t q6 Dg			0,00100	0,000311		NBjF		31	73 - 120	3	50
M2h4huh7h8-t q6 Dg			0,00100	0,000317		NBjF		3M	70 - 15u	7	50
1hM2h4huh7h8-t p6 DD			0,00100	0,00075u		NBjF		7u	70 - 140	u	50
1hM2h4huh7h8-t p6 Dg			0,00100	0,0003MX		NBjF		32	3M- 1MM	10	50
1hM2h4h7h8hX-t p6 Dg			0,00100	0,000314		NBjF		31	73 - 123	5	50
O6 DD			0,00M00	0,001uu		NBjF		32	73 - 144	14	50
O6 Dg			0,00M00	0,001u3		NBjF		34	u2 - 170	3	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	69		2/ - 176
13C-2,3,7,8-TCDF	64		22 - 162
13C-1,2,3,7,8-PeCDD	69		21 - 227
13C-1,2,3,7,8-PeCDF	64		21 - 192
13C-2,3,5,7,8-PeCDF	66		13 - 328
13C-1,2,3,5,7,8-HxCDD	65		21 - 193
13C-1,2,3,4,7,8-HxCDD	64		26 - 143
13C-1,2,3,5,7,8-HxCDF	62		19 - 2/ 2
13C-1,2,3,4,7,8-HxCDF	66		21 - 169
13C-1,2,3,7,8,9-HxCDF	64		17 - 2/ 6
13C-2,3,5,4,7,8-HxCDF	66		22 - 174

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-664640/3-A
Matrix: Water
Analysis Batch: 666484

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 664640

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,5,4,7,8-HpCDD	69		24 - 144
13C-1,2,3,5,4,7,8-HpCDF	6/		21 - 168
13C-1,2,3,5,7,8,9-HpCDF	63		2/ - 184
13C-OCDD	63		13 - 199
13C-OCDF	62		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl5-2,3,7,8-TCDD	7/		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-4

Specialty Organics

Prep Batch: 664640

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	1613B	
MB 320-664640/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-664640/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-664640/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 665897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	1613B	664640
MB 320-664640/1-A	Method Blank	Total/NA	Water	1613B	664640

Analysis Batch: 666484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-664640/2-A	Lab Control Sample	Total/NA	Water	1613B	664640
LCSD 320-664640/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	664640

Lab Chronicle

Client: Haley & Aldrich, Inc.
9roRectj/ ite: SoeinB / / gF I/ L A and SR 9

Job ID: 570-121072-3

Client Sample ID: BGMP0003_20230314

Date Collected: 03/14/23 11:10
Date Received: 03/14/23 18:05

Lab Sample ID: 570-131073-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
8otaljEA	9reM	1p12S			T26.1 NF	60.0 mF	pp3p30	02j21j62 0p:63	gC	448 / AC
8otaljEA	Analyuiu	1p12S		1	1 / aNMe	1 / aNMe	pp5sT7	03j0pj62 61:37	GL S	448 / AC

InutrmNent ID: Dg/ 1

Laboratory References:

448 / AC = 4mrofinu / acraNento, ss0 Liveruide 9arkway, Weut / acraNento, CA T5p05, 84F (T1p)272-5p00

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-4

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	06-01-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-4

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131073-1	BGMP0003_20230314	Water	03/14/23 11:10	03/14/23 18:05

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210553.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131073-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/28/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230314-2 (570-131073-2)	3/14/23	11:10 Pacific		Water					X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/14/23 1634	EC		3/14/23 1624	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2 - D27E

4/21/2023

Loc: 570
131073

570-131073 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Mark Dominick	Date: 3-14-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9806	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Weck Labs in Hacienda Heights, CA	E. coli (SM9221) Enthalby Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
BGBMP0003_20230314	3/14/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
TB_20230314-1	3/14/23	1110	TB	WM	3	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	2	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #: 22BJ6UX
Time of Readings: 1110
DO (mg/L): 5.02
pH: 6.52
Temp (°C/°F): 56.1
TRC (mg/L): 0.00
Checked by:
Date/Time: 1220 / 3-14-23

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1345	Received by: EC	Date/Time: 3/14/23 1345
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Received by: BC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.5/2.4 1.8/1.7 5C12

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/21/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARC DOMINICI	Date: 3.14.2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
BGBMP0003_20230314	3/14/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230314-2	3/14/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1315	Receiv		Date/Time: 3/14/23 1315
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Receiv	EC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210635.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-131073-4
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/30/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time	Company	Received by:	Date/Time	Company
Relinquished by:	03/15/23 9:12	EC		3/16/23 0915	EETLA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.9°C

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131073-4

Login Number: 131073
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131073-4

Login Number: 131073
List Number: 4
Creator: Oropeza, Salvador

List Source: Eurofins Sacramento
List Creation: 03/16/23 03:06 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.9C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131073-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

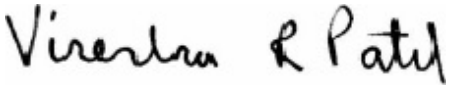
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-5

Job ID: 570-131073-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131073-5

Comments
No additional comments.

Receipt
The samples were received on 3/14/2023 6:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.4º C.

Receipt Exceptions

TB_20230314-1 (570-131073-3). The laboratory did not receive 3x Vials 40ml HCL (Trip Blank)that was Listed on the Chain-of-Custody on the following sample # 3

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods EPA 608 - Pesticides/PCBs - PP list, VOCs-2CVE only (E624), Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-5

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs-2CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131073-1	BGMP0003_20230314	Water	03/14/23 11:10	03/14/23 18:05
570-131073-2	TB_20230314-2	Water	03/14/23 11:10	03/14/23 18:05

Work Orders: 3C15075

Project: 570-131073-5

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 4/24/2023
Received Date: 3/14/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #: 570-131073-5
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/14/23 with the Chain-of-Custody document. The samples were received in good condition, at 5.2 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: BGMP0003_20230314 (570-131073-1) — Sampled: 03/14/23 11:10 by Client

3C15075-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 525.2M			**Instr:** GCMS13				
Batch ID: W3C2319 **Preparation:** EPA 525.2/SPE			**Prepared:** 03/28/23 08:33				**Analyst:** EFC
Chlorpyrifos	ND	0.0040	0.010	ug/l	1	04/04/23	Q-02
Diazinon	ND	0.0034	0.010	ug/l	1	04/04/23	
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*60%*		*50-141*	*Conc: 0.301*		*04/04/23*	
Triphenyl phosphate	*90%*		*63-200*	*Conc: 0.451*		*04/04/23*	
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C1825 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/21/23 13:27				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.050	ug/l	1	04/17/23	
Surrogate(s)							
Decachlorobiphenyl	*88%*		*33-133*	*Conc: 0.0837*		*04/17/23*	
Tetrachloro-meta-xylene	*66%*		*32-130*	*Conc: 0.0620*		*04/17/23*	
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C1417 **Preparation:** EPA 5030B			**Prepared:** 03/16/23 07:39				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l	1	03/16/23	
Surrogate(s)							
1,2-Dichloroethane-d4	*103%*		*82-125*	*Conc: 51.6*		*03/16/23*	
4-Bromofluorobenzene	*94%*		*88-108*	*Conc: 46.8*		*03/16/23*	
Toluene-d8	*94%*		*92-112*	*Conc: 46.8*		*03/16/23*	
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32				**Analyst:** pjs

Sample Results

(Continued)

Sample: BGMP0003_20230314 (570-131073-1) Sampled: 03/14/23 11:10 by Client
3C15075-01 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32			**Analyst:** pjs	
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l	1	04/05/23	Q-01

Sample: TB-20230314-2 (570-131073-2) Sampled: 03/14/23 11:10 by Client
3C15075-02 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C1417 **Preparation:** EPA 5030B			**Prepared:** 03/16/23 07:39			**Analyst:** ADM	
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l	1	03/16/23	
Surrogate(s)							
1,2-Dichloroethane-d4	*103%*		*82-125*	*Conc: 51.6*		*03/16/23*	
4-Bromofluorobenzene	*96%*		*88-108*	*Conc: 47.8*		*03/16/23*	
Toluene-d8	*93%*		*92-112*	*Conc: 46.4*		*03/16/23*	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C1825-BLK1)					**Prepared: 03/21/23**	**Analyzed: 04/17/23**					
Endrin aldehyde	ND	0.0019	0.050	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.114*			*ug/l*	*0.100*		*114*	*33-133*			
Tetrachloro-meta-xylene	*0.0641*			*ug/l*	*0.100*		*64*	*32-130*			
LCS (W3C1825-BS1)					**Prepared: 03/21/23**	**Analyzed: 04/17/23**					
Endrin aldehyde	0.135	0.0019	0.050	ug/l	0.200		68	18-130			
Surrogate(s)											
Decachlorobiphenyl	*0.0990*			*ug/l*	*0.100*		*99*	*33-133*			
Tetrachloro-meta-xylene	*0.0553*			*ug/l*	*0.100*		*55*	*32-130*			
LCS Dup (W3C1825-BSD1)					**Prepared: 03/21/23**	**Analyzed: 04/17/23**					
Endrin aldehyde	0.160	0.0019	0.050	ug/l	0.200		80	18-130	17	30	
Surrogate(s)											
Decachlorobiphenyl	*0.105*			*ug/l*	*0.100*		*105*	*33-133*			
Tetrachloro-meta-xylene	*0.0709*			*ug/l*	*0.100*		*71*	*32-130*			

Hydrazine by LCMS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2019-BLK1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l							
LCS (W3C2019-BS1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.81	0.62	2.0	ug/l	20.0		14	50-150			Q-01
Matrix Spike (W3C2019-MS1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.11	0.62	2.0	ug/l	20.0	*ND*	11	50-150			Q-01
Matrix Spike Dup (W3C2019-MSD1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.45	0.62	2.0	ug/l	20.0	*ND*	12	50-150	15	30	Q-01

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Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2319-BLK1)					**Prepared: 03/28/23**	**Analyzed: 04/03/23**					
Chlorpyrifos	ND	0.0040	0.010	ug/l							
Diazinon	ND	0.0034	0.010	ug/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.316*			*ug/l*	*0.500*		*63*	*50-141*			
Triphenyl phosphate	*0.477*			*ug/l*	*0.500*		*95*	*63-200*			
LCS (W3C2319-BS1)					**Prepared: 03/28/23**	**Analyzed: 04/03/23**					
Chlorpyrifos	0.0223	0.0040	0.010	ug/l	0.0500		45	63-145			Q-02
Diazinon	0.0284	0.0034	0.010	ug/l	0.0500		57	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.294*			*ug/l*	*0.500*		*59*	*50-141*			
Triphenyl phosphate	*0.483*			*ug/l*	*0.500*		*97*	*63-200*			
Matrix Spike (W3C2319-MS1)	**Source: 3C23055-01**				**Prepared: 03/28/23**	**Analyzed: 04/03/23**					
Chlorpyrifos	0.0296	0.0040	0.010	ug/l	0.0500	*ND*	59	37-168			
Diazinon	0.0285	0.0034	0.010	ug/l	0.0500	*ND*	57	36-153			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.309*			*ug/l*	*0.500*		*62*	*50-141*			
Triphenyl phosphate	*0.533*			*ug/l*	*0.500*		*107*	*63-200*			
Matrix Spike Dup (W3C2319-MSD1)	**Source: 3C23055-01**				**Prepared: 03/28/23**	**Analyzed: 04/04/23**					
Chlorpyrifos	0.0229	0.0040	0.010	ug/l	0.0500	*ND*	46	37-168	25	30	
Diazinon	0.0264	0.0034	0.010	ug/l	0.0500	*ND*	53	36-153	8	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.256*			*ug/l*	*0.500*		*51*	*50-141*			
Triphenyl phosphate	*0.479*			*ug/l*	*0.500*		*96*	*63-200*			

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C1417-BLK1)					**Prepared & Analyzed: 03/16/23**						
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l							
Surrogate(s)											
1,2-Dichloroethane-d4	*50.0*			*ug/l*	*50.0*		*100*	*82-125*			
4-Bromofluorobenzene	*46.1*			*ug/l*	*50.0*		*92*	*88-108*			
Toluene-d8	*47.0*			*ug/l*	*50.0*		*94*	*92-112*			
LCS (W3C1417-BS1)					**Prepared & Analyzed: 03/16/23**						
2-Chloroethyl vinyl ether	51.2	0.19	5.0	ug/l	50.0		102	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*48.5*			*ug/l*	*50.0*		*97*	*82-125*			
4-Bromofluorobenzene	*50.9*			*ug/l*	*50.0*		*102*	*88-108*			
Toluene-d8	*51.9*			*ug/l*	*50.0*		*104*	*92-112*			
LCS Dup (W3C1417-BSD1)					**Prepared & Analyzed: 03/16/23**						
2-Chloroethyl vinyl ether	54.4	0.19	5.0	ug/l	50.0		109	0.1-305	6	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*51.3*			*ug/l*	*50.0*		*103*	*82-125*			
4-Bromofluorobenzene	*51.5*			*ug/l*	*50.0*		*103*	*88-108*			
Toluene-d8	*53.3*			*ug/l*	*50.0*		*107*	*92-112*			
Matrix Spike (W3C1417-MS1)	**Source: 3C15121-02**				**Prepared: 03/16/23**	**Analyzed: 03/17/23**					
2-Chloroethyl vinyl ether	58.1	0.19	5.0	ug/l	50.0	*ND*	116	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*51.7*			*ug/l*	*50.0*		*103*	*82-125*			
4-Bromofluorobenzene	*52.2*			*ug/l*	*50.0*		*104*	*88-108*			
Toluene-d8	*56.1*			*ug/l*	*50.0*		*112*	*92-112*			
Matrix Spike Dup (W3C1417-MSD1)	**Source: 3C15121-02**				**Prepared: 03/16/23**	**Analyzed: 03/17/23**					
2-Chloroethyl vinyl ether	56.4	0.19	5.0	ug/l	50.0	*ND*	113	0.1-305	3	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*49.7*			*ug/l*	*50.0*		*99*	*82-125*			
4-Bromofluorobenzene	*51.9*			*ug/l*	*50.0*		*104*	*88-108*			
Toluene-d8	*53.6*			*ug/l*	*50.0*		*107*	*92-112*			

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Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
Q-01	The recovery of this analyte in QC sample was outside control limits. Sample was justified as ND based on the low level standard at or below the reporting limit.
Q-02	Low recovery of this analyte in the QC sample. The analysis of the low level standard produced acceptable recovery indicating that the sample result might be accurately reported as Not Detected.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Analyses Accreditation Summary

Analyte	CAS #	Not By NELAP	ANAB ISO 17025
EPA 8315M in Water			
Monomethylhydrazine (MMH)	60-34-4	✓	

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

3C15075 eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210553.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131073-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/28/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230314-2 (570-131073-2)	3/14/23	11:10 Pacific		Water					X		2	See Attached Instructions
												For Virendra, preserve
												For Hydrazine - DI 5/15/23

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/14/23 1634	EC		3/14/23 16:34	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2 - 70276

4/27/2023

ICOC No:
570-210553

Containers

Count	Container Type	Preservative
5	Amber Glass 1 liter - unpreserved	None
5	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (EPA 608 - Pesticides/PCBs - PP list)	Level IV package, MDL, EQUIS 5C
1	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	525.2- 24 hour extraction for Diaznon and Chyloriphrous- level IV package needed.
1	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV package, MDL, EQUIS 5C
1, 3	SUBCONTRACT	SUB (VOCs-2CVE only (E624))	Level IV package, MDL, EQUIS 5C

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210553.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131073-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/28/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230314-2 (570-131073-2)	3/14/23	11:10 Pacific		Water					X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/14/23 1634	EC		3/14/23 1624	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2 - D27E

4/27/2023

Loc: 570
131073

570-131073 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Mark Dominick	Date: 3-14-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9806	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Weck Labs in Hacienda Heights, CA	E. coli (SM9221) Enthalby Analytical in Orange, CA	Cyanide (SM 4500-CN-E)
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly
BGBMP0003_20230314	3/14/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
TB_20230314-1	3/14/23	1110	TB	WM	3	N	N														x		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	2	6	5

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #: 22BJ6UX
Time of Readings: 1110
DO (mg/L): 5.02
pH: 6.52
Temp (°C/°F): 56.1
TRC (mg/L): 0.00
Checked by:
Date/Time: 1220 / 3-14-23

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1345	Received by: EC	Date/Time: 3/14/23 1345
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Received by: RC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.5/2.4 1.8/1.7 5C12

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/27/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICK	Date: 3.14.2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
BGBMP0003_20230314	3/14/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230314-2	3/14/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1315	Receiv	Date/Time: 3/14/23 1315
Relinquished by:	Company: ECI	Date/Time: 3/14/23 1805	Receiv	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131073-5

Login Number: 131073
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 11:44:54 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131073-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

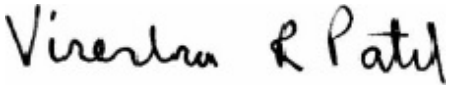
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-6

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131073-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131073-6

Comments
No additional comments.

Receipt
The samples were received on 3/14/2023 6:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.4º C.

Receipt Exceptions

TB_20230314-1 (570-131073-3). The laboratory did not receive 3x Vials 40ml HCL (Trip Blank)that was Listed on the Chain-of-Custody on the following sample # 3

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131073-1	BGMP0003_20230314	Water	03/14/23 11:10	03/14/23 18:05

aquatic bioassay & consulting laboratories, inc

March 31, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	BGBMP0003_20230314
DATE RECEIVED:	14 March - 2023
ABC LAB. NO.:	CSE0323.158

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = -7.88 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Report Date: 31 Mar-23 12:19 (p 1 of 1)
Test Code/ID: CSE0323.158 / 03-2194-2549

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	06-2260-9636	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	14 Mar-23 15:36	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	21 Mar-23 14:46	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 23h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-0777-1384	Code:	CSE0323.158	Project:	129095-020-001-06
Sample Date:	14 Mar-23 11:10	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	14 Mar-23 14:50	CAS (PC):		Station:	BGBMP0003_20230314
Sample Age:	4h (1.8 °C)	Client:	Eurofins Calscience		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
04-7762-7958	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
04-9096-5276	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits Lower	TAC Limits Upper	Overlap	Decision
04-7762-7958	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
04-9096-5276	Reproduction	Control Resp	24.1	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	24.1	23.17	25.03	20	27	0.4466	1.997	8.29%	0.00%
100		20	26	24.39	27.61	19	32	0.7678	3.434	13.21%	-7.88%

7d Survival Rate Detail

MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail

MD5: F97B1F85461502620057F7CC8E70B060

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	25	27	24	24	26	23	23	27	26
100		23	22	20	24	26	26	24	21	26	23
		25	25	27	29	28	29	25	26	22	24
		21	25	29	27	32	22	25	19	28	32

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	04-9096-5276	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	31 Mar-23 12:17	Analysis:	Parametric Bioequivalence-Two Sample	Status Level:	1
Edit Date:	30 Mar-23 13:46	MD5 Hash:	592E16EF0D31FD5CFE1FE14A1434A1D2	Editor ID:	002-375-739-9
Batch ID:	06-2260-9636	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	14 Mar-23 15:36	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	21 Mar-23 14:46	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 23h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-0777-1384	Code:	CSE0323.158	Project:	129095-020-001-06
Sample Date:	14 Mar-23 11:10	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	14 Mar-23 14:50	CAS (PC):		Station:	BGBMP0003_20230314
Sample Age:	4h (1.8 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	25	9.461	0.8562	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	24.1	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	36.1	36.1	1	4.576	0.0389	Significant Effect
Error	299.8	7.88947	38			
Total	335.9		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	4.366	7.353	0.0434	Equal Variances
	Mod Levene Equality of Variance Test	4.257	7.353	0.0460	Equal Variances
	Variance Ratio F Test	2.955	3.432	0.0227	Equal Variances
Distribution	Anderson-Darling A2 Test	0.5313	3.878	0.1783	Normal Distribution
	D'Agostino Kurtosis Test	0.6611	2.576	0.5086	Normal Distribution
	D'Agostino Skewness Test	0.4164	2.576	0.6771	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.6104	9.21	0.7370	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1208	0.1617	0.1443	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9717	0.9236	0.4068	Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	24.1	23.17	25.03	24	20	27	0.4466	8.29%	0.00%
100		20	26	24.39	27.61	25.17	19	32	0.7678	13.21%	-7.88%

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	25	27	24	24	26	23	23	27	26
100		23	22	20	24	26	26	24	21	26	23
		25	25	27	29	28	29	25	26	22	24
		21	25	29	27	32	22	25	19	28	32

Analysis ID:	04-9096-5276	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	31 Mar-23 12:17	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	30 Mar-23 13:46	**MD5 Hash:**	592E16EF0D31FD5CFE1FE14A1434A1D2	**Editor ID:**	002-375-739-9

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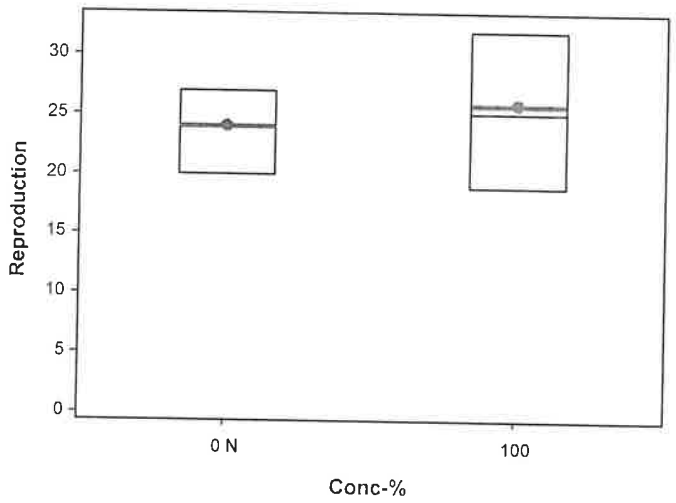
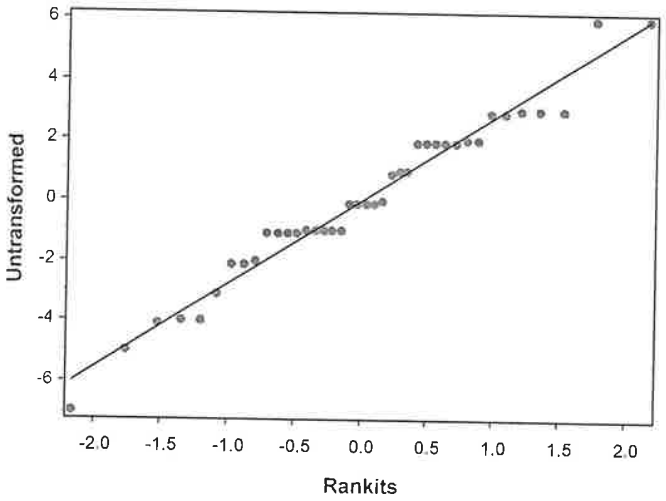




CETIS Analytical Report

Report Date: 31 Mar-23 12:19 (p 1 of 2)
Test Code/ID: CSE0323.158 / 03-2194-2549

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	04-7762-7958	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	30 Mar-23 13:48	Analysis:	Single 2x2 Contingency Table	Status Level:	1
Edit Date:	30 Mar-23 13:46	MD5 Hash:	E2FCA10CAEB5BD33B061F6901431A2E1	Editor ID:	002-375-739-9
Batch ID:	06-2260-9636	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	14 Mar-23 15:36	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	21 Mar-23 14:46	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 23h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-0777-1384	Code:	CSE0323.158	Project:	129095-020-001-06
Sample Date:	14 Mar-23 11:10	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	14 Mar-23 14:50	CAS (PC):		Station:	BGBMP0003_20230314
Sample Age:	4h (1.8 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

7d Survival Rate Binomials

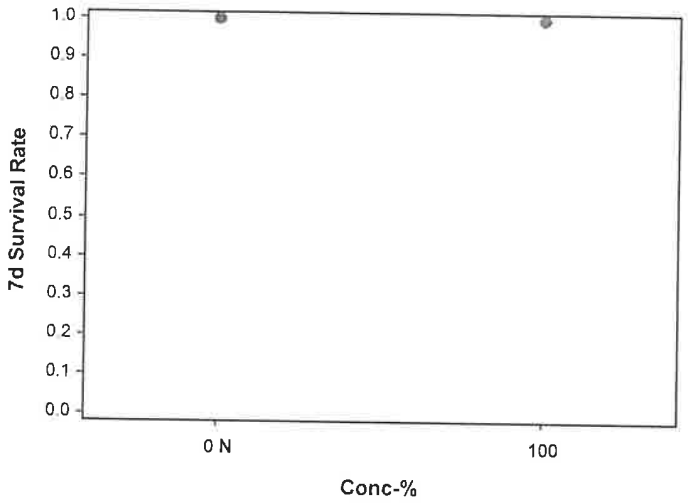
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	04-7762-7958	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	30 Mar-23 13:48	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	30 Mar-23 13:46	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	002-375-739-9

Graphics



CETIS Measurement Report

Report Date: 31 Mar-23 12:19 (p 1 of 1)
Test Code/ID: CSE0323.158 / 03-2194-2549

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	06-2260-9636	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	14 Mar-23 15:36	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	21 Mar-23 14:46	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 23h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	18-0777-1384	Code:	CSE0323.158	Project:	129095-020-001-06
Sample Date:	14 Mar-23 11:10	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	14 Mar-23 14:50	CAS (PC):		Station:	BGBMP0003_20230314
Sample Age:	4h (1.8 °C)	Client:	Eurofins Calscience		

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	65	65	65	65	65	0	0	0.00%	0
100		8	39	39	39	39	39	0	0	0.00%	0
Overall		16	52	44.85	59.15	39	65	3.357	13.43	25.82%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	366.5	363.7	369.3	362	370	0.4226	3.381	0.92%	0
100		8	165.6	162.9	168.3	160	169	0.4061	3.249	1.96%	0
Overall		16	266.1	210.8	321.4	160	370	25.95	103.8	39.01%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.787	7.658	7.917	7.6	8	0.01941	0.1553	1.99%	0
100		8	7.662	7.484	7.841	7.2	7.9	0.02667	0.2134	2.78%	0
Overall		16	7.725	7.623	7.827	7.2	8	0.04787	0.1915	2.48%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
100		8	41	41	41	41	41	0	0	0.00%	0
Overall		16	60.5	49.77	71.23	41	80	5.035	20.14	33.29%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.962	7.874	8.051	7.7	8	0.01326	0.1061	1.33%	0
100		8	7.95	7.905	7.995	7.9	8	0.00668	0.05344	0.67%	0
Overall		16	7.956	7.913	8	7.7	8	0.02035	0.08139	1.02%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24	24	24	24	24	0	0	0.00%	0
Overall		16	24	24	24	24	24	0	0	0.00%	0 (0%)

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8608	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA *	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube *	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
BGBMP0003_20230314	3/14/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230314-2	3/14/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Temp. deg. C = 1.8 °C
Added correction Error = ± 0.3 °C
Chlorine (mg/L) = <0.1
NH3 (mg/L) = <0.1

.158

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Retain for Client's ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

* Hand-delivered to ABC with copy of COC

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:

3-14-23 1450

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 7 March - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 15.00 ug/l
EC50 = 20.00 ug/l

ENDPOINT: REPRODUCTION

NOEC = 10.00 ug/l

IC25 = 14.63 ug/l
IC50 = 19.75 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
12-3601-0837	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	✓	10	30	17.32	---	1
18-1287-1922	Reproduction	Dunnett Multiple Comparison Test	✓	10	30	17.32	10.0%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
06-1569-8175	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	13	13	13	1
				EC20	14	14	14	
				EC25	15	15	15	
				EC40	18	18	18	
				EC50	20	20	20	
07-2699-2510	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	12.58	11.21	13	1
			✓	IC20	13.61	12.31	14	
			✓	IC25	14.63	13.42	15	
			✓	IC40	17.7	16.73	18	
			✓	IC50	19.75	18.94	20	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits Lower	Upper	Overlap	Decision
06-1569-8175	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
12-3601-0837	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
07-2699-2510	Reproduction	Control Resp	22.9	15	<<	Yes	Passes Criteria
18-1287-1922	Reproduction	Control Resp	22.9	15	<<	Yes	Passes Criteria
18-1287-1922	Reproduction	PMSD	0.1001	0.13	0.47	Yes	Below Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	22.9	21.57	24.23	20	26	0.5859	1.853	8.09%	0.00%
3		10	22.5	20.26	24.74	18	27	0.9916	3.136	13.94%	1.75%
5		10	22.3	20.95	23.65	20	25	0.5972	1.889	8.47%	2.62%
10		10	22.4	20.61	24.19	19	28	0.7916	2.503	11.18%	2.18%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

CETIS Summary Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

7d Survival Rate Detail

MD5: E68F14682D021D024F00396964E3E9BD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail

MD5: 2815D12133967AE436D4FC557F35CDBA

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Report Date: 22 Mar-23 13:33 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	18-1287-1922	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	Analysis:	Parametric-Control vs Treatments	Status Level:	1
Edit Date:	22 Mar-23 7:40	MD5 Hash:	2815D12133967AE436D4FC557F35CDBA	Editor ID:	007-730-798-8
Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	10	30	17.32	---	2.292	10.01%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	0.3722	2.133	2.292	CDF	0.5995	Non-Significant Effect
		5	18	0.5583	2.133	2.292	CDF	0.5168	Non-Significant Effect
		10	18	0.4652	2.133	2.292	CDF	0.5584	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	22.9	15	<<	Yes	Passes Criteria
PMSD	0.1001	0.13	0.47	Yes	Below Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.075	0.691667	3	0.1198	0.9479	Non-Significant Effect
Error	207.9	5.775	36			
Total	209.975		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	3.337	11.34	0.3425	Equal Variances
	Levene Equality of Variance Test	1.545	4.377	0.2195	Equal Variances
	Mod Levene Equality of Variance Test	1.103	4.377	0.3604	Equal Variances
Distribution	Anderson-Darling A2 Test	0.2615	3.878	0.7332	Normal Distribution
	D'Agostino Kurtosis Test	0.1221	2.576	0.9028	Normal Distribution
	D'Agostino Skewness Test	0.9793	2.576	0.3274	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.974	9.21	0.6145	Normal Distribution
	Kolmogorov-Smirnov D Test	0.08088	0.1617	0.7382	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9833	0.9236	0.8103	Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	22.9	21.57	24.23	22.25	20	26	0.5859	8.09%	0.00%
3		10	22.5	20.26	24.74	22	18	27	0.9916	13.94%	1.75%
5		10	22.3	20.95	23.65	22.6	20	25	0.5972	8.47%	2.62%
10		10	22.4	20.61	24.19	22.75	19	28	0.7916	11.18%	2.18%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

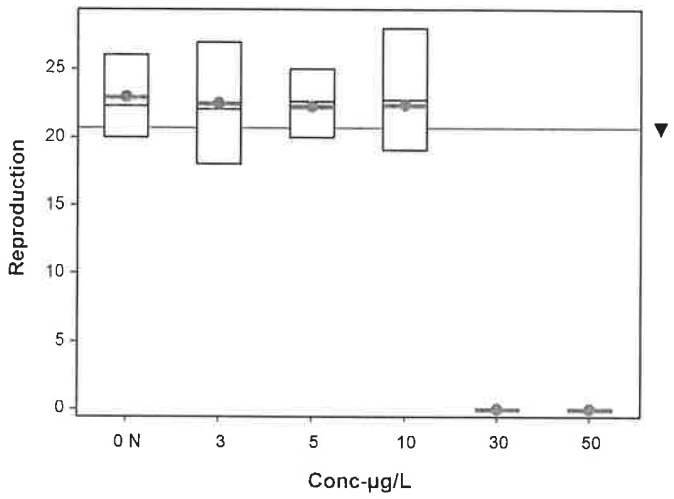
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

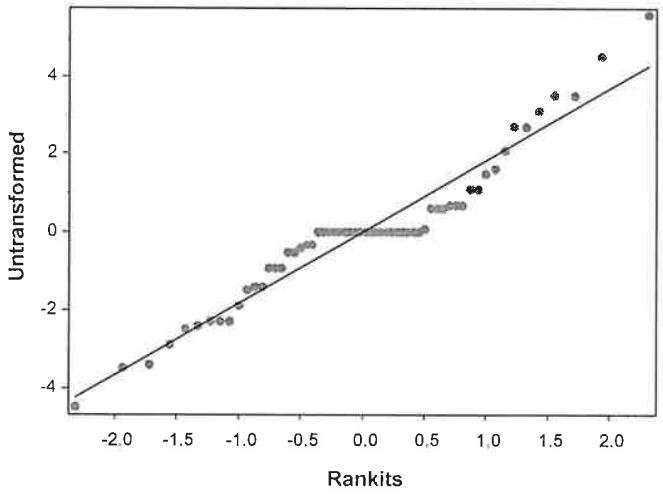
Analysis ID:	18-1287-1922	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	2815D12133967AE436D4FC557F35CDBA	**Editor ID:**	007-730-798-8

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Graphics





CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	06-1569-8175	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	007-730-798-8
Batch ID:	04-0989-8037	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	07 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Mar-23 14:53	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	01-9737-1339	**Code:**	CER030723	**Project:**	REF TOX
Sample Date:	07 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	13	13	13
EC20	14	14	14
EC25	15	15	15
EC40	18	18	18
EC50	20	20	20

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣA/ΣB	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

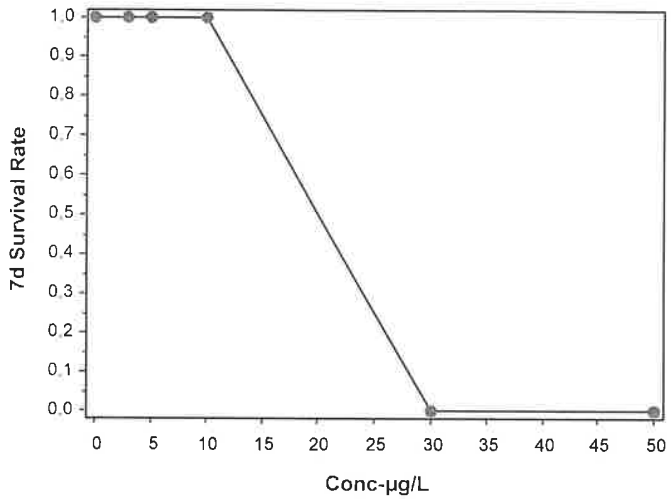
7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	06-1569-8175	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	007-730-798-8

Graphics



Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-2699-2510	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	22 Mar-23 7:40	MD5 Hash:	2815D12133967AE436D4FC557F35CDBA	Editor ID:	007-730-798-8
Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	401085	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	22.9	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	12.58	11.21	13
IC20	13.61	12.31	14
IC25	14.63	13.42	15
IC40	17.7	16.73	18
IC50	19.75	18.94	20

Reproduction Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	22.9	22.25	20	26	8.09%	0.00%	22.9	0.00%
3		10	22.5	22	18	27	13.94%	1.75%	22.5	1.75%
5		10	22.3	22.6	20	25	8.47%	2.62%	22.35	2.40%
10		10	22.4	22.75	19	28	11.18%	2.18%	22.35	2.40%
30		10	0	0	0	0	---	100.00%	0	100.00%
50		10	0	0	0	0	---	100.00%	0	100.00%

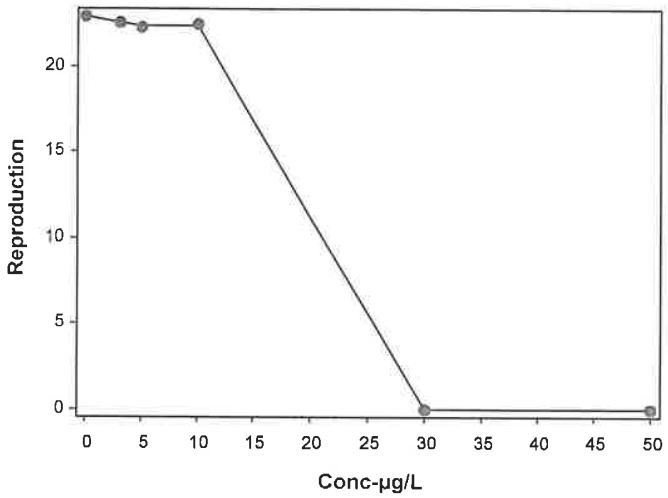
Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-2699-2510	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	2815D12133967AE436D4FC557F35CDBA	**Editor ID:**	007-730-798-8

Graphics



CETIS Analytical Report

Report Date: 22 Mar-23 13:33 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-3601-0837	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	22 Mar-23 7:40	MD5 Hash:	E68F14682D021D024F00396964E3E9BD	Editor ID:	007-730-798-8
Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0000	Exact	2.7E-05	Significant Effect
		50*	0.0000	Exact	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		0	10	10	0.0000	1.0000	100.00%
50		0	10	10	0.0000	1.0000	100.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

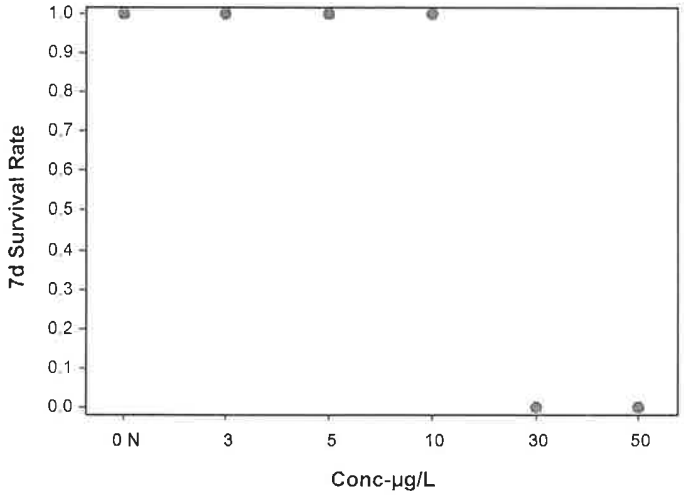
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-3601-0837	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	007-730-798-8

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Report Date: 22 Mar-23 13:34 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	04-0989-8037	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**		
Start Date:	07 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	14 Mar-23 14:53	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24
Sample ID:	01-9737-1339	**Code:**	CER030723	**Project:**	REF TOX	
Sample Date:	07 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant	
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX	
Sample Age:	---	**Client:**	ABC Labs			

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	63	63	63	63	63	0	0	0.00%	0
50		4	62	62	62	62	62	0	0	0.00%	0
Overall		12	62.67	62.35	62.98	62	63	0.1421	0.4924	0.79%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.5	370.6	376.4	369	379	0.4278	3.423	0.92%	0
3		8	369.2	366.6	371.9	362	373	0.3939	3.151	0.85%	0
5		8	367.2	364.7	369.8	360	369	0.3824	3.059	0.83%	0
10		8	366.6	363.9	369.4	359	369	0.4115	3.292	0.90%	0
30		6	363.7	360.1	367.3	357	367	0.5741	3.445	0.95%	0
50		3	361	352	370	357	364	1.202	3.606	1.00%	0
Overall		41	367.8	366.3	369.3	357	379	0.7447	4.769	1.30%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.763	7.495	8.03	7	8	0.04005	0.3204	4.13%	0
3		8	7.738	7.506	7.969	7.1	8	0.03468	0.2774	3.59%	0
5		8	7.712	7.454	7.971	7	8	0.03864	0.3091	4.01%	0
10		8	7.738	7.477	7.998	7	8	0.03892	0.3114	4.02%	0
30		6	7.8	7.706	7.894	7.7	7.9	0.01491	0.08944	1.15%	0
50		3	7.8	7.552	8.048	7.7	7.9	0.03333	0.1	1.28%	0
Overall		41	7.751	7.669	7.833	7	8	0.04059	0.2599	3.35%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	96	96	96	96	96	0	0	0.00%	0
50		4	99	99	99	99	99	0	0	0.00%	0
Overall		12	97	96.06	97.94	96	99	0.4264	1.477	1.52%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8	8	8	8	8	0	0	0.00%	0
3		8	8	8	8	8	8	0	0	0.00%	0
5		8	8	8	8	8	8	0	0	0.00%	0
10		8	7.975	7.936	8.014	7.9	8	0.005786	0.04629	0.58%	0
30		6	7.95	7.893	8.007	7.9	8	0.009127	0.05476	0.69%	0
50		3	7.967	7.823	8.11	7.9	8	0.01924	0.05773	0.72%	0
Overall		41	7.985	7.974	7.997	7.9	8	0.005589	0.03578	0.45%	0 (0%)

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		6	24	24	24	24	24	0	0	0.00%	0
50		3	24	24	24	24	24	0	0	0.00%	0
Overall		41	24	24	24	24	24	0	0	0.00%	0 (0%)

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210553.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131073-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/28/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230314-2 (570-131073-2)	3/14/23	11:10 Pacific		Water					X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/14/23 1634	EC		3/14/23 1624	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2 - D27E

4/9/2023

Loc: 570
131073

570-131073 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Mark Dominick	Date: 3-14-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9806	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Weck Labs in Hacienda Heights, CA	E. coli (SM9221) Enthalby Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
BGBMP0003_20230314	3/14/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
TB_20230314-1	3/14/23	1110	TB	WM	3	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	2	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings

Meter Serial #: 22BJ6UX

Time of Readings: 1110

DO (mg/L): 5.02

pH: 6.52

Temp (°C/°F): 56.1

TRC (mg/L): 0.00

Checked by:

Date/Time: 1220 / 3-14-23

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1345	Received by: EC	Date/Time: 3/14/23 1345
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Received by: RC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.5/2.4 1.8/1.7 5C12

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/9/2023

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

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Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARC DOMINICI	Date: 3.14.2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
BGBMP0003_20230314	3/14/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230314-2	3/14/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1315	Receiv	Date/Time: 3/14/23 1315
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Receiv EC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131073-6

Login Number: 131073
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:35:04 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131073-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

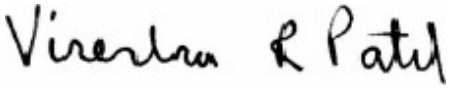
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/9/2023 10:35:04 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Method Summary 7
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-7

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131073-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131073-7

Comments
No additional comments.

Receipt
The samples were received on 3/14/2023 6:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.4º C.

Receipt Exceptions

TB_20230314-1 (570-131073-3). The laboratory did not receive 3x Vials 40ml HCL (Trip Blank)that was Listed on the Chain-of-Custody on the following sample # 3

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2 - "Wastewater" matrix: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-7

Client Sample ID: BGMP0003_20230314 **Lab Sample ID: 570-131073-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-7

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131073-1	BGMP0003_20230314	Water	03/14/23 11:10	03/14/23 18:05

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322306876
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/16/2023
Analyzed: 03/27/2023

Proj: 570-210724.1/ 570-131073-7/ 57014595/ Boeing SSFL ISRA and BMP - NEW

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS				
					Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
							MFL (million fibers per liter)		
BGMP0003_20230314 (570-131073-1) 322306876-0001	3/16/2023 02:30 PM	1	1288	0.2580	≥ 0.5 µm	None Detected	ND	5.00	<5.00	0.00 - 18.00
					> 10 µm only	None Detected	ND	5.00	<5.00	0.00 - 18.00

Collection Date/Time: *03/14/2023 11:10 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Feng Liang (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 03/30/2023 09:47:35

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

#322306876

eurofins | Environment Testing

4/9/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210724.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131073-7
Address: 520 Mission Street, ,	Due Date Requested: 4/4/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

0.8 g

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: (Fx)

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	03/15/23 14:15	EC	Annette McKissack	03/16/23 11:00	CA Testing
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

OrderID: 322306876

ICOC No:
570-210724

#322306876

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Level IV package needed. Screen as Wastewater matrix

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210553.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131073-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/28/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230314-2 (570-131073-2)	3/14/23	11:10 Pacific		Water					X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/14/23 1634	EC		3/14/23 1624	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2 - D27E

Loc: 570
131073

570-131073 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Mark Dominick	Date: 3-14-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9806	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Weck Labs in Hacienda Heights, CA	E. coli (SM9221) Enthalby Analytical in Orange, CA	Cyanide (SM 4500-CN-E)
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly
BGBMP0003_20230314	3/14/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
TB_20230314-1	3/14/23	1110	TB	WM	3	N	N														x		
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	2	6	5

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #: 22BJ6UX
Time of Readings: 1110
DO (mg/L): 5.02
pH: 6.52
Temp (°C/°F): 56.1
TRC (mg/L): 0.00
Checked by:
Date/Time: 1220 / 3-14-23

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1345	Received by: EC	Date/Time: 3/14/23 1345
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Received by: RC	Date/Time: 3/14/23 1805
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.5/2.4 1.8/1.7 5C12

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/9/2023

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARC DOMINICI	Date: 3.14.2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM232OB (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM232OB (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
BGBMP0003_20230314	3/14/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230314-2	3/14/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1315	Receiv		Date/Time: 3/14/23 1315
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Receiv	EC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131073-7

Login Number: 131073
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/19/2023 3:23:26 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131073-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

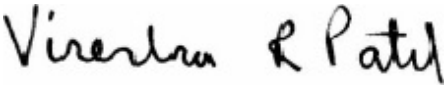
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131073-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131073-8

Comments
No additional comments.

Receipt
The samples were received on 3/14/2023 6:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.7º C and 2.4º C.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 606931
The matrix spike (MS) recoveries for Gross Alpha were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.
(570-131459-Q-1-G MS)

Method 900.0: Gross Alpha and Gross Beta batch 606931
The detection goal was not met for the sample duplicate. However the purpose of the DUP is to demonstrate batch precision. The precision was within control limits demonstrating no adverse effect from the discrepancy.

(570-131459-Q-1-I DU)

Method 900.0: Gross Alpha and Gross Beta batch 606931
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGMP0003_20230314 (570-131073-1), (LCS 160-606931/2-A), (LCSB 160-606931/3-A), (MB 160-606931/1-A), (570-131459-Q-1-F), (570-131459-Q-1-I DU), (570-131459-Q-1-G MS) and (570-131459-Q-1-H MSBT)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Job ID: 570-131073-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGMP0003_20230314 (570-131073-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGMP0003_20230314 (570-131073-1) and (570-131073-AT-1-C DU)

Methods 903.0, 9315: Radium-226 prep batch 160-604894:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGMP0003_20230314 (570-131073-1), (LCS 160-604894/2-A), (LCSD 160-604894/3-A) and (MB 160-604894/1-A)

Methods 903.0, 9315: Radium-226 batch 605215
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Job ID: 570-131073-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

BGMP0003_20230314 (570-131073-1), (LCS 160-605215/2-A), (LCSD 160-605215/3-A) and (MB 160-605215/1-A)

Methods 904.0, 9320: Radium-228 batch 605216
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGMP0003_20230314 (570-131073-1), (LCS 160-605216/2-A), (LCSD 160-605216/3-A) and (MB 160-605216/1-A)

Methods 904.0, 9320: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.
Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Method 905: Strontium-90 batch 605090
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGMP0003_20230314 (570-131073-1), (LCS 160-605090/2-A), (MB 160-605090/1-A), (380-41106-B-1-A) and (380-41106-C-1-A DU)

Method 905: Strontium-90 batch 606565
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGMP0003_20230314 (570-131073-1), (LCS 160-606565/2-A), (LCSD 160-606565/3-A) and (MB 160-606565/1-A)

Method 906.0: Tritium 606188
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGMP0003_20230314 (570-131073-1), (LCS 160-606188/2-A), (MB 160-606188/1-A), (570-130861-J-1-A), (570-130861-J-1-B DU), (570-130862-I-1-A) and (570-130862-I-1-B MS)

Method A-01-R: Isotopic Uranium batch 605729
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGMP0003_20230314 (570-131073-1), (LCS 160-605729/2-A), (MB 160-605729/1-A), (570-131449-AX-1-B) and (570-131449-AX-1-C DU)

Method A-01-R: Isotopic Uranium batch 606930
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGMP0003_20230314 (570-131073-1), (LCS 160-606930/2-A), (MB 160-606930/1-A), (570-131940-R-1-E) and (570-131940-R-1-F DU)

Method ExtChrom: Uranium Prep Batch 160-605729:
The following sample was prepared at a reduced aliquot due to discoloration: BGMP0003_20230314 (570-131073-1).

Method ExtChrom: Uranium Prep Batch 160-606930:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: BGMP0003_20230314 (570-131073-1).

Method PrecSep_0: Radium-228 Prep Batch 160-604896

The following sample was prepared at a reduced aliquot due to Matrix: BGMP0003_20230314 (570-131073-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch

Job ID: 570-131073-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

precision.

Method PrecSep_0: Radium 228 Prep Batch 160-605216

The following sample was prepared at a reduced aliquot due to Matrix: BGMP0003_20230314 (570-131073-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-604894

The following sample was prepared at a reduced aliquot due to Matrix: BGMP0003_20230314 (570-131073-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-605215

The following sample was prepared at a reduced aliquot due to Matrix: BGMP0003_20230314 (570-131073-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium 90 Prep Batch 160-605090

The following sample was prepared at a reduced aliquot due to Matrix: BGMP0003_20230314 (570-131073-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 606565

The following sample was prepared at a reduced aliquot due to Matrix: BGMP0003_20230314 (570-131073-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Client Sample ID: BGMP0003_20230314 **Lab Sample ID: 570-131073-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	2.8/		1.57	1.63	3.00	2.06	pCi/L	04/11/23 15:16	04/14/23 05:11	1
Gross Beta	1./ 0		0.720	0.742	4.00	0.960	pCi/L	04/11/23 15:16	04/14/23 05:11	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.910	U	0.774	0.781	3.00	1.17	pCi/L	04/11/23 15:16	04/14/23 05:11	1
Gross Beta	**2.67**		0.750	0.818	4.00	0.835	pCi/L	04/11/23 15:16	04/14/23 05:11	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: EPA 901.1 - Cesium 127 & Other Gamma Emitters (GS)

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-0.340	U	9.40	9.40	20.0	11.7	pCi/L	03/22/23 16:26	03/30/23 09:38	1
Potassium-40	78.7	U	154	154		161	pCi/L	03/22/23 16:26	03/30/23 09:38	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: EPA 901.1 - Cesium 127 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.35	U	7.11	7.11	20.0	8.82	pCi/L	03/28/23 16:33	04/12/23 05:17	1
Potassium-40	-26.0	U	90.2	90.2		124	pCi/L	03/28/23 16:33	04/12/23 05:17	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: EPA 902.0 - Radium-668 (GFPC)

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-668	0.622		0.142	0.143	1.00	0.176	pCi/L	03/24/23 10:26	04/18/23 12:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*567.*		*30 - 110*	*03/62/63 1095:*	*02/15/63 16965*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: EPA 902.0 - Radium-668 (GFPC) - Dissolved

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0875	U	0.200	0.200	1.00	0.366	pCi/L	03/28/23 09:34	04/19/23 09:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*5076*		*30 - 110*	*03/65/63 0493 2*	*02/14/63 0492 4*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: EPA 903.0 - Radium-66/ (GFPC)

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.444	U	0.588	0.589	1.00	0.982	pCi/L	03/24/23 10:45	04/14/23 18:18	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*567.*		*30 - 110*	*03/62/63 109 2.*	*02/12/63 159 5*	*1*
8 Carrier	*507Y*		*30 - 110*	*03/62/63 109 2.*	*02/12/63 159 5*	*1*

Method: EPA 903.0 - Radium-66/ (GFPC) - Dissolved

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0500	U	0.401	0.401	1.00	0.746	pCi/L	03/28/23 09:54	04/18/23 12:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*5076*		*30 - 110*	*03/65/63 049 2*	*02/15/63 169l6*	*1*
8 Carrier	*5. 76*		*30 - 110*	*03/65/63 049 2*	*02/15/63 169l6*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.0806	U	0.350	0.350	3.00	0.617	pCi/L	03/27/23 13:47	04/10/23 16:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*5376*		*30 - 110*	*03/6Y/63 139Y*	*02/10/63 1: 9Y*	*1*
8 Carrier	*YY72*		*30 - 110*	*03/6Y/63 139Y*	*02/10/63 1: 9Y*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.381	U	0.575	0.575	3.00	0.961	pCi/L	04/07/23 11:12	04/17/23 19:03	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*5Y7Y*		*30 - 110*	*02/0Y/63 119I6*	*02/1Y/63 149*03*	*1*
8 Carrier	*Y373*		*30 - 110*	*02/0Y/63 119I6*	*02/1Y/63 149*03*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: EPA 908.0 - Tritium, Total (LSC)

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	114	U	142	142	500	233	pCi/L	04/05/23 13:01	04/06/23 13:41	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.22/		0.289	0.290	1.00	0.307	pCi/L	04/11/23 15:09	04/13/23 16:13	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: BGMP0002460620213
Date Collected: 02x13x62 11:10
Date Received: 02x13x62 1/ :05

Lab Sample ID: 570-121072-1
MatriW _ ater

Analyte	Result	Qualifier	Count Uncert. (6σ+x)	Total Uncert. (6σ+x)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.256	U	0.239	0.240	1.00	0.272	pCi/L	03/30/23 16:34	04/03/23 20:58	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-131073-1	BGMP0003_20230314	82.5
LCS 160-604894/2-A	Lab Control Sample	90.5
LCS 160-605215/2-A	Lab Control Sample	94.8
LCSD 160-604894/3-A	Lab Control Sample Dup	84.0
LCSD 160-605215/3-A	Lab Control Sample Dup	91.0
MB 160-604894/1-A	Method Blank	87.1
MB 160-605215/1-A	Method Blank	94.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-131073-1	BGMP0003_20230314	80.2

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131073-1	BGMP0003_20230314	82.5	80.7
LCS 160-604896/2-A	Lab Control Sample	90.5	89.7
LCS 160-605216/2-A	Lab Control Sample	94.8	81.9
LCSD 160-604896/3-A	Lab Control Sample Dup	84.0	89.7
LCSD 160-605216/3-A	Lab Control Sample Dup	91.0	80.7
MB 160-604896/1-A	Method Blank	87.1	89.0
MB 160-605216/1-A	Method Blank	94.3	79.3

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131073-1	BGMP0003_20230314	80.2	85.2

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131073-8
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131073-1	BGMP0003_20230314	83.2	77.4
LCS 160-605090/2-A	Lab Control Sample	83.8	75.9
LCS 160-606565/2-A	Lab Control Sample	86.3	77.0
LCSD 160-606565/3-A	Lab Control Sample Dup	85.1	69.9
MB 160-605090/1-A	Method Blank	83.0	70.3
MB 160-606565/1-A	Method Blank	86.6	81.9

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131073-1	BGMP0003_20230314	87.7	73.3

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-605729/2-A	Lab Control Sample	38.1
LCS 160-606930/2-A	Lab Control Sample	90.3
MB 160-605729/1-A	Method Blank	46.2
MB 160-606930/1-A	Method Blank	83.9

Tracer/Carrier Legend

U-232 = Uranium-232

QC Sample Results

6 Client HCay & Adrchler, Job ID: 570-121072-4
. obPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-60695121-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal2TA**
Analysis Batch: 60N7(1 — **Wrep Batch: 606951**

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2F	Potal f ncert. o(+) 2F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
MobGG&GscH	-0,0184U	p	0,274	0,274	2,00	0,778	s6 ljF	03j11j92 15:1U	03j13j92 90:18	1
MobGGSi nH	1,540		0,U09	0,U99	3,00	0,417	s6 ljF	03j11j92 15:1U	03j13j92 90:18	1

Lab Sample ID: LCS 160-60695122 -A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal2TA**
Analysis Batch: 60N573 — **Wrep Batch: 606951**

Analyte	Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2F	RL	MDC	f nit	4 Rec	4 Rec Limits
MobGG&GscH	50,5	54,50		4,30	2,00	1,80	s6 ljF	11U	75 - 195

Lab Sample ID: LCSB 160-60695125-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal2TA**
Analysis Batch: 60N573 — **Wrep Batch: 606951**

Analyte	Spike Added	LCSB Result	LCSB Qual	Potal f ncert. o(+) 2F	RL	MDC	f nit	4 Rec	4 Rec Limits
MobGGSi nH	72,3	79,74		7,41	3,00	0,45U	s6 ljF	88	75 - 195

Method: 901.1 - Cesium 15N & Other Gamma Emitters oGSF

Lab Sample ID: MB 160-607N5321-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal2TA**
Analysis Batch: 6035N8 — **Wrep Batch: 607N53**

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2F	Potal f ncert. o(+) 2F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
6 i GEu -127	5,575	p	11,5	11,5	90,0	13,5	s6 ljF	02j99j92 1U:9U	02j98j92 91:95	1
. orHGGEu -30	-128,8	p	140	140		945	s6 ljF	02j99j92 1U:9U	02j98j92 91:95	1

Lab Sample ID: LCS 160-607N532 -A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal2TA**
Analysis Batch: 6035N6 — **Wrep Batch: 607N53**

Analyte	Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2F	RL	MDC	f nit	4 Rec	4 Rec Limits
&u i drlEu -931	125000	125500		1U100		332	s6 ljF	100	75 - 195
6 i GEu -127	30400	39170		5020	90,0	105	s6 ljF	102	75 - 195
6 obHCu-U0	17400	14UU0		9920		53,4	s6 ljF	105	75 - 195

Lab Sample ID: MB 160-603(8521-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal2TA**
Analysis Batch: 60N160 — **Wrep Batch: 603(85**

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2F	Potal f ncert. o(+) 2F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
6 i GEu -127	9,782	p	U,U7	U,U4	90,0	7,38	s6 ljF	02j94j92 1U:22	03j19j92 03:01	1
. orHGGEu -30	97,15	p	49,U	49,7		10U	s6 ljF	02j94j92 1U:22	03j19j92 03:01	1

Method: 901.1 - Cesium 15N & Other Gamma Emitters oGSFoContinuedF

Lab Sample ID: LCS 160-603(852(-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal2T A**
Analysis Batch: 60N188 — **Wrep Batch: 603(85**

Analyte	Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits
&u i drlEu -931	125000	128700		1UU00		5U9	s6 ljF	102	75 - 195
6 i GEu -127	30400	28U80		3730	90,0	15U	s6 ljF	87	75 - 195
6 obHCu-U0	17700	17990		90U0		74,1	s6 ljF	87	75 - 195

Lab Sample ID: 3N0-1510N5-1 Df — **Client Sample ID: BGMW0005_(0(50517**
Matri/ : x ater — **Wrep Pype: Dissolved**
Analysis Batch: 60N190 — **Wrep Batch: 603(85**

Analyte	Sample Result	Sample Qual	Df Result	Df Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	RER	RER Limit
6 i GEu -127	-1,25	p	-0,7UU1	p	4,1U	90,0	8,U0	s6 ljF	0,03	1
. orHGGEu -30	-9U,0	p	10,72	p	85,5		101	s6 ljF	0,90	1

Method: 905.0 - Radium-((6 oGz WCF

Lab Sample ID: MB 160-60789721-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal2T A**
Analysis Batch: 60N90(— **Wrep Batch: 607897**

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2-F	Potal f ncert. o(+) 2-F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
L HAlEu -99U	0,0010UU	p	0,0707	0,0707	1,00	0,134	s6 ljF	02j93j92 10:9U	03j14j92 04:2U	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*4781*		*30 - 110*	*032/ 62/ 3 109/ :*	*062142/ 3 0493:*	*1*

Lab Sample ID: LCS 160-6078972(-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal2T A**
Analysis Batch: 60N90(— **Wrep Batch: 607897**

Analyte	Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits
L HAlEu -99U	11,2	8,939		1,03	1,00	0,138	s6 ljF	49	75 - 195

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*508*		*30 - 110*

Lab Sample ID: LCSD 160-60789725-A — **Client Sample ID: Lab Control Sample Dup**
Matri/ : x ater — **Wrep Pype: Potal2T A**
Analysis Batch: 60N90(— **Wrep Batch: 607897**

Analyte	Spike Added	LCSD Result	LCSD Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits	RER	RER Limit
L HAlEu -99U	11,2	8,198		1,03	1,00	0,115	s6 ljF	41	75 - 195	0,05	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*4680*		*30 - 110*

Method: 905.0 - Radium-((6 oGz WCFo ContinuedF

Lab Sample ID: MB 160-603(1321-A
Matri/ : x ater
Analysis Batch: 60805N

Client Sample ID: Method Blank
Wrep Pype: Potal2T A
Wrep Batch: 603(13

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2-F	Potal f ncert. o(+) 2-F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
L HAIEu -99U	-0,02007	p	0,10U	0,10U	1,00	0,930	s6 ljF	02j94j92 08:23	03j18j92 08:34	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*5683*		*30 - 110*	*032/ 42/ 3 0596.*	*062152/ 3 0596.4*	*1*

Lab Sample ID: LCS 160-603(132(-A
Matri/ : x ater
Analysis Batch: 60805N

Client Sample ID: Lab Control Sample
Wrep Pype: Potal2T A
Wrep Batch: 603(13

Analyte			Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits		
L HAIEu -99U			11,2	8,884		1,99	1,00	0,990	s6 ljF	44	75 - 195		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*5684*		*30 - 110*

Lab Sample ID: LCSD 160-603(1325-A
Matri/ : x ater
Analysis Batch: 60805N

Client Sample ID: Lab Control Sample Dup
Wrep Pype: Potal2T A
Wrep Batch: 603(13

Analyte			Spike Added	LCSD Result	LCSD Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits	RER	RER Limit
L HAIEu -99U			11,2	11,14		1,23	1,00	0,141	s6 ljF	88	75 - 195	0,3U	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*5180*		*30 - 110*

Method: 907.0 - Radium-((8 oGz WCF

Lab Sample ID: MB 160-60789621-A
Matri/ : x ater
Analysis Batch: 60N7(1

Client Sample ID: Method Blank
Wrep Pype: Potal2T A
Wrep Batch: 607896

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2-F	Potal f ncert. o(+) 2-F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
L HAIEu -994	-0,12UU	p	0,948	0,948	1,00	0,582	s6 ljF	02j93j92 10:35	03j13j92 14:13	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*4781*		*30 - 110*	*032/ 62/ 3 1096.*	*062162/ 3 1491.6*	*1*
Y Carrier	*4580*		*30 - 110*	*032/ 62/ 3 1096.*	*062162/ 3 1491.6*	*1*

Method: 907.0 - Radium-((8 oGz WCFo ContinuedF

Lab Sample ID: LCS 160-6078962(-A
Matri/ : x ater
Analysis Batch: 60N7(1

Client Sample ID: Lab Control Sample
Wrep Pype: Potal2T A
Wrep Batch: 607896

Analyte			Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits		
L HAIEu -994			4,02	4,551		1,95	1,00	0,U00	s6 ljF	10U	75 - 195		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*508*		*30 - 110*
Y Carrier	*4587*		*30 - 110*

Lab Sample ID: LCSD 160-60789625-A
Matri/ : x ater
Analysis Batch: 60N7(1

Client Sample ID: Lab Control Sample Dup
Wrep Pype: Potal2T A
Wrep Batch: 607896

Analyte			Spike Added	LCSD Result	LCSD Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits	RER	RER Limit
L HAIEu -994			4,02	4,158		1,97	1,00	0,772	s6 ljF	109	75 - 195	0,1U	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*4680*		*30 - 110*
Y Carrier	*4587*		*30 - 110*

Lab Sample ID: MB 160-603(1621-A
Matri/ : x ater
Analysis Batch: 60N90(

Client Sample ID: Method Blank
Wrep Pype: Potal2T A
Wrep Batch: 603(16

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2-F	Potal f ncert. o(+) 2-F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
L HAIEu -994	0,3202	p	0,225	0,227	1,00	0,513	s6 ljF	02j94j92 08:53	03j14j92 19:0U	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*5683*		*30 - 110*	*032/ 42/ 3 059 6*	*062142/ 3 1/ 90:*	*1*
Y Carrier	*7583*		*30 - 110*	*032/ 42/ 3 059 6*	*062142/ 3 1/ 90:*	*1*

Lab Sample ID: LCS 160-603(162(-A
Matri/ : x ater
Analysis Batch: 60N903

Client Sample ID: Lab Control Sample
Wrep Pype: Potal2T A
Wrep Batch: 603(16

Analyte			Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits		
L HAIEu -994			4,09	U,801		1,02	1,00	0,35U	s6 ljF	4U	75 - 195		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*5684*		*30 - 110*
Y Carrier	*4185*		*30 - 110*

Method: 907.0 - Radium-((8 oGz WCFo Continued F

Lab Sample ID: LCSD 160-603(1625-A **Client Sample ID: Lab Control Sample Dup**
Matri/ : x ater **Wrep Pype: Potal2T A**
Analysis Batch: 60N903 **Wrep Batch: 603(16**

Analyte			Spike Added	LCSD Result	LCSD Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits	RER	RER Limit
L HAlEu -994			4,09	U,197		0,879	1,00	0,521	s6 ljF	7U	75 - 195	0,28	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*5180*		*30 - 110*
Y Carrier	*4087*		*30 - 110*

Method: 903 - Strontium-90 oGz WCF

Lab Sample ID: MB 160-6030902 1-A **Client Sample ID: Method Blank**
Matri/ : x ater **Wrep Pype: Potal2T A**
Analysis Batch: 606669 **Wrep Batch: 603090**

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2-F	Potal f ncert. o(+) 2-F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
/ nobenlEu -80	0,08409	p	0,183	0,183	2,00	0,222	s6 ljF	02j97j92 12:37	03j10j92 1U:19	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*4380*		*30 - 110*	*032/ 72/ 3 13967*	*062102/ 3 1: 91/*	*1*
Y Carrier	*7083*		*30 - 110*	*032/ 72/ 3 13967*	*062102/ 3 1: 91/*	*1*

Lab Sample ID: LCS 160-6030902(-A **Client Sample ID: Lab Control Sample**
Matri/ : x ater **Wrep Pype: Potal2T A**
Analysis Batch: 6066N1 **Wrep Batch: 603090**

Analyte			Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits		
/ nobenlEu -80			7,23	7,143		0,400	2,00	0,217	s6 ljF	84	75 - 195		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*4384*		*30 - 110*
Y Carrier	*7. 85*		*30 - 110*

Lab Sample ID: MB 160-6063632 1-A **Client Sample ID: Method Blank**
Matri/ : x ater **Wrep Pype: Potal2T A**
Analysis Batch: 60N871 **Wrep Batch: 606363**

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2-F	Potal f ncert. o(+) 2-F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
/ nobenlEu -80	0,1U75	p	0,903	0,903	2,00	0,227	s6 ljF	03j07j92 11:19	03j17j92 18:02	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*4: 8*		*30 - 110*	*062072/ 3 1191/*	*062172/ 3 15903*	*1*
Y Carrier	*4185*		*30 - 110*	*062072/ 3 1191/*	*062172/ 3 15903*	*1*

Method: 903 - Strontium-90 oGzWCFoContinuedF

Lab Sample ID: LCS 160-6063632(-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal2TA**
Analysis Batch: 60N871 — **Wrep Batch: 606363**

Analyte			Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits		
/ mbenlEu -80			7,23	7,570		0,452	2,00	0,205	s6 ljF	102	75 - 195		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*4: 83*		*30 - 110*
Y Carrier	*7780*		*30 - 110*

Lab Sample ID: LCSD 160-60636325-A — **Client Sample ID: Lab Control Sample Dup**
Matri/ : x ater — **Wrep Pype: Potal2TA**
Analysis Batch: 60N871 — **Wrep Batch: 606363**

Analyte			Spike Added	LCSD Result	LCSD Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits	RER	RER Limit
/ mbenlEu -80			7,23	7,501		0,447	2,00	0,301	s6 ljF	109	75 - 195	0,03	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*4. 81*		*30 - 110*
Y Carrier	*: 585*		*30 - 110*

Method: 906.0 - Pritium, Potal oLSCF

Lab Sample ID: MB 160-60618821-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal2TA**
Analysis Batch: 606637 — **Wrep Batch: 606188**

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2-F	Potal f ncert. o(+) 2-F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
TdnlEu	U2,0U	p	124	124	500	930	s6 ljF	03j05j92 12:01	03j0Uj92 11:09	1

Lab Sample ID: LCS 160-6061882(-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal2TA**
Analysis Batch: 606637 — **Wrep Batch: 606188**

Analyte			Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits		
TdnlEu			9080	18U0		255	500	937	s6 ljF	83	75 - 195		

Method: A-01-R - Isotopic f ranium oAlpha SpectrometryF

Lab Sample ID: MB 160-603N(921-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal2TA**
Analysis Batch: 60391(— **Wrep Batch: 603N(9**

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2-F	Potal f ncert. o(+) 2-F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
DIGGoVi A pdHelEu	0,1U4U	p	0,90U	0,907	1,00	0,200	s6 ljF	02j20j92 1U:23	03j02j92 90:5U	1

QC Sample Results

6 Client HCay & Adrchler, . dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-121072-4

Method: A-01-R - Isotopic f ranium oAlpha SpectrometryFoContinuedF

Lab Sample ID: LCS 160-603N(92(-A
Matri/ : x ater
Analysis Batch: 6039(N

Client Sample ID: Lab Control Sample
Wrep Pype: Potal2T A
Wrep Batch: 603N(9

Analyte			Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits		
pdHelEu -923			19,7	12,57		1,84	1,00	0,25U	s6 ljF	107	75 - 195		
pdHelEu -924			12,0	12,UU		1,88	1,00	0,211	s6 ljF	105	75 - 195		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-/ 3/	*3481*		*30 - 110*

Lab Sample ID: MB 160-6069502 1-A
Matri/ : x ater
Analysis Batch: 60N(57

Client Sample ID: Method Blank
Wrep Pype: Potal2T A
Wrep Batch: 606950

Analyte	MB Result	MB Quali%er	Count f ncert. o(+) 2-F	Potal f ncert. o(+) 2-F	RL	MDC	f nit	Wrepared	AnalyUed	Dil zac
TorHOpdHelEu	0,08877	p	0,1091	0,1092	1,00	0,194	s6 ljF	03j11j92 15:08	03j12j92 1U:11	1

Lab Sample ID: LCS 160-6069502(-A
Matri/ : x ater
Analysis Batch: 60N(56

Client Sample ID: Lab Control Sample
Wrep Pype: Potal2T A
Wrep Batch: 606950

Analyte			Spike Added	LCS Result	LCS Qual	Potal f ncert. o(+) 2-F	RL	MDC	f nit	4 Rec	4 Rec Limits		
pdHelEu -923			19,7	19,42		1,51	1,00	0,192	s6 ljF	101	75 - 195		
pdHelEu -924			12,0	13,92		1,U2	1,00	0,0U38	s6 ljF	108	75 - 195		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-/ 3/	*5083*		*30 - 110*

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Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	Fill_Geo-0	
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Filtration Batch: 604832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	Filtration	
570-131073-1	BGMP0003_20230314	Dissolved	Water	Filtration	
570-131073-1	BGMP0003_20230314	Dissolved	Water	Filtration	
570-131073-1 DU	BGMP0003_20230314	Dissolved	Water	Filtration	

Prep Batch: 604894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	PrecSep-21	
MB 160-604894/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-604894/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-604894/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 604896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	PrecSep_0	
MB 160-604896/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-604896/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-604896/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 605090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	PrecSep-7	
MB 160-605090/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-605090/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 605215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	PrecSep-21	604832
MB 160-605215/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-605215/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-605215/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 605216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	PrecSep_0	604832
MB 160-605216/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-605216/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-605216/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	Fill_Geo-0	604832
MB 160-605283/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605283/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-131073-1 DU	BGMP0003_20230314	Dissolved	Water	Fill_Geo-0	604832

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Prep Batch: 605729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	ExtChrom	604832
MB 160-605729/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605729/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	LSC_Dist_Susp	
MB 160-606188/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-606188/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 606565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	PrecSep-7	604832
MB 160-606565/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-606565/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-606565/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 606930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Total/NA	Water	ExtChrom	
MB 160-606930/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-606930/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131073-1	BGMP0003_20230314	Dissolved	Water	Evaporation	604832
570-131073-1	BGMP0003_20230314	Total/NA	Water	Evaporation	
MB 160-606931/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606931/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606931/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Client Sample ID: BGMP0003_20230314

Date Collected: 03/14/23 11:10
Date Received: 03/14/23 18:05

Lab Sample ID: 570-131073-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 15:53	SAC	EET SL
Dissolved	Prep	Evaporation			200.01 mL	1.0 g	606931	04/11/23 15:16	MST	EET SL
Dissolved	Analysis	900.0		1			607427	04/14/23 05:11	SCB	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	Evaporation			199.99 mL	1.0 g	606931	04/11/23 15:16	MST	EET SL
Total/NA	Analysis	900.0		1			607427	04/14/23 05:11	SCB	EET SL
	Instrument ID: GFPCORANGE									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 15:53	SAC	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Dissolved	Analysis	901.1		1			607192	04/12/23 05:17	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Total/NA	Analysis	901.1		1			605602	03/30/23 09:38	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 15:53	SAC	EET SL
Dissolved	Prep	PrecSep-21			749.69 mL	1.0 g	605215	03/28/23 09:34	DJP	EET SL
Dissolved	Analysis	903.0		1			608037	04/19/23 09:49	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			751.92 mL	1.0 g	604894	03/24/23 10:26	DJP	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	607902	04/18/23 12:28	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 15:53	SAC	EET SL
Dissolved	Prep	PrecSep_0			749.69 mL	1.0 g	605216	03/28/23 09:54	DJP	EET SL
Dissolved	Analysis	904.0		1			607905	04/18/23 12:12	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			751.92 mL	1.0 g	604896	03/24/23 10:45	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	607421	04/14/23 18:18	SCB	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 15:53	SAC	EET SL
Dissolved	Prep	PrecSep-7			502.40 mL	1.0 g	606565	04/07/23 11:12	DJP	EET SL
Dissolved	Analysis	905		1			607841	04/17/23 19:03	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-7			499.94 mL	1.0 g	605090	03/27/23 13:47	DJP	EET SL
Total/NA	Analysis	905		1			606668	04/10/23 16:37	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			99.34 mL	1.0 g	606188	04/05/23 13:01	SEH	EET SL
Total/NA	Analysis	906.0		1			606654	04/06/23 13:41	REV	EET SL
	Instrument ID: LSCTEAL									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 15:53	SAC	EET SL
Dissolved	Prep	ExtChrom			299.9 mL	1.0 mL	605729	03/30/23 16:34	CMM	EET SL
Dissolved	Analysis	A-01-R		1			605987	04/03/23 20:58	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			200.99 mL	1.0 mL	606930	04/11/23 15:09	MAL	EET SL
Total/NA	Analysis	A-01-R		1			607393	04/13/23 16:13	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-121072-4
6roRectj/ ite: SoeinB / / gF I/ L A and SR6

Laboratory: Eurofins St. Louis

All accreditationMjcertisicationMheld by thiMlaboratory are liMed. f ot all accreditationMjcertisicationMare aNNicable to thiMreNort.

Authority	Program	Identification Number	Expiration Date
AlaMpa k(/ UT	/ tate	) 0-001	05-0E-) 5
Af AS	DeNt. osDesenMe 3FA6	F) 205	0O-0E-) 5
Af AS	DeNt. os3nerBy	F) 205.01	0O-0E-) 5
Af AS	I/ z jI3C 170) 5	F) 205	0O-0E-) 5
AriZona	/ tate	A80412	1) -04-) 2
Calisornia	FoMAnBeleMCounty / anitation DiMrictM	10) 59	0E-20-)) *
Calisornia	/ tate	) 44E	0E-20-) 2
glorida	f 3FA6	347E49	0E-20-) 2
HI - LadChem LecoBnition	/ tate	nja	0E-20-) 2
IllinoiM	f 3FA6	) 000) 2	11-20-) 2
Iowa	/ tate	272	1) -01-) O
KanMaM	f 3FA6	3-10) 2E	10-21-) 2
Kentucpy kDWT	/ tate	KY901) 5	1) -21-) 2
Kentucpy kWWT	/ tate	KY901) 5 k6ermit KY000C0C9T	1) -21-) 2
FouiMiana kAIIT	f 3FA6	0C040	0E-20-) 2
FouiMiana kDWT	/ tate	FA011	1) -21-) 2
Raryland	/ tate	210	09-20-) 2
RI - LadChem LecoBnition	/ tate	9005	0E-20-) 2
RiMMouri	/ tate	740	0E-20-) 5
f evada	/ tate	Rz 0005O) 0) 0-1	07-21-) 2
f ew JerMey	f 3FA6	Rz 00)	0E-20-) 2
f ew Yorp	f 3FA6	11E1E	02-21-) O
f orth Carolina kDWT	/ tate	) 9700	07-21-) 2
f orth Dapota	/ tate	L -) 07	0E-20-) 2
z plahoma	f 3FA6	9997	04-21-) 2
z reBon	f 3FA6	O157	09-01-) 2
6ennMylvania	f 3FA6	E4-005C0	0) -) 4-) O
/ outh Carolina	/ tate	4500) 001	0E-20-) 2
UexaM	f 3FA6	U10C70O192	07-21-) 2
(/ giMn & Wildlise	(/ gederal 6roBramM	054CO4	07-21-) 2
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(tah	f 3FA6	Rz 0005O) 0) 1-1O	07-21-) 2
VirBinia	f 3FA6	10210	0E-1O-) 2
WaMhinBton	/ tate	C59)	04-20-) 2
WeM VirBinia D36	/ tate	241	10-21-) 2

* AccreditationjCertisication renewal NendinB - accreditationjcertisication conMdered valid.

3urosinMCalMcience

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131073-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131073-1	BGMP0003_20230314	Water	03/14/23 11:10	03/14/23 18:05

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210553.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131073-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 3/28/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230314-2 (570-131073-2)	3/14/23	11:10 Pacific		Water					X		2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/14/23 1634	EC		3/14/23 1624	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2 - D27E

4/19/2023

Loc: 570
131073

570-131073 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Mark Dominick	Date: 3-14-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9806	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Weck Labs in Hacienda Heights, CA	E. coli (SM9221) Enthalby Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
BGBMP0003_20230314	3/14/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
																										Field Readings
																										Meter Serial #: 22BJ6UX
TB_20230314-1	3/14/23	1110	TB	WM	3	N	N														x					Time of Readings
																										DO (mg/L) 1110 5.02
																										pH 6.52
																										Temp (°C/°F) 56.1
																										TRC (mg/L) 0.00
																										Checked by:
																										Date/Time: 1220 / 3-14-23
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	2	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1345	Received by: EC	Date/Time: 3/14/23 1345
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Received by: RC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.5/2.4 1.8/1.7 5C12

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/19/2023

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARC DOMINICI	Date: 3.14.2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
BGBMP0003_20230314	3/14/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230314-2	3/14/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H&A	Date/Time: 3/14/23 1315	Receiv	Date/Time: 3/14/23 1315
Relinquished by:	Company: EC	Date/Time: 3/14/23 1805	Receiv EC	Date/Time: 3/14/23 18:05
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210636.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131073-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/14/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGMP0003_20230314 (570-131073-1)	3/14/23	11:10 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	9	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
1	[signature] FED EX	03/15/23 15:00	FC			
2	Relinquished by:	Date/Time:	Company	Received by: [signature] FED EX	Date/Time: MAR 16 2023 0925	Company: ETAS-IL
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/19/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131073-8

Login Number: 131073
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131073-8

Login Number: 131073
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 03/16/23 11:14 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131262-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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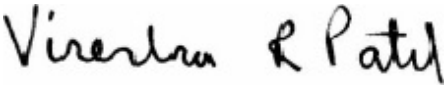

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Authorized for release by
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-1

Qualifiers

GC/MS mV O

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Sep i mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LR	LCS/LCSD recovery below method control limits

HPLC/IC

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier DesAriction
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chep istry

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)

Glossary (Continued)

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131262-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131262-1

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.5º C and 2.9º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-312209. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: TB-20230315-1 (570-131262-2). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Method 624.1: The following sample was received preserved and presented a pH of <2. Analysis was performed within 7 days per EPA recommendation: TB-20230315-1 (570-131262-2) .

Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-312115.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-314108 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: EPBLLC_20230315 (570-131262-1).

Method 625.1 SIM: The laboratory control sample (LCS) for preparation batch 570-313228 and analytical batch 570-314108 recovered outside acceptance limits for 1,2,4-Trichlorobenzene, 2,4-Dichlorophenol, 4,6-Dinitro-2-methylphenol, 2-Nitrophenol, bis (2-chloroisopropyl) ether, Hexachloroethane, Nitrobenzene, Acenaphthylene and Fluorene. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The following sample was diluted due to the nature of the sample matrix: EPBLLC_20230315 (570-131262-1). Elevated reporting limits (RLs) are provided.

Method 314.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-312272 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Perchlorate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 314.0: Due to the high concentration of Perchlorate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-312272 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 570-131262-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-312120 and analytical batch 570-312206 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 200.8: The method blank for preparation batch 570-312429 and analytical batch 570-312598 contained Chromium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBLLC_20230315 (570-131262-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBLLC_20230315 (570-131262-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-312913.
Method: 1664.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-313442. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method 8015 DRO.

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-313228. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-1

Client Sample ID: EPBLLC_20230315

Lab Sample ID: 570-131262-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Di-n-butyl phthalate	2.8		1.9	1.8	ug/L	1		625.1 SIM	Total/NA
Hexavalent chromium	0.031	J,DX	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.042	J,DX	0.20	0.019	ug/L	1		218.6	Dissolved
Nitrate as N	1.9		0.20	0.039	mg/L	2		300.0	Total/NA
Chloride - DL	24		10	3.6	mg/L	10		300.0	Total/NA
Sulfate - DL	450		10	2.4	mg/L	10		300.0	Total/NA
Nitrate Nitrite as N	1.9		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	690		500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	610	BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Aluminum	25000		300	170	ug/L	20		200.8	Total Recoverable
Silver	0.60	J,DX	1.0	0.23	ug/L	1		200.8	Total Recoverable
Arsenic	14		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	480		1.0	0.17	ug/L	1		200.8	Total Recoverable
Beryllium	1.4		0.50	0.26	ug/L	1		200.8	Total Recoverable
Cadmium	7.9		1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	56	MB	2.0	0.14	ug/L	1		200.8	Total Recoverable
Cobalt	25		1.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	73		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	60000		400	74	ug/L	20		200.8	Total Recoverable
Manganese	1100		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	100		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	23		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	1.4	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Zinc	190		20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	19		2.0	0.52	ug/L	1		200.8	Total Recoverable
Thallium	0.79	J,DX	1.0	0.11	ug/L	1		200.8	Total Recoverable
Arsenic	1.3	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	43	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.52	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Cobalt	0.33	J,DX BU	1.0	0.14	ug/L	1		200.8	Dissolved
Copper	3.2	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	18	J,DX BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	16	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	15	BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	0.75	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	14	BU	2.0	0.52	ug/L	1		200.8	Dissolved
Hardness as calcium carbonate	830		7.1	0.50	mg/L	1		SM 2340B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPBLLC_20230315 (Continued)
Lab Sample ID: 570-131262-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hardness as calcium carbonate	560		7.1	0.50	mg/L	1		SM 2340B	Dissolved
Cr (III)	0.056		0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Ammonia	0.051	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	1000		0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	1300		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Specific Conductance	1300		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	1100		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	890		20	17	mg/L	1		SM 2540D	Total/NA
Settleable Solids	5.1		0.10	0.10	mL/L	1		SM 2540F	Total/NA
Biochemical Oxygen Demand	1.6	J,DX	2.0	1.0	mg/L	1		SM 5210B	Total/NA
Carbon, Total Organic	15		4.0	2.1	mg/L	8		SM 5310D	Total/NA
Clay (less than 0.00391 mm)	17.18		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	4.89		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	62.77		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	79.95		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	15.17		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: TB-20230315-1
Lab Sample ID: 570-131262-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/16/23 16:58	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/16/23 16:58	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/16/23 16:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/16/23 16:58	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/16/23 16:58	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/16/23 16:58	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/16/23 16:58	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/16/23 16:58	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/16/23 16:58	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/16/23 16:58	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/16/23 16:58	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/16/23 16:58	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/16/23 16:58	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/16/23 16:58	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/16/23 16:58	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/16/23 16:58	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/16/23 16:58	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/16/23 16:58	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/16/23 16:58	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/16/23 16:58	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/16/23 16:58	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/16/23 16:58	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/16/23 16:58	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/16/23 16:58	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/16/23 16:58	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/16/23 16:58	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/16/23 16:58	1
2-Hexanone	ND		5.0	2.2	ug/L			03/16/23 16:58	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/16/23 16:58	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/16/23 16:58	1
Acetone	ND		20	16	ug/L			03/16/23 16:58	1
Acrolein	ND		5.0	4.6	ug/L			03/16/23 16:58	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/16/23 16:58	1
Benzene	ND		0.50	0.28	ug/L			03/16/23 16:58	1
Bromobenzene	ND		0.50	0.23	ug/L			03/16/23 16:58	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/16/23 16:58	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/16/23 16:58	1
Bromoform	ND		1.0	0.25	ug/L			03/16/23 16:58	1
Bromomethane	ND		0.50	0.22	ug/L			03/16/23 16:58	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/16/23 16:58	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/16/23 16:58	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/16/23 16:58	1
Chloroethane	ND		1.0	0.29	ug/L			03/16/23 16:58	1
Chloroform	ND		0.50	0.19	ug/L			03/16/23 16:58	1
Chloromethane	ND		0.50	0.30	ug/L			03/16/23 16:58	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/16/23 16:58	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/16/23 16:58	1
Cyclohexane	ND		2.0	0.79	ug/L			03/16/23 16:58	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/16/23 16:58	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.50	0.19	ug/L			03/16/23 16:58	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/16/23 16:58	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/16/23 16:58	1
Ethanol	ND		100	65	ug/L			03/16/23 16:58	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/16/23 16:58	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/16/23 16:58	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/16/23 16:58	1
Isopropanol	ND		250	120	ug/L			03/16/23 16:58	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/16/23 16:58	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/16/23 16:58	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/16/23 16:58	1
Naphthalene	ND		1.0	0.33	ug/L			03/16/23 16:58	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/16/23 16:58	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/16/23 16:58	1
o-Xylene	ND		0.50	0.15	ug/L			03/16/23 16:58	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/16/23 16:58	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/16/23 16:58	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/16/23 16:58	1
Styrene	ND		0.50	0.19	ug/L			03/16/23 16:58	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/16/23 16:58	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/16/23 16:58	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/16/23 16:58	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/16/23 16:58	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/16/23 16:58	1
Toluene	ND		0.50	0.23	ug/L			03/16/23 16:58	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/16/23 16:58	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/16/23 16:58	1
Trichloroethene	ND		0.50	0.17	ug/L			03/16/23 16:58	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/16/23 16:58	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/16/23 16:58	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/16/23 16:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*60 - 140*		*03/16/23 16:58*	*1*
4-Bromofluorobenzene (Surr)	*93*		*60 - 140*		*03/16/23 16:58*	*1*
Dibromofluoromethane (Surr)	*84*		*60 - 140*		*03/16/23 16:58*	*1*
Toluene-d8 (Surr)	*97*		*60 - 140*		*03/16/23 16:58*	*1*

Client Sample ID: TB-20230315-1
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/16/23 16:13	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/16/23 16:13	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/16/23 16:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/16/23 16:13	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/16/23 16:13	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/16/23 16:13	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/16/23 16:13	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/16/23 16:13	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-20230315-1
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/16/23 16:13	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/16/23 16:13	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/16/23 16:13	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/16/23 16:13	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/16/23 16:13	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/16/23 16:13	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/16/23 16:13	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/16/23 16:13	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/16/23 16:13	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/16/23 16:13	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/16/23 16:13	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/16/23 16:13	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/16/23 16:13	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/16/23 16:13	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/16/23 16:13	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/16/23 16:13	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/16/23 16:13	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/16/23 16:13	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/16/23 16:13	1
2-Hexanone	ND		5.0	2.2	ug/L			03/16/23 16:13	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/16/23 16:13	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/16/23 16:13	1
Acetone	ND		20	16	ug/L			03/16/23 16:13	1
Acrolein	ND		5.0	4.6	ug/L			03/16/23 16:13	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/16/23 16:13	1
Benzene	ND		0.50	0.28	ug/L			03/16/23 16:13	1
Bromobenzene	ND		0.50	0.23	ug/L			03/16/23 16:13	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/16/23 16:13	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/16/23 16:13	1
Bromoform	ND		1.0	0.25	ug/L			03/16/23 16:13	1
Bromomethane	ND		0.50	0.22	ug/L			03/16/23 16:13	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/16/23 16:13	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/16/23 16:13	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/16/23 16:13	1
Chloroethane	ND		1.0	0.29	ug/L			03/16/23 16:13	1
Chloroform	ND		0.50	0.19	ug/L			03/16/23 16:13	1
Chloromethane	ND		0.50	0.30	ug/L			03/16/23 16:13	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/16/23 16:13	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/16/23 16:13	1
Cyclohexane	ND		2.0	0.79	ug/L			03/16/23 16:13	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/16/23 16:13	1
Dibromomethane	ND		0.50	0.19	ug/L			03/16/23 16:13	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/16/23 16:13	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/16/23 16:13	1
Ethanol	ND		100	65	ug/L			03/16/23 16:13	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/16/23 16:13	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/16/23 16:13	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/16/23 16:13	1
Isopropanol	ND		250	120	ug/L			03/16/23 16:13	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-20230315-1
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		0.50	0.16	ug/L			03/16/23 16:13	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/16/23 16:13	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/16/23 16:13	1
Naphthalene	ND		1.0	0.33	ug/L			03/16/23 16:13	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/16/23 16:13	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/16/23 16:13	1
o-Xylene	ND		0.50	0.15	ug/L			03/16/23 16:13	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/16/23 16:13	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/16/23 16:13	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/16/23 16:13	1
Styrene	ND		0.50	0.19	ug/L			03/16/23 16:13	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/16/23 16:13	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/16/23 16:13	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/16/23 16:13	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/16/23 16:13	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/16/23 16:13	1
Toluene	ND		0.50	0.23	ug/L			03/16/23 16:13	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/16/23 16:13	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/16/23 16:13	1
Trichloroethene	ND		0.50	0.17	ug/L			03/16/23 16:13	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/16/23 16:13	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/16/23 16:13	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/16/23 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*80*		*60 - 140*		*03/16/23 16:13*	*1*
4-Bromofluorobenzene (Surr)	*96*		*60 - 140*		*03/16/23 16:13*	*1*
Dibromofluoromethane (Surr)	*89*		*60 - 140*		*03/16/23 16:13*	*1*
Toluene-d8 (Surr)	*96*		*60 - 140*		*03/16/23 16:13*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/16/23 18:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*92*		*67 - 133*		*03/16/23 18:29*	*1*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND	LR	0.19	0.12	ug/L		03/22/23 05:11	03/23/23 20:51	1
1,2-Dichlorobenzene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 20:51	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.19	0.088	ug/L		03/22/23 05:11	03/23/23 20:51	1
1,3-Dichlorobenzene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 20:51	1
1,4-Dichlorobenzene	ND		0.19	0.13	ug/L		03/22/23 05:11	03/23/23 20:51	1
2,4,6-Trichlorophenol	ND		0.97	0.13	ug/L		03/22/23 05:11	03/23/23 20:51	1
2,4-Dichlorophenol	ND	LR	0.97	0.13	ug/L		03/22/23 05:11	03/23/23 20:51	1
2,4-Dimethylphenol	ND		0.19	0.12	ug/L		03/22/23 05:11	03/23/23 20:51	1
2,4-Dinitrophenol	ND		4.9	4.2	ug/L		03/22/23 05:11	03/23/23 20:51	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 20:51	1
2,6-Dinitrotoluene	ND		0.19	0.17	ug/L		03/22/23 05:11	03/23/23 20:51	1
2-Chloronaphthalene	ND	LR BA	0.19	0.14	ug/L		03/22/23 05:11	03/23/23 20:51	1
2-Chlorophenol	ND		0.19	0.093	ug/L		03/22/23 05:11	03/23/23 20:51	1
2-Nitrophenol	ND	LR	4.9	3.4	ug/L		03/22/23 05:11	03/23/23 20:51	1
3,3'-Dichlorobenzidine	ND		4.9	2.9	ug/L		03/22/23 05:11	03/23/23 20:51	1
4,6-Dinitro-2-methylphenol	ND	LR	4.9	4.4	ug/L		03/22/23 05:11	03/23/23 20:51	1
4-Bromophenyl phenyl ether	ND		0.19	0.097	ug/L		03/22/23 05:11	03/23/23 20:51	1
4-Chloro-3-methylphenol	ND		0.97	0.13	ug/L		03/22/23 05:11	03/23/23 20:51	1
4-Chlorophenyl phenyl ether	ND		0.19	0.16	ug/L		03/22/23 05:11	03/23/23 20:51	1
4-Nitrophenol	ND		4.9	3.3	ug/L		03/22/23 05:11	03/23/23 20:51	1
Acenaphthene	ND	LR	0.19	0.096	ug/L		03/22/23 05:11	03/23/23 20:51	1
Acenaphthylene	ND		0.19	0.13	ug/L		03/22/23 05:11	03/23/23 20:51	1
Anthracene	ND		0.19	0.082	ug/L		03/22/23 05:11	03/23/23 20:51	1
Benzidine	ND		4.9	2.6	ug/L		03/22/23 05:11	03/23/23 20:51	1
Benzo[a]anthracene	ND		0.19	0.12	ug/L		03/22/23 05:11	03/23/23 20:51	1
Benzo[a]pyrene	ND		0.19	0.15	ug/L		03/22/23 05:11	03/23/23 20:51	1
Benzo[b]fluoranthene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 20:51	1
Benzo[g,h,i]perylene	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 20:51	1
Benzo[k]fluoranthene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 20:51	1
bis (2-chloroisopropyl) ether	ND	LR	0.19	0.13	ug/L		03/22/23 05:11	03/23/23 20:51	1
Bis(2-chloroethoxy)methane	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 20:51	1
Bis(2-chloroethyl)ether	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 20:51	1
Bis(2-ethylhexyl) phthalate	ND		4.9	3.5	ug/L		03/22/23 05:11	03/23/23 20:51	1
Butyl benzyl phthalate	ND		0.97	0.65	ug/L		03/22/23 05:11	03/23/23 20:51	1
Chrysene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 20:51	1
Dibenz(a,h)anthracene	ND		0.19	0.15	ug/L		03/22/23 05:11	03/23/23 20:51	1
Diethyl phthalate	ND		1.9	0.18	ug/L		03/22/23 05:11	03/23/23 20:51	1
Dimethyl phthalate	ND		1.9	0.095	ug/L		03/22/23 05:11	03/23/23 20:51	1
Di-n-butyl phthalate	**2.8**		1.9	1.8	ug/L		03/22/23 05:11	03/23/23 20:51	1
Di-n-octyl phthalate	ND		2.9	0.52	ug/L		03/22/23 05:11	03/23/23 20:51	1
Fluoranthene	ND		0.19	0.098	ug/L		03/22/23 05:11	03/23/23 20:51	1
Fluorene	ND	LR	0.19	0.092	ug/L		03/22/23 05:11	03/23/23 20:51	1
Hexachlorobenzene	ND		0.19	0.13	ug/L		03/22/23 05:11	03/23/23 20:51	1
Hexachlorobutadiene	ND		0.19	0.15	ug/L		03/22/23 05:11	03/23/23 20:51	1
Hexachlorocyclopentadiene	ND		0.19	0.15	ug/L		03/22/23 05:11	03/23/23 20:51	1
Hexachloroethane	ND	LR	0.19	0.12	ug/L		03/22/23 05:11	03/23/23 20:51	1
Indeno[1,2,3-cd]pyrene	ND		0.19	0.12	ug/L		03/22/23 05:11	03/23/23 20:51	1
Isophorone	ND		0.19	0.096	ug/L		03/22/23 05:11	03/23/23 20:51	1
Naphthalene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 20:51	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	ND	LR	0.19	0.14	ug/L		03/22/23 05:11	03/23/23 20:51	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		03/22/23 05:11	03/23/23 20:51	1
N-Nitrosodi-n-propylamine	ND		0.19	0.14	ug/L		03/22/23 05:11	03/23/23 20:51	1
N-Nitrosodiphenylamine	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 20:51	1
Pentachlorophenol	ND		0.97	0.82	ug/L		03/22/23 05:11	03/23/23 20:51	1
Phenanthrene	ND		0.19	0.16	ug/L		03/22/23 05:11	03/23/23 20:51	1
Phenol	ND		0.97	0.51	ug/L		03/22/23 05:11	03/23/23 20:51	1
Pyrene	ND		0.19	0.083	ug/L		03/22/23 05:11	03/23/23 20:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*99*		*28 - 127*	*03/22/23 05:11*	*03/23/23 20:51*	*1*
2-Fluorobiphenyl (Surr)	*74*		*31 - 120*	*03/22/23 05:11*	*03/23/23 20:51*	*1*
2-Fluorophenol	*42*		*17 - 120*	*03/22/23 05:11*	*03/23/23 20:51*	*1*
Nitrobenzene-d5	*84*		*27 - 120*	*03/22/23 05:11*	*03/23/23 20:51*	*1*
Phenol-d6 (Surr)	*28*		*10 - 120*	*03/22/23 05:11*	*03/23/23 20:51*	*1*
p-Terphenyl-d14 (Surr)	*92*		*45 - 120*	*03/22/23 05:11*	*03/23/23 20:51*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/21/23 06:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*89*		*20 - 144*		*03/21/23 06:33*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.048	0.034	mg/L		03/21/23 13:46	03/25/23 08:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*106*		*53 - 151*	*03/21/23 13:46*	*03/25/23 08:27*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.031	J,DX	0.20	0.019	ug/L			03/16/23 06:38	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.042	J,DX	0.20	0.019	ug/L			03/16/23 08:38	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.20	0.086	mg/L			03/16/23 01:17	2
Nitrate as N	**1.9**		0.20	0.039	mg/L			03/16/23 01:17	2

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 300.0 - Anions, Ion Chromatography - DL

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**24**		10	3.6	mg/L			03/16/23 01:35	10
Fluoride	ND		1.0	0.46	mg/L			03/16/23 01:35	10
Sulfate	**450**		10	2.4	mg/L			03/16/23 01:35	10

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/17/23 00:51	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.9		0.10	0.020	mg/L			03/20/23 12:49	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	690		500	3.5	ug/L		03/17/23 07:46	03/17/23 14:55	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	610	BU	500	3.5	ug/L			03/17/23 19:51	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	25000		300	170	ug/L		03/17/23 07:59	03/17/23 11:53	20
Silver	0.60	J,DX	1.0	0.23	ug/L		03/17/23 07:59	03/17/23 11:49	1
Arsenic	14		1.0	0.16	ug/L		03/17/23 07:59	03/17/23 11:49	1
Barium	480		1.0	0.17	ug/L		03/17/23 07:59	03/17/23 11:49	1
Beryllium	1.4		0.50	0.26	ug/L		03/17/23 07:59	03/17/23 11:49	1
Cadmium	7.9		1.0	0.13	ug/L		03/17/23 07:59	03/17/23 11:49	1
Chromium	56	MB	2.0	0.14	ug/L		03/17/23 07:59	03/17/23 11:49	1
Cobalt	25		1.0	0.14	ug/L		03/17/23 07:59	03/17/23 11:49	1
Copper	73		2.0	0.32	ug/L		03/17/23 07:59	03/17/23 11:49	1
Iron	60000		400	74	ug/L		03/17/23 07:59	03/17/23 11:53	20
Manganese	1100		1.0	0.41	ug/L		03/17/23 07:59	03/17/23 11:49	1
Nickel	100		2.0	0.17	ug/L		03/17/23 07:59	03/17/23 11:49	1
Lead	23		1.0	0.12	ug/L		03/17/23 07:59	03/17/23 11:49	1
Antimony	1.4	J,DX	2.0	0.36	ug/L		03/17/23 07:59	03/17/23 11:49	1
Zinc	190		20	2.8	ug/L		03/17/23 07:59	03/17/23 11:49	1
Selenium	19		2.0	0.52	ug/L		03/17/23 07:59	03/17/23 11:49	1
Thallium	0.79	J,DX	1.0	0.11	ug/L		03/17/23 07:59	03/17/23 11:49	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	BU	15	8.6	ug/L			03/16/23 12:24	1
Silver	ND	BU	1.0	0.23	ug/L			03/16/23 12:24	1
Arsenic	**1.3**	**BU**	1.0	0.16	ug/L			03/16/23 12:24	1
Barium	**43**	**BU**	1.0	0.17	ug/L			03/16/23 12:24	1
Beryllium	ND	BU	0.50	0.26	ug/L			03/16/23 12:24	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/16/23 12:24	1
Chromium	**0.52**	**J,DX BU**	2.0	0.14	ug/L			03/16/23 12:24	1
Cobalt	**0.33**	**J,DX BU**	1.0	0.14	ug/L			03/16/23 12:24	1
Copper	**3.2**	**BU**	2.0	0.32	ug/L			03/16/23 12:24	1
Iron	**18**	**J,DX BU**	20	3.7	ug/L			03/16/23 12:24	1
Manganese	**16**	**BU**	1.0	0.41	ug/L			03/16/23 12:24	1
Nickel	**15**	**BU**	2.0	0.17	ug/L			03/16/23 12:24	1
Thallium	ND	BU	1.0	0.11	ug/L			03/16/23 12:24	1
Lead	ND	BU	1.0	0.12	ug/L			03/16/23 12:24	1
Antimony	**0.75**	**J,DX BU**	2.0	0.36	ug/L			03/16/23 12:24	1
Zinc	ND	BU	20	2.8	ug/L			03/16/23 12:24	1
Selenium	**14**	**BU**	2.0	0.52	ug/L			03/16/23 12:24	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	830		7.1	0.50	mg/L			03/21/23 17:15	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	560		7.1	0.50	mg/L			03/21/23 17:28	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-1

General Chemistry

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		0.98	0.50	mg/L		03/20/23 07:25	03/21/23 09:05	1
Cr (III) (EPA 218.6 CR3)	**0.056**		0.050	0.0030	mg/L			03/24/23 12:34	1
Ammonia (EPA 350.1)	**0.051**	**J,DX**	0.075	0.032	mg/L		03/27/23 14:02	03/27/23 16:17	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/27/23 14:01	1
Turbidity (SM 2130B)	**1000**		0.05	0.05	NTU			03/15/23 22:27	1
Total Dissolved Solids (SM 2540C)	**1100**		10	8.7	mg/L			03/20/23 21:08	1
Total Suspended Solids (SM 2540D)	**890**		20	17	mg/L			03/20/23 13:31	1
Biochemical Oxygen Demand (SM 5210B)	**1.6**	**J,DX**	2.0	1.0	mg/L		03/16/23 14:01	03/16/23 14:46	1
Carbon, Total Organic (SM 5310D)	**15**		4.0	2.1	mg/L			03/31/23 01:01	8
MBAS (SM 5540C)	ND		0.20	0.050	mg/L		03/16/23 19:30	03/16/23 20:52	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**1300**		1.0	1.0	umhos/cm			03/22/23 20:10	1
Specific Conductance (SM 2510B)	**1300**		1.0	1.0	umhos/cm			03/22/23 20:10	1
Settleable Solids (SM 2540F)	**5.1**		0.10	0.10	mL/L			03/16/23 14:03	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

General Chemistry - Dissolved

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			03/24/23 12:34	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**17.18**		0.01	0.01	%			03/20/23 19:38	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/20/23 19:38	1
Fine Sand (0.125 to 0.25mm)	**4.89**		0.01	0.01	%			03/20/23 19:38	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/20/23 19:38	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/20/23 19:38	1
Silt (0.00391 to 0.0625mm)	**62.77**		0.01	0.01	%			03/20/23 19:38	1
Total Silt and Clay (0 to 0.0626mm)	**79.95**		0.01	0.01	%			03/20/23 19:38	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/20/23 19:38	1
Very Fine Sand (0.0625 to 0.125 mm)	**15.17**		0.01	0.01	%			03/20/23 19:38	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

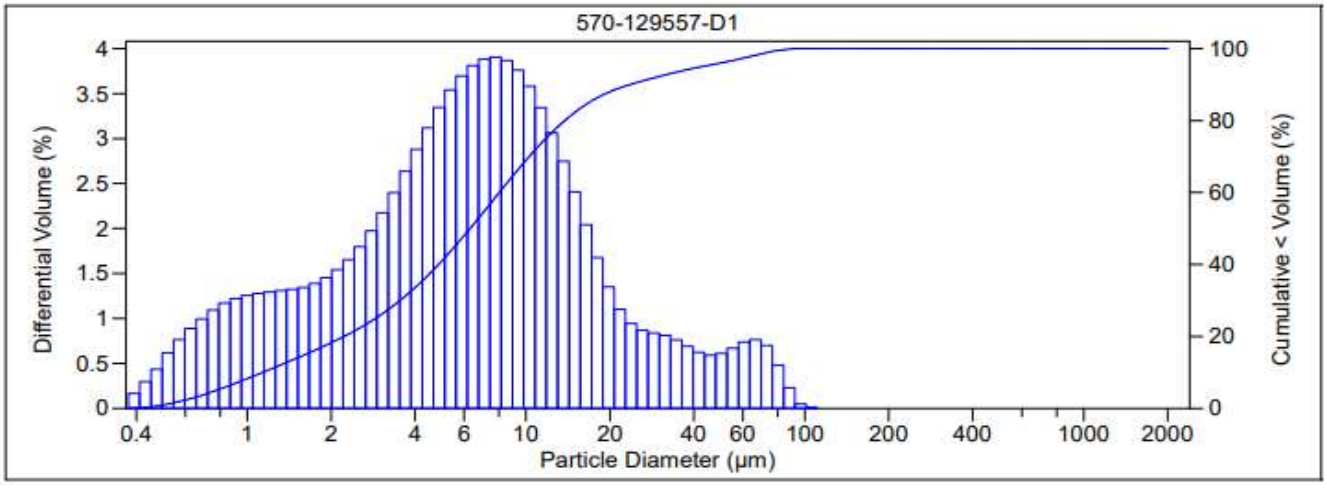
GSI Environmental, Inc.

Date Sampled:	03/01/23
Date Received:	03/02/23
Work Order No:	570-129557
Date Analyzed:	03/16/23
Method:	ASTM D4464M

Project: Sierra Recycling and Demolition

Sample ID	Depth ft	Description	Mean Grain Size mm
Pre-Aboveground Clara		Silt	0.011

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	2.16	67.21	30.62	97.84



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

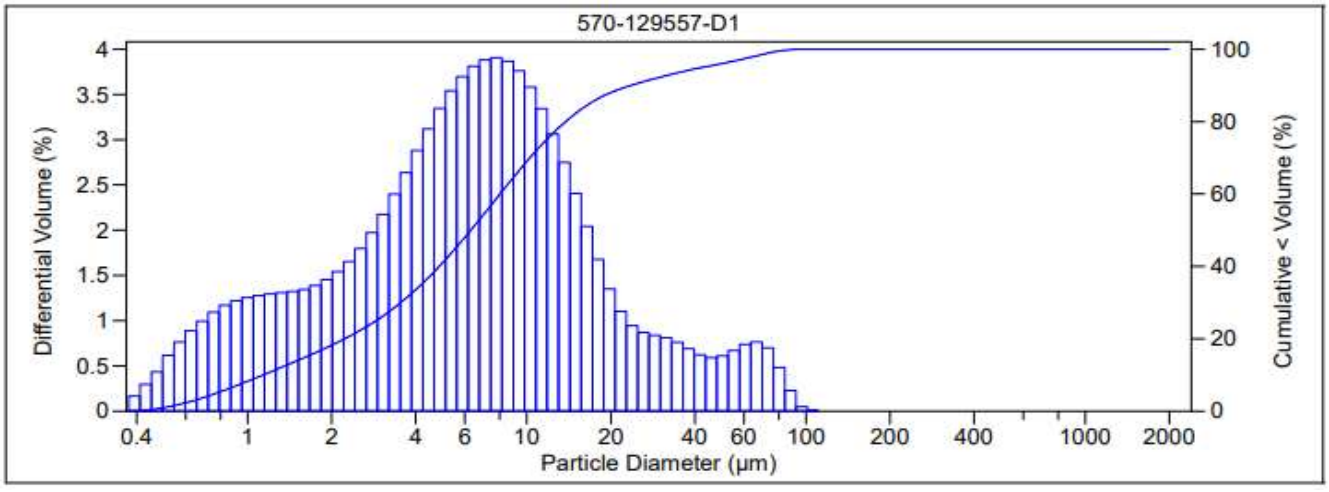
GSI Environmental, Inc.

Date Sampled:	03/01/23
Date Received:	03/02/23
Work Order No:	570-129557
Date Analyzed:	03/16/23
Method:	ASTM D4464M

Project: Sierra Recycling and Demolition

Sample ID	Depth ft	Description	Mean Grain Size mm
Pre-Aboveground Clara		Silt	0.011

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	2.35	64.81	32.84	97.65



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

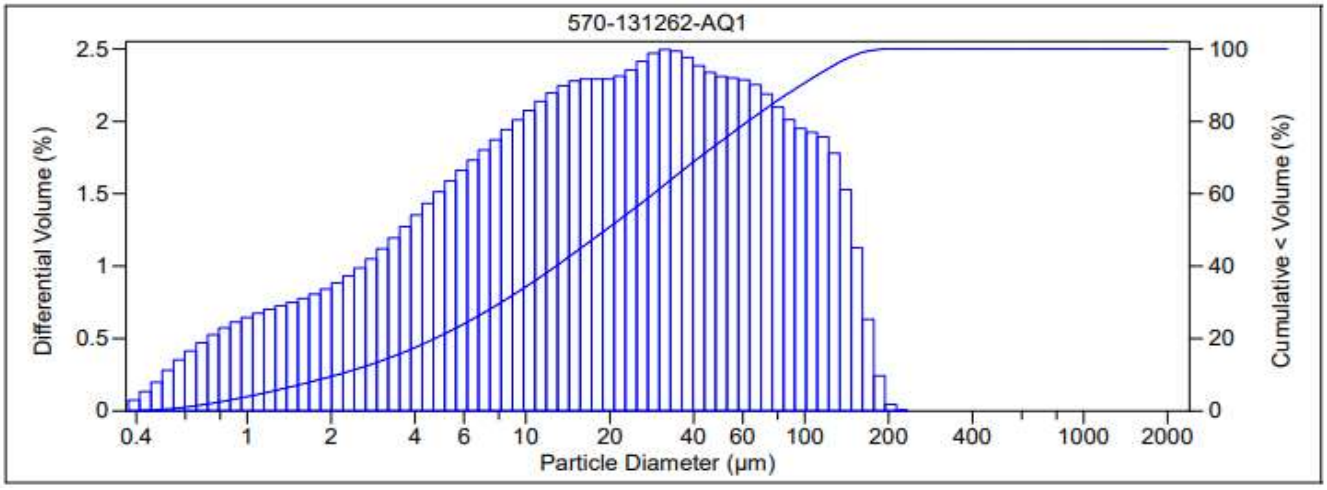
Haley & Aldrich, Inc.

Date Sampled:	03/15/23
Date Received:	03/15/23
Work Order No:	570-131262
Date Analyzed:	03/16/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP - NEW

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBLLC_20230315		Silt	0.035

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	4.89	15.17	62.77	17.18	79.95



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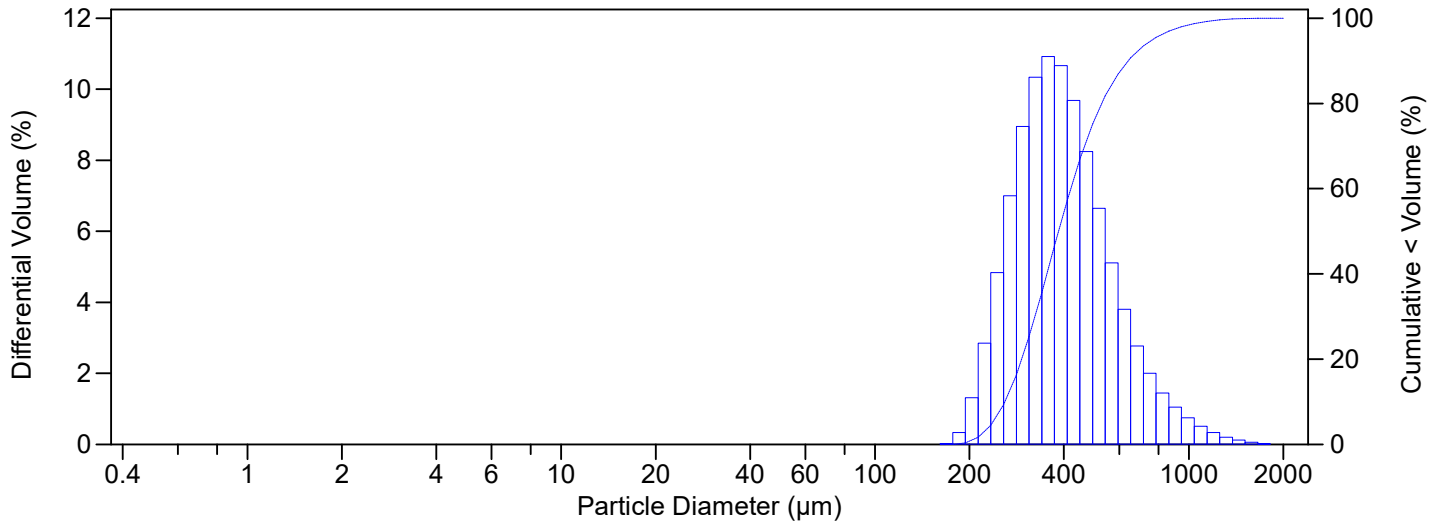
	STD SAND_16 Mar 2023_20.06.05.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	21		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.73%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:04 16 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_16 Mar 2023_20.06.05.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	426.7 µm	S.D.:	176.3 µm
Median:	384.9 µm	Variance:	31078 µm^2
Mean/Median ratio:	1.109	Skewness:	1.955 Right skewed
Mode:	356.1 µm	Kurtosis:	5.896 Leptokurtic

d_{10}: 259.3 µm d_{50}: 384.9 µm d_{90}: 641.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.34	Median:	1.38	Deviation:	0.51
Skewness:	-0.14	Kurtosis:	1.03		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
236.3 µm	280.8 µm	308.7 µm	353.2 µm	384.9 µm	492.8 µm	564.6 µm	769.3 µm

Particle Diameter µm	STD SAND _16 Mar 2023_20.06 .05.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.89
250	68.2
500	22.4
1000	1.58
2000	

STD SAND_16 Mar 2023_20.06.05.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.33
0.412	0	22.73	0	1255	0.21
0.452	0	24.95	0	1377	0.12
0.496	0	27.39	0	1512	0.058
0.545	0	30.07	0	1660	0.014
0.598	0	33.01	0	1822	0.00072
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.021		
3.206	0	176.9	0.34		
3.519	0	194.2	1.31		
3.863	0	213.2	2.85		
4.241	0	234.1	4.84		
4.656	0	256.9	7.00		
5.111	0	282.1	8.95		
5.611	0	309.6	10.3		
6.159	0	339.9	10.9		
6.761	0	373.1	10.7		
7.422	0	409.6	9.69		
8.148	0	449.7	8.25		
8.944	0	493.6	6.65		
9.819	0	541.9	5.11		
10.78	0	594.9	3.81		
11.83	0	653.0	2.77		
12.99	0	716.9	2.01		
14.26	0	786.9	1.45		
15.65	0	863.9	1.05		
17.18	0	948.3	0.75		
18.86	0	1041	0.51		

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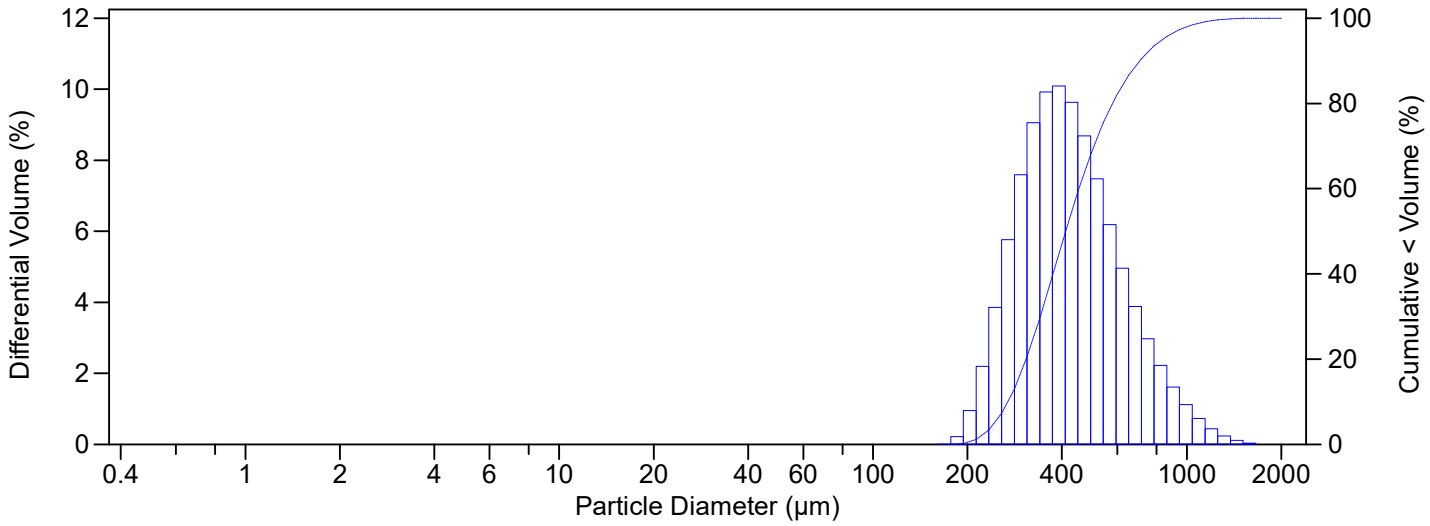
	STD SAND_16 Mar 2023_20.51.40.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	23		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.61%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:50 16 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_16 Mar 2023_20.51.40.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	457.5 µm	S.D.:	189.6 µm
Median:	411.0 µm	Variance:	35967 µm^2
Mean/Median ratio:	1.113	Skewness:	1.556 Right skewed
Mode:	391.0 µm	Kurtosis:	3.281 Leptokurtic

d_{10}: 268.9 µm d_{50}: 411.0 µm d_{90}: 708.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.25	Median:	1.28	Deviation:	0.54
Skewness:	-0.13	Kurtosis:	1.00		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
243.6 µm	292.9 µm	324.3 µm	374.7 µm	411.0 µm	538.9 µm	622.3 µm	839.6 µm

Particle Diameter µm	STD SAND _16 Mar 2023_20.51 .40.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.08
250	62.9
500	29.0
1000	2.06
2000	

STD SAND_16 Mar 2023_20.51.40.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.44
0.412	0	22.73	0	1255	0.24
0.452	0	24.95	0	1377	0.11
0.496	0	27.39	0	1512	0.032
0.545	0	30.07	0	1660	0.0024
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.013		
3.206	0	176.9	0.22		
3.519	0	194.2	0.95		
3.863	0	213.2	2.20		
4.241	0	234.1	3.86		
4.656	0	256.9	5.76		
5.111	0	282.1	7.59		
5.611	0	309.6	9.05		
6.159	0	339.9	9.92		
6.761	0	373.1	10.1		
7.422	0	409.6	9.63		
8.148	0	449.7	8.69		
8.944	0	493.6	7.48		
9.819	0	541.9	6.19		
10.78	0	594.9	4.97		
11.83	0	653.0	3.88		
12.99	0	716.9	2.97		
14.26	0	786.9	2.22		
15.65	0	863.9	1.62		
17.18	0	948.3	1.12		
18.86	0	1041	0.73		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-131262-1	EPBLLC_20230315	87	93	84	97
570-131262-2	TB-20230315-1	80	96	89	96
LCS 570-312209/1003	Lab Control Sample	94	94	92	99
LCSD 570-312209/4	Lab Control Sample Dup	85	93	91	101
MB 570-312209/6	Method Blank	86	95	88	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		14DCBTN
Lab Sample ID	Client Sample ID	(67-133)
570-131262-1	EPBLLC_20230315	92
LCS 570-312115/4	Lab Control Sample	89
LCSD 570-312115/5	Lab Control Sample Dup	99
MB 570-312115/7	Method Blank	97

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-131262-1	EPBLLC_20230315	99	74	42	84	28	92
LCS 570-313228/2-A	Lab Control Sample	56	54	35	53	26	91
LCSD 570-313228/3-A	Lab Control Sample Dup	68	69	42	55	30	97
MB 570-313228/1-A	Method Blank	62	49	33	56	22	76

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(20-144)
570-131262-1	EPBLLC_20230315	89

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BFB1 (20-144)
LCS 570-313170/31	Lab Control Sample	100
LCSD 570-313170/32	Lab Control Sample Dup	99
MB 570-313170/33	Method Blank	87

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OTCSN1 (53-151)
570-131262-1	EPBLLC_20230315	106
LCS 570-313442/2-A	Lab Control Sample	105
LCSD 570-313442/3-A	Lab Control Sample Dup	104
MB 570-313442/1-A	Method Blank	104

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-312209/6
Matrix: Water
Analysis Batch: 312209

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/16/23 15:27	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/16/23 15:27	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/16/23 15:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/16/23 15:27	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/16/23 15:27	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/16/23 15:27	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/16/23 15:27	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/16/23 15:27	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/16/23 15:27	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/16/23 15:27	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/16/23 15:27	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/16/23 15:27	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/16/23 15:27	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/16/23 15:27	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/16/23 15:27	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/16/23 15:27	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/16/23 15:27	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/16/23 15:27	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/16/23 15:27	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/16/23 15:27	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/16/23 15:27	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/16/23 15:27	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/16/23 15:27	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/16/23 15:27	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/16/23 15:27	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/16/23 15:27	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/16/23 15:27	1
2-Hexanone	ND		5.0	2.2	ug/L			03/16/23 15:27	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/16/23 15:27	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/16/23 15:27	1
Acetone	ND		20	16	ug/L			03/16/23 15:27	1
Acrolein	ND		5.0	4.6	ug/L			03/16/23 15:27	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/16/23 15:27	1
Benzene	ND		0.50	0.28	ug/L			03/16/23 15:27	1
Bromobenzene	ND		0.50	0.23	ug/L			03/16/23 15:27	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/16/23 15:27	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/16/23 15:27	1
Bromoform	ND		1.0	0.25	ug/L			03/16/23 15:27	1
Bromomethane	ND		0.50	0.22	ug/L			03/16/23 15:27	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/16/23 15:27	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/16/23 15:27	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/16/23 15:27	1
Chloroethane	ND		1.0	0.29	ug/L			03/16/23 15:27	1
Chloroform	ND		0.50	0.19	ug/L			03/16/23 15:27	1
Chloromethane	ND		0.50	0.30	ug/L			03/16/23 15:27	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/16/23 15:27	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/16/23 15:27	1
Cyclohexane	ND		2.0	0.79	ug/L			03/16/23 15:27	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-312209/6
Matrix: Water
Analysis Batch: 312209

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.15	ug/L			03/16/23 15:27	1
Dibromomethane	ND		0.50	0.19	ug/L			03/16/23 15:27	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/16/23 15:27	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/16/23 15:27	1
Ethanol	ND		100	65	ug/L			03/16/23 15:27	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/16/23 15:27	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/16/23 15:27	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/16/23 15:27	1
Isopropanol	ND		250	120	ug/L			03/16/23 15:27	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/16/23 15:27	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/16/23 15:27	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/16/23 15:27	1
Naphthalene	ND		1.0	0.33	ug/L			03/16/23 15:27	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/16/23 15:27	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/16/23 15:27	1
o-Xylene	ND		0.50	0.15	ug/L			03/16/23 15:27	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/16/23 15:27	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/16/23 15:27	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/16/23 15:27	1
Styrene	ND		0.50	0.19	ug/L			03/16/23 15:27	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/16/23 15:27	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/16/23 15:27	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/16/23 15:27	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/16/23 15:27	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/16/23 15:27	1
Toluene	ND		0.50	0.23	ug/L			03/16/23 15:27	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/16/23 15:27	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/16/23 15:27	1
Trichloroethene	ND		0.50	0.17	ug/L			03/16/23 15:27	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/16/23 15:27	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/16/23 15:27	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/16/23 15:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*60 - 140*		*0/ 3/ 32/ 17:25*	*1*
4-mrof obuorozen9ene (Surr)	*B7*		*60 - 140*		*0/ 3/ 32/ 17:25*	*1*
Dizrof obuorof ethane (Surr)	*88*		*60 - 140*		*0/ 3/ 32/ 17:25*	*1*
Toluene-d8 (Surr)	*BB*		*60 - 140*		*0/ 3/ 32/ 17:25*	*1*

Lab Sample ID: LCS 570-312209/1003
Matrix: Water
Analysis Batch: 312209

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	9.48		ug/L		95	60 - 140
1,1,1-Trichloroethane	10.0	8.73		ug/L		87	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.20		ug/L		92	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	9.01		ug/L		90	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-312209/1003
Matrix: Water
Analysis Batch: 312209

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	10.0	9.52		ug/L		95	70 - 130
1,1-Dichloroethane	10.0	9.21		ug/L		92	70 - 130
1,1-Dichloroethene	10.0	8.45		ug/L		84	50 - 150
1,1-Dichloropropene	10.0	9.16		ug/L		92	60 - 140
1,2,3-Trichlorobenzene	10.0	9.43		ug/L		94	60 - 140
1,2,3-Trichloropropane	10.0	8.89		ug/L		89	60 - 140
1,2,4-Trichlorobenzene	10.0	9.32		ug/L		93	60 - 140
1,2,4-Trimethylbenzene	10.0	8.80		ug/L		88	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	8.21		ug/L		82	60 - 140
1,2-Dibromoethane	10.0	9.50		ug/L		95	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	8.82		ug/L		88	60 - 140
1,2-Dichlorobenzene	10.0	9.53		ug/L		95	65 - 135
1,2-Dichloroethane	10.0	8.97		ug/L		90	70 - 130
1,2-Dichloropropane	10.0	9.58		ug/L		96	35 - 165
1,3,5-Trimethylbenzene	10.0	9.31		ug/L		93	60 - 140
1,3-Dichlorobenzene	10.0	9.98		ug/L		100	70 - 130
1,3-Dichloropropane	10.0	9.31		ug/L		93	60 - 140
1,4-Dichlorobenzene	10.0	9.64		ug/L		96	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	7.97	J,DX	ug/L		80	60 - 140
2,2-Dichloropropane	10.0	9.72		ug/L		97	60 - 140
2-Butanone (MEK)	10.0	7.46		ug/L		75	60 - 140
2-Chloroethyl vinyl ether	10.0	6.88		ug/L		69	1 - 225
2-Chlorotoluene	10.0	9.35		ug/L		94	60 - 140
2-Hexanone	10.0	8.26		ug/L		83	60 - 140
4-Chlorotoluene	10.0	9.36		ug/L		94	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	9.14		ug/L		91	60 - 140
Acetone	10.0	ND		ug/L		87	60 - 140
Acrolein	20.0	16.5		ug/L		82	60 - 140
Acrylonitrile	10.0	9.71		ug/L		97	60 - 140
Benzene	10.0	9.75		ug/L		97	65 - 135
Bromobenzene	10.0	9.91		ug/L		99	60 - 140
Bromochloromethane	10.0	10.4		ug/L		104	60 - 140
Bromodichloromethane	10.0	9.29		ug/L		93	65 - 135
Bromoform	10.0	9.81		ug/L		98	70 - 130
Bromomethane	10.0	12.9		ug/L		129	15 - 185
Carbon disulfide	10.0	8.37		ug/L		84	60 - 140
Carbon tetrachloride	10.0	8.63		ug/L		86	70 - 130
Chlorobenzene	10.0	9.70		ug/L		97	65 - 135
Chloroethane	10.0	9.04		ug/L		90	40 - 160
Chloroform	10.0	8.96		ug/L		90	70 - 135
Chloromethane	10.0	8.78		ug/L		88	1 - 205
cis-1,2-Dichloroethene	10.0	9.60		ug/L		96	60 - 140
cis-1,3-Dichloropropene	10.0	9.54		ug/L		95	25 - 175
Cyclohexane	10.0	9.49		ug/L		95	60 - 140
Dibromochloromethane	10.0	9.30		ug/L		93	70 - 135
Dibromomethane	10.0	9.35		ug/L		94	60 - 140
Dichlorodifluoromethane	10.0	8.71		ug/L		87	60 - 140
Di-isopropyl ether (DIPE)	10.0	9.20		ug/L		92	60 - 140
Ethanol	100	113		ug/L		113	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-312209/1003
Matrix: Water
Analysis Batch: 312209

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	9.36		ug/L		94	60 - 140
Ethylbenzene	10.0	9.43		ug/L		94	60 - 140
Hexachloro-1,3-butadiene	10.0	9.11		ug/L		91	60 - 140
Isopropanol	50.0	ND		ug/L		96	60 - 140
Isopropylbenzene	10.0	9.58		ug/L		96	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	9.37		ug/L		94	60 - 140
Methylene Chloride	10.0	9.00		ug/L		90	60 - 140
Naphthalene	10.0	9.20		ug/L		92	60 - 140
n-Butylbenzene	10.0	9.49		ug/L		95	60 - 140
N-Propylbenzene	10.0	9.72		ug/L		97	60 - 140
o-Xylene	10.0	9.41		ug/L		94	60 - 140
m,p-Xylene	20.0	19.6		ug/L		98	60 - 140
p-Isopropyltoluene	10.0	9.34		ug/L		93	60 - 140
sec-Butylbenzene	10.0	9.61		ug/L		96	60 - 140
Styrene	10.0	9.76		ug/L		98	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	9.30		ug/L		93	60 - 140
tert-Butyl alcohol (TBA)	50.0	50.3		ug/L		101	60 - 140
tert-Butylbenzene	10.0	9.51		ug/L		95	60 - 140
Tetrachloroethene	10.0	9.87		ug/L		99	70 - 130
Tetrahydrofuran	10.0	8.66	J,DX	ug/L		87	60 - 140
Toluene	10.0	9.56		ug/L		96	70 - 130
trans-1,2-Dichloroethene	10.0	9.45		ug/L		95	70 - 130
trans-1,3-Dichloropropene	10.0	9.25		ug/L		93	50 - 150
Trichloroethene	10.0	9.36		ug/L		94	65 - 135
Trichlorofluoromethane	10.0	8.33		ug/L		83	50 - 150
Vinyl acetate	10.0	8.90		ug/L		89	60 - 140
Vinyl chloride	10.0	8.77		ug/L		88	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*B4*		*60 - 140*
4-mrof obuorozen9ene (Surr)	*B4*		*60 - 140*
Dizrof obuorof ethane (Surr)	*B2*		*60 - 140*
Toluene-d8 (Surr)	*BB*		*60 - 140*

Lab Sample ID: LCSD 570-312209/4
Matrix: Water
Analysis Batch: 312209

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	9.88		ug/L		99	60 - 140	4	30
1,1,1-Trichloroethane	10.0	8.80		ug/L		88	70 - 130	1	36
1,1,2,2-Tetrachloroethane	10.0	9.79		ug/L		98	60 - 140	6	61
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	8.98		ug/L		90	60 - 140	0	30
1,1,2-Trichloroethane	10.0	9.97		ug/L		100	70 - 130	5	45
1,1-Dichloroethane	10.0	9.24		ug/L		92	70 - 130	0	40
1,1-Dichloroethene	10.0	8.53		ug/L		85	50 - 150	1	32
1,1-Dichloropropene	10.0	9.18		ug/L		92	60 - 140	0	30
1,2,3-Trichlorobenzene	10.0	10.4		ug/L		104	60 - 140	10	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-312209/4
Matrix: Water
Analysis Batch: 312209

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichloropropane			10.0	9.45		ug/L		94	60 - 140	6	30
1,2,4-Trichlorobenzene			10.0	10.4		ug/L		104	60 - 140	11	30
1,2,4-Trimethylbenzene			10.0	9.56		ug/L		96	60 - 140	8	30
1,2-Dibromo-3-Chloropropane			10.0	8.83		ug/L		88	60 - 140	7	30
1,2-Dibromoethane			10.0	10.1		ug/L		101	60 - 140	6	30
1,2-Dichloro-1,1,2-trifluoroethane			10.0	8.80		ug/L		88	60 - 140	0	30
1,2-Dichlorobenzene			10.0	10.5		ug/L		105	65 - 135	9	57
1,2-Dichloroethane			10.0	9.26		ug/L		93	70 - 130	3	49
1,2-Dichloropropane			10.0	9.85		ug/L		98	35 - 165	3	55
1,3,5-Trimethylbenzene			10.0	9.95		ug/L		100	60 - 140	7	30
1,3-Dichlorobenzene			10.0	10.5		ug/L		105	70 - 130	5	43
1,3-Dichloropropane			10.0	10.0		ug/L		100	60 - 140	7	30
1,4-Dichlorobenzene			10.0	10.4		ug/L		104	65 - 135	8	57
2,2-Dichloro-1,1,1-trifluoroethane			10.0	8.98	J,DX	ug/L		90	60 - 140	12	30
2,2-Dichloropropane			10.0	9.59		ug/L		96	60 - 140	1	30
2-Butanone (MEK)			10.0	7.85		ug/L		78	60 - 140	5	30
2-Chloroethyl vinyl ether			10.0	7.36		ug/L		74	1 - 225	7	71
2-Chlorotoluene			10.0	9.88		ug/L		99	60 - 140	6	30
2-Hexanone			10.0	8.61		ug/L		86	60 - 140	4	30
4-Chlorotoluene			10.0	9.96		ug/L		100	60 - 140	6	30
4-Methyl-2-pentanone (MIBK)			10.0	9.35		ug/L		93	60 - 140	2	30
Acetone			10.0	ND		ug/L		81	60 - 140	7	30
Acrolein			20.0	16.8		ug/L		84	60 - 140	2	60
Acrylonitrile			10.0	8.64		ug/L		86	60 - 140	12	60
Benzene			10.0	10.5		ug/L		105	65 - 135	7	61
Bromobenzene			10.0	10.3		ug/L		103	60 - 140	4	30
Bromochloromethane			10.0	10.2		ug/L		102	60 - 140	1	30
Bromodichloromethane			10.0	9.98		ug/L		100	65 - 135	7	56
Bromoform			10.0	9.90		ug/L		99	70 - 130	1	42
Bromomethane			10.0	11.6		ug/L		116	15 - 185	11	61
Carbon disulfide			10.0	8.74		ug/L		87	60 - 140	4	30
Carbon tetrachloride			10.0	8.64		ug/L		86	70 - 130	0	41
Chlorobenzene			10.0	10.4		ug/L		104	65 - 135	7	53
Chloroethane			10.0	9.01		ug/L		90	40 - 160	0	78
Chloroform			10.0	9.09		ug/L		91	70 - 135	1	30
Chloromethane			10.0	9.60		ug/L		96	1 - 205	9	60
cis-1,2-Dichloroethene			10.0	9.51		ug/L		95	60 - 140	1	30
cis-1,3-Dichloropropene			10.0	10.3		ug/L		103	25 - 175	8	58
Cyclohexane			10.0	9.70		ug/L		97	60 - 140	2	30
Dibromochloromethane			10.0	10.1		ug/L		101	70 - 135	8	50
Dibromomethane			10.0	9.56		ug/L		96	60 - 140	2	30
Dichlorodifluoromethane			10.0	9.21		ug/L		92	60 - 140	5	30
Di-isopropyl ether (DIPE)			10.0	9.19		ug/L		92	60 - 140	0	30
Ethanol			100	109		ug/L		109	60 - 140	4	30
Ethyl-t-butyl ether (ETBE)			10.0	9.33		ug/L		93	60 - 140	0	30
Ethylbenzene			10.0	10.0		ug/L		100	60 - 140	6	63
Hexachloro-1,3-butadiene			10.0	10.7		ug/L		107	60 - 140	16	30
Isopropanol			50.0	ND		ug/L		84	60 - 140	13	30
Isopropylbenzene			10.0	10.2		ug/L		102	60 - 140	6	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-312209/4
Matrix: Water
Analysis Batch: 312209

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	9.41		ug/L		94	60 - 140	0	30
Methylene Chloride	10.0	9.36		ug/L		94	60 - 140	4	28
Naphthalene	10.0	10.1		ug/L		101	60 - 140	9	30
n-Butylbenzene	10.0	10.4		ug/L		104	60 - 140	9	30
N-Propylbenzene	10.0	10.4		ug/L		104	60 - 140	7	30
o-Xylene	10.0	10.1		ug/L		101	60 - 140	7	30
m,p-Xylene	20.0	20.0		ug/L		100	60 - 140	2	30
p-Isopropyltoluene	10.0	10.3		ug/L		103	60 - 140	10	30
sec-Butylbenzene	10.0	10.4		ug/L		104	60 - 140	8	30
Styrene	10.0	10.4		ug/L		104	60 - 140	6	30
Tert-amyl-methyl ether (TAME)	10.0	9.95		ug/L		99	60 - 140	7	30
tert-Butyl alcohol (TBA)	50.0	56.5		ug/L		113	60 - 140	12	30
tert-Butylbenzene	10.0	10.4		ug/L		104	60 - 140	9	30
Tetrachloroethene	10.0	10.6		ug/L		106	70 - 130	7	39
Tetrahydrofuran	10.0	8.23	J,DX	ug/L		82	60 - 140	5	30
Toluene	10.0	10.1		ug/L		101	70 - 130	5	41
trans-1,2-Dichloroethene	10.0	9.63		ug/L		96	70 - 130	2	45
trans-1,3-Dichloropropene	10.0	9.82		ug/L		98	50 - 150	6	86
Trichloroethene	10.0	10.3		ug/L		103	65 - 135	10	48
Trichlorofluoromethane	10.0	8.52		ug/L		85	50 - 150	2	84
Vinyl acetate	10.0	8.95		ug/L		89	60 - 140	1	30
Vinyl chloride	10.0	8.88		ug/L		89	5 - 195	1	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*60 - 140*
4-mrof obuorozen9ene (Surr)	*B/*		*60 - 140*
Dizrof obuorof ethane (Surr)	*B1*		*60 - 140*
Toluene-d8 (Surr)	*101*		*60 - 140*

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-312115/7
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/16/23 11:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorozutane (Surr)	*B5*		*65 - 1/ /*		*0/ 3/63 2/ 11:75*	*1*

Lab Sample ID: LCS 570-312115/4
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	17.2		ug/L		86	75 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-312115/4
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dichlorozutane (Surr)	*8B*		*65 - 1/ /*

Lab Sample ID: LCSD 570-312115/5
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	18.6		ug/L		93	75 - 120	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,4-Dichlorozutane (Surr)	*BB*		*65 - 1/ /*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-313228/1-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313228

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		03/21/23 06:13	03/23/23 12:27	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2-Chlorophenol	ND		0.20	0.096	ug/L		03/21/23 06:13	03/23/23 12:27	1
2-Nitrophenol	ND		5.0	3.5	ug/L		03/21/23 06:13	03/23/23 12:27	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		03/21/23 06:13	03/23/23 12:27	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Nitrophenol	ND		5.0	3.4	ug/L		03/21/23 06:13	03/23/23 12:27	1
Acenaphthene	ND		0.20	0.098	ug/L		03/21/23 06:13	03/23/23 12:27	1
Acenaphthylene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Anthracene	ND		0.20	0.084	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzidine	ND		5.0	2.7	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[b]fluoranthene	0.142	J,DX	0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-313228/1-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313228

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		03/21/23 06:13	03/23/23 12:27	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/21/23 06:13	03/23/23 12:27	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		03/21/23 06:13	03/23/23 12:27	1
Chrysene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		03/21/23 06:13	03/23/23 12:27	1
Diethyl phthalate	ND		2.0	0.18	ug/L		03/21/23 06:13	03/23/23 12:27	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		03/21/23 06:13	03/23/23 12:27	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		03/21/23 06:13	03/23/23 12:27	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		03/21/23 06:13	03/23/23 12:27	1
Fluoranthene	ND		0.20	0.10	ug/L		03/21/23 06:13	03/23/23 12:27	1
Fluorene	ND		0.20	0.095	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachloroethane	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Isophorone	ND		0.20	0.099	ug/L		03/21/23 06:13	03/23/23 12:27	1
Naphthalene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Nitrobenzene	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/21/23 06:13	03/23/23 12:27	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/21/23 06:13	03/23/23 12:27	1
Phenanthrene	ND		0.20	0.16	ug/L		03/21/23 06:13	03/23/23 12:27	1
Phenol	ND		1.0	0.52	ug/L		03/21/23 06:13	03/23/23 12:27	1
Pyrene	ND		0.20	0.086	ug/L		03/21/23 06:13	03/23/23 12:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Trizrof ophenol	*62*		*28 - 125*	*0/ 3213/ 06:1/*	*0/ 3/ 3/ 12:25*	*1*
2-Fluoroziphenyl (Surr)	*4B*		*/ 1 - 120*	*0/ 3213/ 06:1/*	*0/ 3/ 3/ 12:25*	*1*
2-Fluorophenol	*/ /*		*15 - 120*	*0/ 3213/ 06:1/*	*0/ 3/ 3/ 12:25*	*1*
Nitrozen9ene-d7	*76*		*25 - 120*	*0/ 3213/ 06:1/*	*0/ 3/ 3/ 12:25*	*1*
Phenol-d6 (Surr)	*22*		*10 - 120*	*0/ 3213/ 06:1/*	*0/ 3/ 3/ 12:25*	*1*
p-Terphenyl-d14 (Surr)	*56*		*47 - 120*	*0/ 3213/ 06:1/*	*0/ 3/ 3/ 12:25*	*1*

Lab Sample ID: LCS 570-313228/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313228

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	7.92	LR	ug/L		40	57 - 130
1,2-Dichlorobenzene	20.0	8.74		ug/L		44	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	13.4		ug/L		67	60 - 115
1,3-Dichlorobenzene	20.0	8.24		ug/L		41	37 - 120
1,4-Dichlorobenzene	20.0	8.74		ug/L		44	39 - 120
2,4,6-Trichlorophenol	20.0	10.4		ug/L		52	52 - 129

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-313228/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 314108
Prep Batch: 313228

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dichlorophenol	20.0	10.3	LR	ug/L		52	53 - 122
2,4-Dimethylphenol	20.0	10.8		ug/L		54	42 - 120
2,4-Dinitrophenol	20.0	6.10		ug/L		31	1 - 173
2,4-Dinitrotoluene	20.0	14.2		ug/L		71	48 - 127
2,6-Dinitrotoluene	20.0	14.0		ug/L		70	68 - 137
2-Chloronaphthalene	20.0	10.3	LR	ug/L		52	65 - 120
2-Chlorophenol	20.0	10.4		ug/L		52	36 - 120
2-Nitrophenol	20.0	8.44	LR	ug/L		42	45 - 167
3,3'-Dichlorobenzidine	20.0	18.8		ug/L		94	8 - 213
4,6-Dinitro-2-methylphenol	20.0	8.77	LR	ug/L		44	53 - 130
4-Bromophenyl phenyl ether	20.0	13.3		ug/L		67	65 - 120
4-Chloro-3-methylphenol	20.0	11.9		ug/L		59	41 - 128
4-Chlorophenyl phenyl ether	20.0	11.8		ug/L		59	38 - 145
4-Nitrophenol	20.0	5.27		ug/L		26	13 - 129
Acenaphthene	20.0	11.2	LR	ug/L		56	60 - 132
Acenaphthylene	20.0	14.0		ug/L		70	54 - 126
Anthracene	20.0	16.5		ug/L		83	43 - 120
Benzidine	20.0	4.02	J,DX	ug/L		20	20 - 164
Benzo[a]anthracene	20.0	18.6		ug/L		93	42 - 133
Benzo[a]pyrene	20.0	18.7		ug/L		94	32 - 148
Benzo[b]fluoranthene	20.0	17.9		ug/L		89	42 - 140
Benzo[g,h,i]perylene	20.0	18.8		ug/L		94	1 - 195
Benzo[k]fluoranthene	20.0	19.4		ug/L		97	25 - 146
bis (2-chloroisopropyl) ether	20.0	11.4	LR	ug/L		57	63 - 139
Bis(2-chloroethoxy)methane	20.0	9.74		ug/L		49	49 - 165
Bis(2-chloroethyl)ether	20.0	11.1		ug/L		55	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	20.0		ug/L		100	29 - 137
Butyl benzyl phthalate	20.0	17.7		ug/L		89	1 - 140
Chrysene	20.0	17.5		ug/L		88	44 - 140
Dibenz(a,h)anthracene	20.0	17.6		ug/L		88	1 - 200
Diethyl phthalate	20.0	15.2		ug/L		76	1 - 120
Dimethyl phthalate	20.0	14.3		ug/L		71	1 - 120
Di-n-butyl phthalate	20.0	18.4		ug/L		92	8 - 120
Di-n-octyl phthalate	20.0	22.2		ug/L		111	19 - 132
Fluoranthene	20.0	17.0		ug/L		85	43 - 121
Fluorene	20.0	12.3	LR	ug/L		61	70 - 120
Hexachlorobenzene	20.0	14.1		ug/L		70	8 - 142
Hexachlorobutadiene	20.0	7.62		ug/L		38	38 - 120
Hexachlorocyclopentadiene	20.0	8.82		ug/L		44	43 - 145
Hexachloroethane	20.0	8.28	LR	ug/L		41	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	17.5		ug/L		88	1 - 151
Isophorone	20.0	11.1		ug/L		55	47 - 180
Naphthalene	20.0	8.44		ug/L		42	36 - 120
Nitrobenzene	20.0	9.94	LR	ug/L		50	54 - 158
N-Nitrosodimethylamine	20.0	7.21		ug/L		36	20 - 120
N-Nitrosodi-n-propylamine	20.0	12.2		ug/L		61	14 - 198
N-Nitrosodiphenylamine	20.0	16.2		ug/L		81	65 - 133
Pentachlorophenol	20.0	8.07		ug/L		40	38 - 152
Phenanthrene	20.0	14.7		ug/L		73	65 - 120

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-313228/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313228

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Phenol			20.0	4.60		ug/L		23	17 - 120		
Pyrene			20.0	17.5		ug/L		88	70 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Trizrof ophenol	*76*		*28 - 125*
2-Fluoroziphenyl (Surr)	*74*		*/ 1 - 120*
2-Fluorophenol	*/ 7*		*15 - 120*
Nitrozen9ene-d7	*7/*		*25 - 120*
Phenol-d6 (Surr)	*26*		*10 - 120*
p-Terphenyl-d14 (Surr)	*B1*		*47 - 120*

Lab Sample ID: LCSD 570-313228/3-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313228

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene			20.0	9.00	LR	ug/L		45	57 - 130	13	30
1,2-Dichlorobenzene			20.0	9.79		ug/L		49	40 - 120	11	20
1,2-Diphenylhydrazine(as Azobenzene)			20.0	15.2		ug/L		76	60 - 115	13	30
1,3-Dichlorobenzene			20.0	9.33		ug/L		47	37 - 120	12	20
1,4-Dichlorobenzene			20.0	9.95		ug/L		50	39 - 120	13	20
2,4,6-Trichlorophenol			20.0	12.9		ug/L		64	52 - 129	21	35
2,4-Dichlorophenol			20.0	12.0		ug/L		60	53 - 122	15	30
2,4-Dimethylphenol			20.0	12.5		ug/L		62	42 - 120	15	35
2,4-Dinitrophenol			20.0	7.47		ug/L		37	1 - 173	20	79
2,4-Dinitrotoluene			20.0	13.4		ug/L		67	48 - 127	6	25
2,6-Dinitrotoluene			20.0	14.4		ug/L		72	68 - 137	3	29
2-Chloronaphthalene			20.0	12.5	LR BA	ug/L		62	65 - 120	19	15
2-Chlorophenol			20.0	12.3		ug/L		62	36 - 120	17	37
2-Nitrophenol			20.0	7.86	LR	ug/L		39	45 - 167	7	33
3,3'-Dichlorobenzidine			20.0	20.1		ug/L		101	8 - 213	7	65
4,6-Dinitro-2-methylphenol			20.0	9.32	LR	ug/L		47	53 - 130	6	122
4-Bromophenyl phenyl ether			20.0	14.8		ug/L		74	65 - 120	11	26
4-Chloro-3-methylphenol			20.0	14.1		ug/L		71	41 - 128	17	44
4-Chlorophenyl phenyl ether			20.0	14.1		ug/L		70	38 - 145	18	36
4-Nitrophenol			20.0	5.61		ug/L		28	13 - 129	6	79
Acenaphthene			20.0	13.7		ug/L		68	60 - 132	20	29
Acenaphthylene			20.0	16.3		ug/L		81	54 - 126	15	45
Anthracene			20.0	17.8		ug/L		89	43 - 120	8	40
Benzidine			20.0	4.48	J,DX	ug/L		22	20 - 164	11	30
Benzo[a]anthracene			20.0	19.7		ug/L		99	42 - 133	6	32
Benzo[a]pyrene			20.0	20.1		ug/L		100	32 - 148	7	43
Benzo[b]fluoranthene			20.0	18.7		ug/L		93	42 - 140	4	43
Benzo[g,h,i]perylene			20.0	18.8		ug/L		94	1 - 195	0	61
Benzo[k]fluoranthene			20.0	20.3		ug/L		102	25 - 146	5	38
bis (2-chloroisopropyl) ether			20.0	12.4	LR	ug/L		62	63 - 139	8	46
Bis(2-chloroethoxy)methane			20.0	11.5		ug/L		58	49 - 165	17	32
Bis(2-chloroethyl)ether			20.0	12.5		ug/L		62	43 - 126	12	65

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-313228/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 314108
Prep Batch: 313228

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate	20.0	22.2		ug/L		111	29 - 137	10	50
Butyl benzyl phthalate	20.0	20.3		ug/L		101	1 - 140	13	36
Chrysene	20.0	18.3		ug/L		91	44 - 140	4	53
Dibenz(a,h)anthracene	20.0	18.1		ug/L		91	1 - 200	3	75
Diethyl phthalate	20.0	17.0		ug/L		85	1 - 120	11	60
Dimethyl phthalate	20.0	16.3		ug/L		82	1 - 120	13	110
Di-n-butyl phthalate	20.0	19.7		ug/L		99	8 - 120	7	28
Di-n-octyl phthalate	20.0	23.9		ug/L		119	19 - 132	7	42
Fluoranthene	20.0	17.7		ug/L		88	43 - 121	4	40
Fluorene	20.0	14.6		ug/L		73	70 - 120	17	23
Hexachlorobenzene	20.0	15.1		ug/L		76	8 - 142	7	33
Hexachlorobutadiene	20.0	8.69		ug/L		43	38 - 120	13	38
Hexachlorocyclopentadiene	20.0	10.6		ug/L		53	43 - 145	18	22
Hexachloroethane	20.0	8.90	LR	ug/L		44	55 - 120	7	32
Indeno[1,2,3-cd]pyrene	20.0	18.0		ug/L		90	1 - 151	3	60
Isophorone	20.0	12.8		ug/L		64	47 - 180	15	56
Naphthalene	20.0	9.65		ug/L		48	36 - 120	13	39
Nitrobenzene	20.0	10.8		ug/L		54	54 - 158	8	37
N-Nitrosodimethylamine	20.0	8.51		ug/L		43	20 - 120	17	21
N-Nitrosodi-n-propylamine	20.0	13.8		ug/L		69	14 - 198	12	52
N-Nitrosodiphenylamine	20.0	18.5		ug/L		92	65 - 133	13	20
Pentachlorophenol	20.0	9.04		ug/L		45	38 - 152	11	52
Phenanthrene	20.0	16.1		ug/L		81	65 - 120	9	24
Phenol	20.0	5.51		ug/L		28	17 - 120	18	39
Pyrene	20.0	17.7		ug/L		88	70 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Trizrof ophenol	*68*		*28 - 125*
2-Fluoroziphenyl (Surr)	*6B*		*/ 1 - 120*
2-Fluorophenol	*42*		*15 - 120*
Nitrozen9ene-d7	*77*		*25 - 120*
Phenol-d6 (Surr)	*/ 0*		*10 - 120*
p-Terphenyl-d14 (Surr)	*B5*		*47 - 120*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-313170/33
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 313170

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/21/23 00:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-mrof obuorozen9ene (Surr)	*85*		*20 - 144*		*0/ 3213 2/ 00:41*	*1*

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCS 570-313170/31
Matrix: Water
Analysis Batch: 313170

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	1920		ug/L		100	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-mrof obuorozen9ene (Surr)	*100*		*20 - 144*

Lab Sample ID: LCSD 570-313170/32
Matrix: Water
Analysis Batch: 313170

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	1920		ug/L		100	71 - 120	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-mrof obuorozen9ene (Surr)	*BB*		*20 - 144*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-313442/1-A
Matrix: Water
Analysis Batch: 313326

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313442

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/21/23 13:46	03/21/23 17:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*104*		*7/ - 171*	*0/ 3213 2/ 1/ :46*	*0/ 3213 2/ 15:24*	*1*

Lab Sample ID: LCS 570-313442/2-A
Matrix: Water
Analysis Batch: 313326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313442

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			4.00	4.11		mg/L		103	65 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*107*		*7/ - 171*

Lab Sample ID: LCSD 570-313442/3-A
Matrix: Water
Analysis Batch: 313326

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313442

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			4.00	4.04		mg/L		101	65 - 129	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*104*		*7/ - 171*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-312029/5
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/16/23 02:05	1

Lab Sample ID: LCS 570-312029/6
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	49.2		ug/L		98	95 - 107

Lab Sample ID: LCSD 570-312029/7
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	49.7		ug/L		99	95 - 107	1	20

Lab Sample ID: MB 570-312030/1-A
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/16/23 07:54	1

Lab Sample ID: LCS 570-312030/2-A
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	49.1		ug/L		98	95 - 107

Lab Sample ID: LCSD 570-312030/3-A
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	49.4		ug/L		99	95 - 107	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-311971/5
Matrix: Water
Analysis Batch: 311971

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/15/23 22:26	1
Fluoride	ND		0.10	0.046	mg/L			03/15/23 22:26	1
Sulfate	ND		1.0	0.24	mg/L			03/15/23 22:26	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 570-311971/6
Matrix: Water
Analysis Batch: 311971

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			50.0	49.5		mg/L		99	90 - 110		
Fluoride			2.50	2.52		mg/L		101	90 - 110		
Sulfate			50.0	48.6		mg/L		97	90 - 110		

Lab Sample ID: LCSD 570-311971/7
Matrix: Water
Analysis Batch: 311971

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			50.0	49.4		mg/L		99	90 - 110	0	15
Fluoride			2.50	2.51		mg/L		100	90 - 110	0	15
Sulfate			50.0	48.5		mg/L		97	90 - 110	0	15

Lab Sample ID: MB 570-311972/5
Matrix: Water
Analysis Batch: 311972

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/15/23 22:26	1
Nitrate as N	ND		0.10	0.020	mg/L			03/15/23 22:26	1

Lab Sample ID: LCS 570-311972/6
Matrix: Water
Analysis Batch: 311972

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N			2.50	2.44		mg/L		97	90 - 110		
Nitrate as N			5.00	4.99		mg/L		100	90 - 110		

Lab Sample ID: LCSD 570-311972/7
Matrix: Water
Analysis Batch: 311972

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.44		mg/L		98	90 - 110	0	15
Nitrate as N			5.00	4.97		mg/L		99	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-312272/7
Matrix: Water
Analysis Batch: 312272

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/16/23 18:35	1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCS 570-312272/8
Matrix: Water
Analysis Batch: 312272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.1		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-312272/9
Matrix: Water
Analysis Batch: 312272

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.8		ug/L		99	85 - 115	1	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-312427/1-A
Matrix: Water
Analysis Batch: 312628

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 312427

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		03/17/23 07:46	03/17/23 12:55	1

Lab Sample ID: LCS 570-312427/2-A
Matrix: Water
Analysis Batch: 312628

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 312427

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	480	J,DX	ug/L		96	85 - 115

Lab Sample ID: LCSD 570-312427/3-A
Matrix: Water
Analysis Batch: 312628

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 312427

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	474	J,DX	ug/L		95	85 - 115	1	20

Lab Sample ID: MB 570-312534/1-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			03/17/23 19:29	1

Lab Sample ID: LCS 570-312534/2-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	446	J,DX	ug/L		89	85 - 115

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 570-312534/3-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	428	J,DX	ug/L		86	85 - 115	4	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-312429/1-A
Matrix: Water
Analysis Batch: 312598

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 312429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		03/17/23 07:59	03/17/23 11:36	1
Silver	ND		1.0	0.23	ug/L		03/17/23 07:59	03/17/23 11:36	1
Arsenic	ND		1.0	0.16	ug/L		03/17/23 07:59	03/17/23 11:36	1
Barium	ND		1.0	0.17	ug/L		03/17/23 07:59	03/17/23 11:36	1
Beryllium	ND		0.50	0.26	ug/L		03/17/23 07:59	03/17/23 11:36	1
Cadmium	ND		1.0	0.13	ug/L		03/17/23 07:59	03/17/23 11:36	1
Chromium	0.163	J,DX	2.0	0.14	ug/L		03/17/23 07:59	03/17/23 11:36	1
Cobalt	ND		1.0	0.14	ug/L		03/17/23 07:59	03/17/23 11:36	1
Copper	ND		2.0	0.32	ug/L		03/17/23 07:59	03/17/23 11:36	1
Iron	ND		20	3.7	ug/L		03/17/23 07:59	03/17/23 11:36	1
Manganese	ND		1.0	0.41	ug/L		03/17/23 07:59	03/17/23 11:36	1
Nickel	ND		2.0	0.17	ug/L		03/17/23 07:59	03/17/23 11:36	1
Lead	ND		1.0	0.12	ug/L		03/17/23 07:59	03/17/23 11:36	1
Antimony	ND		2.0	0.36	ug/L		03/17/23 07:59	03/17/23 11:36	1
Zinc	ND		20	2.8	ug/L		03/17/23 07:59	03/17/23 11:36	1
Selenium	ND		2.0	0.52	ug/L		03/17/23 07:59	03/17/23 11:36	1
Thallium	ND		1.0	0.11	ug/L		03/17/23 07:59	03/17/23 11:36	1

Lab Sample ID: LCS 570-312429/2-A
Matrix: Water
Analysis Batch: 312598

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 312429

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum			80.0	76.5		ug/L		96	85 - 115
Silver			80.0	80.6		ug/L		101	85 - 115
Arsenic			80.0	80.5		ug/L		101	85 - 115
Barium			80.0	79.3		ug/L		99	85 - 115
Beryllium			80.0	79.1		ug/L		99	85 - 115
Cadmium			80.0	80.4		ug/L		101	85 - 115
Chromium			80.0	81.7		ug/L		102	85 - 115
Cobalt			80.0	81.0		ug/L		101	85 - 115
Copper			80.0	80.9		ug/L		101	85 - 115
Iron			800	827		ug/L		103	85 - 115
Manganese			80.0	81.0		ug/L		101	85 - 115
Nickel			80.0	82.3		ug/L		103	85 - 115
Lead			80.0	81.1		ug/L		101	85 - 115
Antimony			80.0	81.2		ug/L		102	85 - 115
Zinc			80.0	78.6		ug/L		98	85 - 115
Selenium			80.0	76.1		ug/L		95	85 - 115
Thallium			80.0	78.2		ug/L		98	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-312429/3-A
Matrix: Water
Analysis Batch: 312598

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 312429

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum			80.0	76.1		ug/L		95	85 - 115	1	20
Silver			80.0	79.4		ug/L		99	85 - 115	2	20
Arsenic			80.0	78.7		ug/L		98	85 - 115	2	20
Barium			80.0	78.7		ug/L		98	85 - 115	1	20
Beryllium			80.0	78.8		ug/L		99	85 - 115	0	20
Cadmium			80.0	79.1		ug/L		99	85 - 115	2	20
Chromium			80.0	80.0		ug/L		100	85 - 115	2	20
Cobalt			80.0	79.5		ug/L		99	85 - 115	2	20
Copper			80.0	80.7		ug/L		101	85 - 115	0	20
Iron			800	824		ug/L		103	85 - 115	0	20
Manganese			80.0	80.5		ug/L		101	85 - 115	1	20
Nickel			80.0	80.5		ug/L		101	85 - 115	2	20
Lead			80.0	79.3		ug/L		99	85 - 115	2	20
Antimony			80.0	81.8		ug/L		102	85 - 115	1	20
Zinc			80.0	77.2		ug/L		97	85 - 115	2	20
Selenium			80.0	76.6		ug/L		96	85 - 115	1	20
Thallium			80.0	76.3		ug/L		95	85 - 115	2	20

Lab Sample ID: MB 570-312120/1-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			03/16/23 11:52	1
Silver	ND		1.0	0.23	ug/L			03/16/23 11:52	1
Arsenic	ND		1.0	0.16	ug/L			03/16/23 11:52	1
Barium	ND		1.0	0.17	ug/L			03/16/23 11:52	1
Beryllium	ND		0.50	0.26	ug/L			03/16/23 11:52	1
Cadmium	ND		1.0	0.13	ug/L			03/16/23 11:52	1
Chromium	ND		2.0	0.14	ug/L			03/16/23 11:52	1
Cobalt	ND		1.0	0.14	ug/L			03/16/23 11:52	1
Copper	ND		2.0	0.32	ug/L			03/16/23 11:52	1
Iron	ND		20	3.7	ug/L			03/16/23 11:52	1
Manganese	ND		1.0	0.41	ug/L			03/16/23 11:52	1
Nickel	ND		2.0	0.17	ug/L			03/16/23 11:52	1
Lead	ND		1.0	0.12	ug/L			03/16/23 11:52	1
Antimony	ND		2.0	0.36	ug/L			03/16/23 11:52	1
Zinc	ND		20	2.8	ug/L			03/16/23 11:52	1
Selenium	ND		2.0	0.52	ug/L			03/16/23 11:52	1
Thallium	ND		1.0	0.11	ug/L			03/16/23 11:52	1

Lab Sample ID: LCS 570-312120/2-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum			80.0	77.6		ug/L		97	85 - 115
Silver			80.0	77.7		ug/L		97	85 - 115
Arsenic			80.0	77.3		ug/L		97	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-312120/2-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	80.0	78.3		ug/L		98	85 - 115
Beryllium	80.0	78.9		ug/L		99	85 - 115
Cadmium	80.0	77.6		ug/L		97	85 - 115
Chromium	80.0	78.2		ug/L		98	85 - 115
Cobalt	80.0	77.3		ug/L		97	85 - 115
Copper	80.0	77.9		ug/L		97	85 - 115
Iron	800	797		ug/L		100	85 - 115
Manganese	80.0	79.1		ug/L		99	85 - 115
Nickel	80.0	77.8		ug/L		97	85 - 115
Lead	80.0	80.3		ug/L		100	85 - 115
Antimony	80.0	77.4		ug/L		97	85 - 115
Zinc	80.0	75.1		ug/L		94	85 - 115
Selenium	80.0	75.4		ug/L		94	85 - 115
Thallium	80.0	77.2		ug/L		96	85 - 115

Lab Sample ID: LCSD 570-312120/3-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	80.2		ug/L		100	85 - 115	3	20
Silver	80.0	79.8		ug/L		100	85 - 115	3	20
Arsenic	80.0	79.6		ug/L		100	85 - 115	3	20
Barium	80.0	79.5		ug/L		99	85 - 115	2	20
Beryllium	80.0	82.0		ug/L		102	85 - 115	4	20
Cadmium	80.0	79.6		ug/L		99	85 - 115	3	20
Chromium	80.0	79.6		ug/L		99	85 - 115	2	20
Cobalt	80.0	78.6		ug/L		98	85 - 115	2	20
Copper	80.0	79.2		ug/L		99	85 - 115	2	20
Iron	800	802		ug/L		100	85 - 115	1	20
Manganese	80.0	80.3		ug/L		100	85 - 115	2	20
Nickel	80.0	79.1		ug/L		99	85 - 115	2	20
Lead	80.0	82.0		ug/L		102	85 - 115	2	20
Antimony	80.0	79.8		ug/L		100	85 - 115	3	20
Zinc	80.0	76.9		ug/L		96	85 - 115	2	20
Selenium	80.0	79.0		ug/L		99	85 - 115	5	20
Thallium	80.0	79.5		ug/L		99	85 - 115	3	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-312913/1-A
Matrix: Water
Analysis Batch: 313301

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312913

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/20/23 07:25	03/21/23 09:05	1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 570-312913/2-A
Matrix: Water
Analysis Batch: 313301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312913

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	37.0		mg/L		92	78 - 114

Lab Sample ID: LCSD 570-312913/3-A
Matrix: Water
Analysis Batch: 313301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 312913

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	39.0		mg/L		98	78 - 114	5	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-315112/5-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315112

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/27/23 14:02	03/27/23 15:47	1

Lab Sample ID: LCS 570-315112/6-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315112

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.494		mg/L		99	90 - 110

Lab Sample ID: LCSD 570-315112/7-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315112

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.500		mg/L		100	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309190/11
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/27/23 12:56	1

Lab Sample ID: LCS 570-309190/12
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	259		ug/L		104	90 - 110

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: LCSD 570-309190/13
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	271		ug/L		109	90 - 110	5	20

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-312018/1
Matrix: Water
Analysis Batch: 312018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			1000	1000		NTU		100.6	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-312018/2
Matrix: Water
Analysis Batch: 312018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			10.0	10		NTU		99.6	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-312018/3
Matrix: Water
Analysis Batch: 312018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			0.0200	ND		NTU		100.0	0.0 - 200.0		

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-313959/7
Matrix: Water
Analysis Batch: 313959

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/22/23 19:27	1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-313188/1
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/20/23 21:08	1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 570-313188/2
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Dissolved Solids			1000	1040		mg/L		104	84 - 108		

Lab Sample ID: LCSD 570-313188/3
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids			1000	1040		mg/L		104	84 - 108	0	10

Lab Sample ID: 570-131262-1 DU
Matrix: Water
Analysis Batch: 313188

Client Sample ID: EPBLLC_20230315
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1100			1070		mg/L				0.4	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-313066/1
Matrix: Water
Analysis Batch: 313066

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/20/23 13:31	1

Lab Sample ID: LCS 570-313066/2
Matrix: Water
Analysis Batch: 313066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	97.0		mg/L		97	77 - 116		

Lab Sample ID: LCSD 570-313066/3
Matrix: Water
Analysis Batch: 313066

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	97.0		mg/L		97	77 - 116	0	10

Lab Sample ID: 570-131262-1 DU
Matrix: Water
Analysis Batch: 313066

Client Sample ID: EPBLLC_20230315
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	890			862		mg/L				3	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCS 570-312138/2-A
Matrix: Water
Analysis Batch: 313425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312138

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	176		mg/L		89	84.6 - 115.4

Lab Sample ID: USB 570-313425/2
Matrix: Water
Analysis Batch: 313425

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			03/16/23 10:27	1

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-316478/4
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			03/30/23 22:04	1

Lab Sample ID: LCS 570-316478/5
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon, Total Organic	5.03	4.91		mg/L		98	85 - 115

Lab Sample ID: LCSD 570-316478/6
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic	5.03	4.88		mg/L		97	85 - 115	1	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-312366/5-A
Matrix: Water
Analysis Batch: 312365

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312366

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/16/23 19:30	03/16/23 20:46	1

Lab Sample ID: LCS 570-312366/6-A
Matrix: Water
Analysis Batch: 312365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312366

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	0.500	0.433		mg/L		87	83 - 122

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: LCSD 570-312366/7-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 312365
Prep Batch: 312366

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.433		mg/L		87	83 - 122	0	10

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - W86

Job ID: 570-121949-1

GC/MS VOA

Analysis Batch: 312115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	E940B SIM	
MB 570-219115/7	Method BlanT	3otal/WA	6 ater	E940B SIM	
LCS 570-219115/N	Lab Control Sak mle	3otal/WA	6 ater	E940B SIM	
LCSD 570-219115/5	Lab Control Sak mle Dpm	3otal/WA	6 ater	E940B SIM	

Analysis Batch: 312209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	49N.1	
570-121949-9	3B-90920215-1	3otal/WA	6 ater	49N.1	
MB 570-21990u/4	Method BlanT	3otal/WA	6 ater	49N.1	
LCS 570-21990u/1002	Lab Control Sak mle	3otal/WA	6 ater	49N.1	
LCSD 570-21990u/N	Lab Control Sak mle Dpm	3otal/WA	6 ater	49N.1	

GC/MS Semi VOA

Prep Batch: 313228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	495	
MB 570-21299E/1-A	Method BlanT	3otal/WA	6 ater	495	
LCS 570-21299E/9-A	Lab Control Sak mle	3otal/WA	6 ater	495	
LCSD 570-21299E/2-A	Lab Control Sak mle Dpm	3otal/WA	6 ater	495	

Analysis Batch: 314108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	495.1 SIM	21299E
MB 570-21299E/1-A	Method BlanT	3otal/WA	6 ater	495.1 SIM	21299E
LCS 570-21299E/9-A	Lab Control Sak mle	3otal/WA	6 ater	495.1 SIM	21299E
LCSD 570-21299E/2-A	Lab Control Sak mle Dpm	3otal/WA	6 ater	495.1 SIM	21299E

GC VOA

Analysis Batch: 313170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	E015B	
MB 570-212170/22	Method BlanT	3otal/WA	6 ater	E015B	
LCS 570-212170/21	Lab Control Sak mle	3otal/WA	6 ater	E015B	
LCSD 570-212170/29	Lab Control Sak mle Dpm	3otal/WA	6 ater	E015B	

GC Semi VOA

Analysis Batch: 313326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-212NN9/1-A	Method BlanT	3otal/WA	6 ater	E015B	212NN9
LCS 570-212NN9/9-A	Lab Control Sak mle	3otal/WA	6 ater	E015B	212NN9
LCSD 570-212NN9/2-A	Lab Control Sak mle Dpm	3otal/WA	6 ater	E015B	212NN9

Prep Batch: 313442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	2510C	
MB 570-212NN9/1-A	Method BlanT	3otal/WA	6 ater	2510C	
LCS 570-212NN9/9-A	Lab Control Sak mle	3otal/WA	6 ater	2510C	
LCSD 570-212NN9/2-A	Lab Control Sak mle Dpm	3otal/WA	6 ater	2510C	

GC Semi VOA

Analysis Batch: 314628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	E015B	212NN9

HPLC/IC

Analysis Batch: 311971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1 - DL	8PBLLC_90920215	3otal/WA	6 ater	200.0	
MB 570-211u71/5	Method BlanT	3otal/WA	6 ater	200.0	
LCS 570-211u71/4	Lab Control Sak mle	3otal/WA	6 ater	200.0	
LCSD 570-211u71/7	Lab Control Sak mle Dpm	3otal/WA	6 ater	200.0	

Analysis Batch: 311972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	200.0	
MB 570-211u79/5	Method BlanT	3otal/WA	6 ater	200.0	
LCS 570-211u79/4	Lab Control Sak mle	3otal/WA	6 ater	200.0	
LCSD 570-211u79/7	Lab Control Sak mle Dpm	3otal/WA	6 ater	200.0	

Analysis Batch: 312029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	Dissolved	6 ater	91E.4	219020
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	91E.4	
MB 570-21909u/5	Method BlanT	3otal/WA	6 ater	91E.4	
MB 570-219020/1-A	Method BlanT	Dissolved	6 ater	91E.4	219020
LCS 570-21909u/4	Lab Control Sak mle	3otal/WA	6 ater	91E.4	
LCS 570-219020/9-A	Lab Control Sak mle	Dissolved	6 ater	91E.4	219020
LCSD 570-21909u/7	Lab Control Sak mle Dpm	3otal/WA	6 ater	91E.4	
LCSD 570-219020/2-A	Lab Control Sak mle Dpm	Dissolved	6 ater	91E.4	219020

Filtration Batch: 312030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	Dissolved	6 ater	Filtration	
MB 570-219020/1-A	Method BlanT	Dissolved	6 ater	Filtration	
LCS 570-219020/9-A	Lab Control Sak mle	Dissolved	6 ater	Filtration	
LCSD 570-219020/2-A	Lab Control Sak mle Dpm	Dissolved	6 ater	Filtration	

Analysis Batch: 312272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	21N.0	
MB 570-219979/7	Method BlanT	3otal/WA	6 ater	21N.0	
LCS 570-219979/E	Lab Control Sak mle	3otal/WA	6 ater	21N.0	
LCSD 570-219979/u	Lab Control Sak mle Dpm	3otal/WA	6 ater	21N.0	

Analysis Batch: 313055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	WO9WO2 Calc	

Metals

Analysis Batch: 311940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal Recoverable	6 ater	SM 92N0B	

Metals

Filtration Batch: 312120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	Dissolved	6 ater	Filtration	
MB 570-219190/1-A	Method BlanT	Dissolved	6 ater	Filtration	
LCS 570-219190/9-A	Lab Control Sak mle	Dissolved	6 ater	Filtration	
LCSD 570-219190/2-A	Lab Control Sak mle Dpm	Dissolved	6 ater	Filtration	

Analysis Batch: 312206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	Dissolved	6 ater	900.E	219190
MB 570-219190/1-A	Method BlanT	Dissolved	6 ater	900.E	219190
LCS 570-219190/9-A	Lab Control Sak mle	Dissolved	6 ater	900.E	219190
LCSD 570-219190/2-A	Lab Control Sak mle Dpm	Dissolved	6 ater	900.E	219190

Analysis Batch: 312313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	Dissolved	6 ater	SM 92N0B	

Prep Batch: 312427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal Recoverable	6 ater	900.7	
MB 570-219N97/1-A	Method BlanT	3otal Recoverable	6 ater	900.7	
LCS 570-219N97/9-A	Lab Control Sak mle	3otal Recoverable	6 ater	900.7	
LCSD 570-219N97/2-A	Lab Control Sak mle Dpm	3otal Recoverable	6 ater	900.7	

Prep Batch: 312429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal Recoverable	6 ater	900.E	
MB 570-219N9u/1-A	Method BlanT	3otal Recoverable	6 ater	900.E	
LCS 570-219N9u/9-A	Lab Control Sak mle	3otal Recoverable	6 ater	900.E	
LCSD 570-219N9u/2-A	Lab Control Sak mle Dpm	3otal Recoverable	6 ater	900.E	

Filtration Batch: 312534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	Dissolved	6 ater	Filtration	
MB 570-21952N/1-A	Method BlanT	Dissolved	6 ater	Filtration	
LCS 570-21952N/9-A	Lab Control Sak mle	Dissolved	6 ater	Filtration	
LCSD 570-21952N/2-A	Lab Control Sak mle Dpm	Dissolved	6 ater	Filtration	

Analysis Batch: 312598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal Recoverable	6 ater	900.E	219N9u
570-121949-1	8PBLLC_90920215	3otal Recoverable	6 ater	900.E	219N9u
MB 570-219N9u/1-A	Method BlanT	3otal Recoverable	6 ater	900.E	219N9u
LCS 570-219N9u/9-A	Lab Control Sak mle	3otal Recoverable	6 ater	900.E	219N9u
LCSD 570-219N9u/2-A	Lab Control Sak mle Dpm	3otal Recoverable	6 ater	900.E	219N9u

Analysis Batch: 312628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal Recoverable	6 ater	900.7 Rev N.N	219N97
MB 570-219N97/1-A	Method BlanT	3otal Recoverable	6 ater	900.7 Rev N.N	219N97
LCS 570-219N97/9-A	Lab Control Sak mle	3otal Recoverable	6 ater	900.7 Rev N.N	219N97
LCSD 570-219N97/2-A	Lab Control Sak mle Dpm	3otal Recoverable	6 ater	900.7 Rev N.N	219N97

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - W86

Job ID: 570-121949-1

Metals

Analysis Batch: 312749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	Dissolved	6ater	900.7 Rev N.N	21952N
MB 570-21952N/1-A	Method BlanT	Dissolved	6ater	900.7 Rev N.N	21952N
LCS 570-21952N/9-A	Lab Control Sak mle	Dissolved	6ater	900.7 Rev N.N	21952N
LCSD 570-21952N/2-A	Lab Control Sak mle Dpm	Dissolved	6ater	900.7 Rev N.N	21952N

General Chemistry

Analysis Batch: 309190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6ater	Uelada 01	
MB 570-20u1u0/11	Method BlanT	3otal/WA	6ater	Uelada 01	
LCS 570-20u1u0/19	Lab Control Sak mle	3otal/WA	6ater	Uelada 01	
LCSD 570-20u1u0/12	Lab Control Sak mle Dpm	3otal/WA	6ater	Uelada 01	

Analysis Batch: 312018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6ater	SM 9120B	
LCSSRM 570-21901E/1	Lab Control Sak mle	3otal/WA	6ater	SM 9120B	
LCSSRM 570-21901E/9	Lab Control Sak mle	3otal/WA	6ater	SM 9120B	
LCSSRM 570-21901E/2	Lab Control Sak mle	3otal/WA	6ater	SM 9120B	

Prep Batch: 312138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6ater	BOD Prem	
LCS 570-21912E/9-A	Lab Control Sak mle	3otal/WA	6ater	BOD Prem	

Analysis Batch: 312256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6ater	SM 95N0F	

Analysis Batch: 312365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6ater	SM 55N0C	219244
MB 570-219244/5-A	Method BlanT	3otal/WA	6ater	SM 55N0C	219244
LCS 570-219244/4-A	Lab Control Sak mle	3otal/WA	6ater	SM 55N0C	219244
LCSD 570-219244/7-A	Lab Control Sak mle Dpm	3otal/WA	6ater	SM 55N0C	219244

Prep Batch: 312366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6ater	SM 55N0C	
MB 570-219244/5-A	Method BlanT	3otal/WA	6ater	SM 55N0C	
LCS 570-219244/4-A	Lab Control Sak mle	3otal/WA	6ater	SM 55N0C	
LCSD 570-219244/7-A	Lab Control Sak mle Dpm	3otal/WA	6ater	SM 55N0C	

Prep Batch: 312913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6ater	144NA	
MB 570-219u12/1-A	Method BlanT	3otal/WA	6ater	144NA	
LCS 570-219u12/9-A	Lab Control Sak mle	3otal/WA	6ater	144NA	
LCSD 570-219u12/2-A	Lab Control Sak mle Dpm	3otal/WA	6ater	144NA	

General Chemistry

Analysis Batch: 313066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	SM 95N0D	
MB 570-212044/1	Method BlanT	3otal/WA	6 ater	SM 95N0D	
LCS 570-212044/9	Lab Control Sak mle	3otal/WA	6 ater	SM 95N0D	
LCSD 570-212044/2	Lab Control Sak mle Dpm	3otal/WA	6 ater	SM 95N0D	
570-121949-1 DK	8PBLLC_90920215	3otal/WA	6 ater	SM 95N0D	

Analysis Batch: 313188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	SM 95N0C	
MB 570-2121EE/1	Method BlanT	3otal/WA	6 ater	SM 95N0C	
LCS 570-2121EE/9	Lab Control Sak mle	3otal/WA	6 ater	SM 95N0C	
LCSD 570-2121EE/2	Lab Control Sak mle Dpm	3otal/WA	6 ater	SM 95N0C	
570-121949-1 DK	8PBLLC_90920215	3otal/WA	6 ater	SM 95N0C	

Analysis Batch: 313301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	144NA	219u12
MB 570-219u12/1-A	Method BlanT	3otal/WA	6 ater	144NA	219u12
LCS 570-219u12/9-A	Lab Control Sak mle	3otal/WA	6 ater	144NA	219u12
LCSD 570-219u12/2-A	Lab Control Sak mle Dpm	3otal/WA	6 ater	144NA	219u12

Analysis Batch: 313425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	SM 5910B	21912E
KSB 570-212N95/9	Method BlanT	3otal/WA	6 ater	SM 5910B	
LCS 570-21912E/9-A	Lab Control Sak mle	3otal/WA	6 ater	SM 5910B	21912E

Analysis Batch: 313959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	SM 9510B	
MB 570-212u5u/7	Method BlanT	3otal/WA	6 ater	SM 9510B	

Analysis Batch: 314522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	Dissolved	6 ater	91E.4 CR2	
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	91E.4 CR2	

Prep Batch: 315112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	Distill/Ak k onia	
MB 570-215119/5-A	Method BlanT	3otal/WA	6 ater	Distill/Ak k onia	
LCS 570-215119/4-A	Lab Control Sak mle	3otal/WA	6 ater	Distill/Ak k onia	
LCSD 570-215119/7-A	Lab Control Sak mle Dpm	3otal/WA	6 ater	Distill/Ak k onia	

Analysis Batch: 315123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	250.1	215119
MB 570-215119/5-A	Method BlanT	3otal/WA	6 ater	250.1	215119
LCS 570-215119/4-A	Lab Control Sak mle	3otal/WA	6 ater	250.1	215119
LCSD 570-215119/7-A	Lab Control Sak mle Dpm	3otal/WA	6 ater	250.1	215119

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - W86

Job ID: 570-121949-1

General Chemistry

Analysis Batch: 316478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	SM 5210D	
MB 570-214N7E/N	Method BlanT	3otal/WA	6 ater	SM 5210D	
LCS 570-214N7E/5	Lab Control Sak mle	3otal/WA	6 ater	SM 5210D	
LCSD 570-214N7E/4	Lab Control Sak mle Dpm	3otal/WA	6 ater	SM 5210D	

Geotechnical

Analysis Batch: 313070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-121949-1	8PBLLC_90920215	3otal/WA	6 ater	DNN4N	
LCS 570-212070/91	Lab Control Sak mle	3otal/WA	6 ater	DNN4N	
LCSD 570-212070/92	Lab Control Sak mle Dpm	3otal/WA	6 ater	DNN4N	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-1

Client Sample ID: EPBLLC_20230315

Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	312209	03/16/23 16:58	N1A	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	312115	03/16/23 18:29	G6NI	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			1029 mL	2 mL	313228	03/22/23 05:11	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	314108	03/23/23 20:51	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	313170	03/21/23 06:33	A9VE	EET CAL 4
	Instrument ID: GC1									
Total/NA	Prep	3510C			262.5 mL	2.5 mL	313442	03/21/23 13:46	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	314628	03/25/23 08:27	A1W	EET CAL 4
	Instrument ID: GC48									
Dissolved	Filtration	Filtration			100 mL	100 mL	312030	03/16/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	312029	03/16/23 08:38	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	218.6		1	4 mL	4 mL	312029	03/16/23 06:38	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	300.0		2	4 mL	4 mL	311972	03/16/23 01:17	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0	DL	10	4 mL	4 mL	311971	03/16/23 01:35	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	314.0		1	4 mL	4 mL	312272	03/17/23 00:51	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			313055	03/20/23 12:49	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Dissolved	Filtration	Filtration			50 mL	50 mL	312534	03/17/23 10:56	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			312749	03/17/23 19:51	P1R	EET CAL 4
	Instrument ID: ICP10									
Total Recoverable	Prep	200.7			50 mL	50 mL	312427	03/17/23 07:46	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			312628	03/17/23 14:55	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	312120	03/16/23 10:02	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			312206	03/16/23 12:24	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	312429	03/17/23 07:59	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			312598	03/17/23 11:49	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	312429	03/17/23 07:59	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		20			312598	03/17/23 11:53	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Analysis	SM 2340B		1			312313	03/21/23 17:28	P1R	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Analysis	SM 2340B		1			311940	03/21/23 17:15	P1R	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			1018 mL	1000 mL	312913	03/20/23 07:25	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			313301	03/21/23 09:05	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Dissolved	Analysis	218.6 CR3		1			314522	03/24/23 12:34	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	218.6 CR3		1			314522	03/24/23 12:34	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	315112	03/27/23 14:02	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	315123	03/27/23 16:17	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309190	03/27/23 14:01	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			312018	03/15/23 22:27	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			313959	03/22/23 20:10	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	313188	03/20/23 21:08	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	50 mL	1000 mL	313066	03/20/23 13:31	TXA8	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	312256	03/16/23 14:03	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	BOD Prep					312138	03/16/23 14:01	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	313425	03/16/23 14:46	U7UR	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	SM 5310D		8	40 mL	40 mL	316478	03/31/23 01:01	UAPD	EET CAL 4
	Instrument ID: TOC12									
Total/NA	Prep	SM 5540C			100 mL	100 mL	312366	03/16/23 19:30	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	312365	03/16/23 20:52	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	D4464		1			313070	03/20/23 19:38	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230315-1
Lab Sample ID: 570-131262-2
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	312209	03/16/23 16:13	N1A	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
j ro/ectSBite: goeinF BBLRIBMA and gs j - f Np

Job ID: 570-1219P9-1

Laboratory: Eurofins Calscience

All accreditationzSertiZcationz held by thiz laboratory are lizted. f ot all accreditationzSertiZcationz are a88licable to thiz re8ort.

Authority	Program	Identification Number	Expiration Date
Ari3ona	Btate	A60u20	11-1P-92
CaliZornia	Roz AnFelez CoQnty Banitation Diztrictz	10104	07-21-92
CaliZornia	BCAv s D RAj	17RA0414	11-20-92
CaliZornia	Btate	20u9	07-21-9O
f eEada	Btate	CA00111	0u-01-92
UreFon	f NRAj	O175	09-09-9O
mBDA	mB Lederal j roFraWz	j 220-99-00054	05-9O-92
p azhinFton	Btate	C41P-1u	10-11-92

NQroZnz Calzcience

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

1664A = EPA-821-98-002
ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131262-1	EPBLLC_20230315	Water	03/15/23 11:00	03/15/23 17:35
570-131262-2	TB-20230315-1	Water	03/15/23 11:00	03/15/23 17:35

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210716.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131262-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131262-3)	3/15/23	11:00 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1601		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR6G

4/4/2023

Loc: 570
131262

570-131262 Chain of Custody

ns Calscience

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMANICO	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (E903.0/E903, E904, E905) (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230315	3/15/23	1100	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			Field Readings ED8FJ6UX
																										Meter Serial #
TB_20230315-1	3/15/23	1100	TB	WM	2	N	N														x					Time of Readings 1100
																										DO (mg/L)
																										pH
																										Temp (°C/°F)
																										TRC (mg/L)
																										Checked by:
																										Date/Time:
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3-15-23 1333	Received by: EC	Date/Time: 3/15/23 1375
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.3/2.3 2.5/2.5 2.9/2.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/4/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica b/t and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. APRIL DOMINICK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_20230315	3/15/23	1100	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	1100	TB	WM	2	N	N				X																	
								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3-15-2023 1735	Received by:	Date/Time: 3/15/23 1735	
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC	Date/Time: 3/15/23 17:35	
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:	

2-3/2-3 2-5/2-5 2-9/2-9
Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131262-1

Login Number: 131262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/4/2023 8:54:09 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131262-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

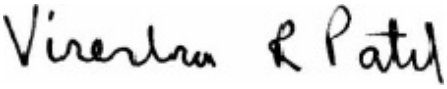
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131262-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131262-2

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.5º C and 2.9º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.066		0.0050	0.00079	ug/L	10		1631E	Total/NA
Mercury	0.0034		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.066		0.0050	0.00079	ug/L			03/23/23 18:10	10

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0034		0.00050	0.000079	ug/L			03/23/23 18:14	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-421301/18
Matrix: Water
Analysis Batch: 421301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/23/23 11:54	1

Lab Sample ID: MB 580-421301/19
Matrix: Water
Analysis Batch: 421301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/23/23 11:58	1

Lab Sample ID: MB 580-421301/20
Matrix: Water
Analysis Batch: 421301

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/23/23 12:03	1

Lab Sample ID: LCS 580-421301/26
Matrix: Water
Analysis Batch: 421301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00450		ug/L		90	77 - 123		

Lab Sample ID: LCSD 580-421301/27
Matrix: Water
Analysis Batch: 421301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00436		ug/L		87	77 - 123	3	24

Lab Sample ID: MB 580-420711/1-A
Matrix: Water
Analysis Batch: 421301

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/23/23 12:15	1

Metals

Filtration Batch: 420711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Dissolved	Water	Filtration	
MB 580-420711/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 421301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Dissolved	Water	1631E	420711
570-131262-1	EPBLLC_20230315	Total/NA	Water	1631E	
MB 580-420711/1-A	Method Blank	Dissolved	Water	1631E	420711
MB 580-421301/18	Method Blank	Total/NA	Water	1631E	
MB 580-421301/19	Method Blank	Total/NA	Water	1631E	
MB 580-421301/20	Method Blank	Total/NA	Water	1631E	
LCS 580-421301/26	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-421301/27	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-2

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	420711	03/17/23 13:05	DRM	EET SEA
Dissolved	Analysis	1631E		1			421301	03/23/23 18:14	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		10			421301	03/23/23 18:10	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131262-1	EPBLLC_20230315	Water	03/15/23 11:00	03/15/23 17:35

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210716.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131262-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131262-3)	3/15/23	11:00 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1601		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR6G

Loc: 570
131262

570-131262 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

ns Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMANICO	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (E903.0/E903, E904, E905)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enhanpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230315	3/15/23	1100	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-1	3/15/23	1100	TB	WM	2	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings ED8FJ6UX

Meter Serial #

Time of Readings 1100

DO (mg/L)

pH

Temp (°C/°F)

TRC (mg/L)

Checked by:

Date/Time:

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/15/23 1333	Received by: EC			Date/Time: 3/15/23 1375
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC			Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:			Date/Time:

2.3/2.3 2.5/2.5 2.9/2.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/4/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230315	3/15/23	1100	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	1100	TB	WM	2	N	N				X																	
								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3-15-2023 1735	Received by:	Company:	Date/Time: 3/15/23 1735
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by:	Company: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

2-3/2-3 2-5/2-5 2-9/2-9
Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210886.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-131262-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/31/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 03/16/23 12:22	Company: EC	Received by:	Date/Time: 3/17/23 8:30	Company: EHS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: No Mud Red Lee | Cooler Temperature(s) °C and Other Remarks: 0.1 D12 0.3

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131262-2

Login Number: 131262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131262-2

Login Number: 131262
List Number: 3
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/17/23 12:59 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 9:58:21 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131262-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

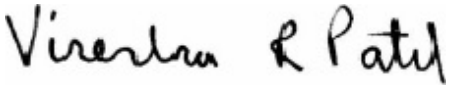
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131262-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131262-3

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.5º C and 2.9º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-3

Method	Method Description	Protocol	Laboratory
Subcontract	Quant-Tray - E. Coli - level 4 required	None	Enthalpy

Protocol References:

None = None

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131262-1	EPBLLC_20230315	Water	03/15/23 11:00	03/15/23 17:35

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 481630
Report Level: IV
Report Date: 03/27/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Project: BOEING NPDES SSFL - (570-13262-1) Boeing SSFL ISRA and BMP - NEW 57014595

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	Lab Job #: Project No: Location: Date Received:	481630 BOEING NPDES SSFL (570-13262-1) Boeing SSFL ISRA and BMP - NEW 57014595 03/15/23

Sample ID	Lab ID	Collected	Matrix
EPBLLC_20230315_20230314 (570-131262-1)	481630-001	03/15/23 11:00	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	481630
	Project No:	BOEING NPDES SSFL
	Location:	(570-13262-1) Boeing SSFL ISRA and BMP - NEW 57014595
	Date Received:	03/15/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/16/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

481630

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210715.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-131262-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 3/28/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, Other:
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water				X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	3/15/23 1654	EC		3/15/23 16:54	EA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

ICOC No:
570-210715

Containers

Count	Container Type	Preservative
3	Plastic 120mL - Sterile/Na2SO3	Sodium Sulfite

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins Calscience

Project: Boeing SSFL ISRA and BMP- New

Date Received: 03-15-23

Sampler's Name Present: ☐ Yes ☒ No

Section 2

Sample(s) received in a cooler? ☒ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 5.6 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☒ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 1.9 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	X		
Are sample IDs present?	X		
Are sampling dates & times present?	X		
Is a relinquished signature present?	X		
Are the tests required clearly indicated on the COC?	X		
Are custody seals present?		X	
If custody seals are present, were they intact?			X
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	X		
Did all samples arrive intact? If no, indicate in Section 4 below.	X		
Did all bottle labels agree with COC? (ID, dates and times)	X		
Were the samples collected in the correct containers for the required tests?	X		
Are the containers labeled with the correct preservatives?			X
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			X
Was a sufficient amount of sample submitted for the requested tests?	X		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____ ☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 03-15-23

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 481630 **Project#:** BOEING NPDES SSFL

Client: Eurofins Calscience Tustin **Location:** (570-13262-1) Boeing SSFL ISRA and...

Field ID:	EPBLLC_20230315_20230314 (570-131262-1)	**Batch#:**	309880	**Analyzed:**	03/16/23 14:07
Lab ID:	481630-001	**Sampled:**	03/15/23 11:00	**Prep:**	
Matrix:	Water	**Received:**	03/15/23	**Analysis:**	SM 9223Bb
DiIn Fac:	10.00	**Prepared:**	03/15/23 17:13	**Analyst:**	VLC

481630-001 Analyte	Result	RL	Units
Coliform, E. Coli	**1,900**	10	MPN/100ml

Legend

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: PS Prep Date/Time: 3/15/23 1713 QC Batch ID: 309880 Batch Page 1 of 2

Read Analyst: VC Read Date/Time 3/16/23 1407

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: HU930 Pipette Lot #: A104193/A104222/A104071

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 3/1/23 Bottle Lot #: DU006V Comparator Lot #: HU148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 34.8°C 1809 Incubator Out, Temp/Time: 35.1°C 1404

Fecal Coliform: Water Bath ID: PS 3/16/23 #6 Water Bath In, Temp/Time: 44.5°C 1809 Water Bath Out, Temp/Time: 44.4°C ~~1404~~ 1500 VC 3/16/23

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		481612-002	1x	45	10	135.4	140	0	0	<1	<1	0	0	<1	<1	R-02
		481610-001		49	48	>2419.6	>2400	1	0	1.0	1	0	0	<1	<1	RE-01
		481607-001		48	14	209.8	210	14	4	20.9	21	0	0	<1	<1	RC-01
		002		42	8	104.6	100	16	2	21.3	21	0	0	<1	<1	02
		003		49	48	>2419.6	>2400	49	47	2419.6	2400	49	47	2419.6	2400	03
		004		49	48	>2419.6	>2400	16	11	32.5	32	25	2	36.4	36	04
		005		49	48	>2419.6	>2400	49	42	1299.7	1300	49	41	1203.3	1200	05
		006		49	48	>2419.6	>2400	49	39	1046.2	1000	49	39	1046.2	1000	06
		007		49	48	>2419.6	>2400	49	41	1203.3	1200	49	42	1299.7	1300	07
		008		49	48	>2419.6	>2400	49	46	1986.3	2000	48	42	755.6	760	08
		009		49	48	>2419.6	>2400	48	47	960.6	960	49	43	1413.6	1400	09
		010		49	48	>2419.6	>2400	49	46	1986.3	2000	49	44	1553.1	1600	10
		481630-001		49	48	>2419.6	>2400	49	48	>2419.6	>2400	PS 3/24/23				FU-01
Quality Control		**Culture ID**														
Positive +/+ (E. Coli)		3/12/23		49	48	>2419.6	>2400	49	48	>2419.6	>2400	49	48	>2419.6	>2400	
Positive +/- (K. Pneumonia)				49	48	>2419.6	>2400	0	0	<1	<1	49	48	>2419.6	>2400	
Negative -/- (P. Aeruginosa)				0	0	<1	<1	0	0	<1	<1	0	0	<1	<1	

Data Entered By: JA 3/16/23 Data Reviewed By:

SM 9223 B-b, Quanti-Tray

Prep Analyst: PS Prep Date/Time: 3/15/23 1718 QC Batch ID: 309880 Batch Page 2 of 2

Read Analyst: VC Read Date/Time 3/16/23 1407

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: HU2330 (4) VC 3/16/23 Pipette Lot #: A104193/A104222/A104071

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 3/1/23 Bottle Lot #: DV006V Comparator Lot #: HU148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: N3 Incubator In, Temp/Time: 34.8 1309 Incubator Out, Temp/Time: 1404 35.1 °C

Fecal Coliform: Water Bath ID: 6 Water Bath In, Temp/Time: 44.5 1309 Water Bath Out, Temp/Time: 1500 44.4 °C

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		48/630-001	10x	49	48	>2419.6	>24000	47	15	191.8	1900					FU-01
		001	~~25x~~ 100x VC 3/16/23	49	29	579.4	58000	10	2	13.2	1300	PS	3/24/23			1
		48/629-001	1x	49	48	>2419.6	>2400	~~24~~ 49	~~4~~ 24	~~579.4~~ 37.3	~~580~~ 37					GD-01
		001	10x	49	43	1413.6	14000	49 24 PS 3/17/23	24 4	~~579.4~~ 37.3	~~5800~~ 580 PS 3/17/23					1
		001	~~25x~~ 100x VC 3/16/23	43	11	121.1	12000	3	0	3.1	~~3600~~ 310 PS 3/17/23					

JA 3/16/23

Quality Control	Culture ID													
Positive +/+ (E. Coli)	3/12/23	49	48	>2419.6	>2400	49	48	>2419.6	>2400	49	48	>2419.6	2400	
Positive +/- (K. Pneumonia)	↓	49	48	~~>2419.6~~ 2419.6	>2400	0	0	<1	<1	49	48	>2419.6	2400	
Negative -/- (P. Aeruginosa)		0	0	<1	<1	0	0	<1	<1	0	0	<1	<1	

Data Entered By: JA 3/16/23 Data Reviewed By: JA 3/16/23

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210716.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131262-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131262-3)	3/15/23	11:00 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1601		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR669

Loc: 570
131262

570-131262 Chain of Custody

Calscience

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMANICO	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230315	3/15/23	1100	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
TB_20230315-1	3/15/23	1100	TB	WM	2	N	N														x					

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings ED8TJ6UX

Meter Serial #

Time of Readings 1100

DO (mg/L)

pH

Temp (°C/°F)

TRC (mg/L)

Checked by:

Date/Time:

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3-15-23 1333	Received by: EC			Date/Time: 3/15/23 1375
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC			Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:			Date/Time:

2.3/2.3 2.5/2.5 2.9/2.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. ADAMOWICZ	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBLLC_20230315	3/15/23	1100	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	1100	TB	WM	2	N	N				X																	
								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3-15-2023 1735	Received:	Date/Time: 3/15/23 1335	
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received: EC	Date/Time: 3/15/23 17:35	
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:	

2-3/2-3 2-5/2-5 2-9/2-9
Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131262-3

Login Number: 131262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131262-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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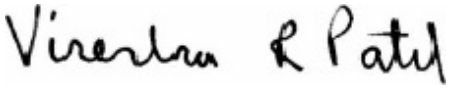
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-131262-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131262-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131262-4

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.5º C and 2.9º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: EPBLLC_20230315 (570-131262-1), (CCV 320-665899/15), (LCS 320-665270/2-A), (LCSD 320-665270/3-A) and (MB 320-665270/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-4

Client Sample ID: EPBLLC_20230315

Lab Sample ID: 570-131262-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000011	J,DX MB q	0.000048	0.000000037	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.0000016	J,DX MB q	0.000048	0.000000051	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000011	J,DX MB q	0.000048	0.000000082	ug/L	1		1613B	Total/NA
OCDD	0.000020	J,DX MB q	0.000096	0.00000020	ug/L	1		1613B	Total/NA
OCDF	0.0000023	J,DX q	0.000096	0.00000018	ug/L	1		1613B	Total/NA
Total HxCDD	0.0000011	J,DX MB q	0.000048	0.000000034	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000044	J,DX MB q	0.000048	0.000000051	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000011	J,DX MB q	0.000048	0.000000082	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000096	0.00000012	ug/L		04/03/23 14:30	04/07/23 06:06	1
2,3,7,8-TCDF	ND		0.0000096	0.00000018	ug/L		04/03/23 14:30	04/07/23 06:06	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000062	ug/L		04/03/23 14:30	04/07/23 06:06	1
1,2,3,7,8-PeCDF	ND		0.000048	0.00000020	ug/L		04/03/23 14:30	04/07/23 06:06	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000022	ug/L		04/03/23 14:30	04/07/23 06:06	1
1,2,3,4,7,8-HxCDD	**0.0000011**	**J,DX MB q**	0.000048	0.00000037	ug/L		04/03/23 14:30	04/07/23 06:06	1
1,2,3,6,7,8-HxCDD	ND		0.000048	0.00000038	ug/L		04/03/23 14:30	04/07/23 06:06	1
1,2,3,7,8,9-HxCDD	ND		0.000048	0.00000034	ug/L		04/03/23 14:30	04/07/23 06:06	1
1,2,3,4,7,8-HxCDF	ND		0.000048	0.00000029	ug/L		04/03/23 14:30	04/07/23 06:06	1
1,2,3,6,7,8-HxCDF	ND		0.000048	0.00000029	ug/L		04/03/23 14:30	04/07/23 06:06	1
1,2,3,7,8,9-HxCDF	ND		0.000048	0.00000031	ug/L		04/03/23 14:30	04/07/23 06:06	1
2,3,4,6,7,8-HxCDF	ND		0.000048	0.00000028	ug/L		04/03/23 14:30	04/07/23 06:06	1
1,2,3,4,6,7,8-HpCDD	**0.0000016**	**J,DX MB q**	0.000048	0.00000051	ug/L		04/03/23 14:30	04/07/23 06:06	1
1,2,3,4,6,7,8-HpCDF	**0.0000011**	**J,DX MB q**	0.000048	0.00000082	ug/L		04/03/23 14:30	04/07/23 06:06	1
1,2,3,4,7,8,9-HpCDF	ND		0.000048	0.00000088	ug/L		04/03/23 14:30	04/07/23 06:06	1
OCDD	**0.000020**	**J,DX MB q**	0.000096	0.00000020	ug/L		04/03/23 14:30	04/07/23 06:06	1
OCDF	**0.0000023**	**J,DX q**	0.000096	0.00000018	ug/L		04/03/23 14:30	04/07/23 06:06	1
Total TCDD	ND		0.0000096	0.00000012	ug/L		04/03/23 14:30	04/07/23 06:06	1
Total TCDF	ND		0.0000096	0.00000018	ug/L		04/03/23 14:30	04/07/23 06:06	1
Total PeCDD	ND		0.000048	0.00000062	ug/L		04/03/23 14:30	04/07/23 06:06	1
Total PeCDF	ND		0.000048	0.00000020	ug/L		04/03/23 14:30	04/07/23 06:06	1
Total HxCDD	**0.0000011**	**J,DX MB q**	0.000048	0.00000034	ug/L		04/03/23 14:30	04/07/23 06:06	1
Total HxCDF	ND		0.000048	0.00000028	ug/L		04/03/23 14:30	04/07/23 06:06	1
Total HpCDD	**0.0000044**	**J,DX MB q**	0.000048	0.00000051	ug/L		04/03/23 14:30	04/07/23 06:06	1
Total HpCDF	**0.0000011**	**J,DX MB q**	0.000048	0.00000082	ug/L		04/03/23 14:30	04/07/23 06:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*82*		*20 - 156*	*46/43/23 16:34*	*46/47/23 45:45*	*1*
13C-2,3,7,8-TCDF	*75*		*26 - 159*	*46/43/23 16:34*	*46/47/23 45:45*	*1*
13C-1,2,3,7,8-PeCDD	*89*		*20 - 181*	*46/43/23 16:34*	*46/47/23 45:45*	*1*
13C-1,2,3,7,8-PeCDF	*84*		*26 - 180*	*46/43/23 16:34*	*46/47/23 45:45*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,6,7,8-PeCDF	77		21 - 178	46/43/23 16:34	46/47/23 45:45	1
13C-1,2,3,6,7,8-HxCDD	70		32 - 161	46/43/23 16:34	46/47/23 45:45	1
13C-1,2,3,5,7,8-HxCDD	79		28 - 134	46/43/23 16:34	46/47/23 45:45	1
13C-1,2,3,6,7,8-HxCDF	71		25 - 102	46/43/23 16:34	46/47/23 45:45	1
13C-1,2,3,5,7,8-HxCDF	73		25 - 123	46/43/23 16:34	46/47/23 45:45	1
13C-1,2,3,7,8,9-HxCDF	70		29 - 167	46/43/23 16:34	46/47/23 45:45	1
13C-2,3,6,5,7,8-HxCDF	70		28 - 135	46/43/23 16:34	46/47/23 45:45	1
13C-1,2,3,6,5,7,8-HpCDD	88		23 - 164	46/43/23 16:34	46/47/23 45:45	1
13C-1,2,3,6,5,7,8-HpCDF	58		28 - 163	46/43/23 16:34	46/47/23 45:45	1
13C-1,2,3,6,7,8,9-HpCDF	79		25 - 138	46/43/23 16:34	46/47/23 45:45	1
13C-OCDD	82		17 - 107	46/43/23 16:34	46/47/23 45:45	1
13C-OCDF	77		17 - 107	46/43/23 16:34	46/47/23 45:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	89		30 - 197	46/43/23 16:34	46/47/23 45:45	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (35-197)**
570-131262-1	EPBLLC_20230315	89
MB 320-665270/1-A	Method Blank	91

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**37TCDD (31-191)**
LCS 320-665270/2-A	Lab Control Sample	93
LCSD 320-665270/3-A	Lab Control Sample Dup	94

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-131262-1	EPBLLC_20230315	82	76	89	80	77	75	79	71
MB 320-665270/1-A	Method Blank	79	73	80	73	74	74	76	70

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-131262-1	EPBLLC_20230315	73	75	75	88	68	79	82	77
MB 320-665270/1-A	Method Blank	71	76	73	78	63	78	71	67

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-665270/2-A	Lab Control Sample	70	63	77	68	68	72	76	70
LCSD 320-665270/3-A	Lab Control Sample Dup	77	73	79	73	72	72	77	72

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-665270/2-A	Lab Control Sample	70	70	71	79	65	76	76	71
LCSD 320-665270/3-A	Lab Control Sample Dup	73	76	74	83	66	76	77	73

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-665270/1-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665270

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000013	ug/L		04/03/23 14:30	04/07/23 00:29	1
2,3,7,8-TCDF	ND		0.000010	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000045	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000014	ug/L		04/03/23 14:30	04/07/23 00:29	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000015	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,7,8-HxCDD	0.00000149	J,DX q	0.000050	0.00000025	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000026	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000023	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000017	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000016	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,6,7,8-HpCDD	0.000000942	J,DX q	0.000050	0.00000031	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,6,7,8-HpCDF	0.00000151	J,DX	0.000050	0.00000087	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000090	ug/L		04/03/23 14:30	04/07/23 00:29	1
OCDD	0.00000452	J,DX	0.00010	0.00000043	ug/L		04/03/23 14:30	04/07/23 00:29	1
OCDF	ND		0.00010	0.00000080	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total TCDD	0.00000632	J,DX q	0.000010	0.00000013	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total TCDF	ND		0.000010	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total PeCDD	ND		0.000050	0.00000045	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total PeCDF	ND		0.000050	0.00000014	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HxCDD	0.00000149	J,DX q	0.000050	0.00000023	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HxCDF	ND		0.000050	0.00000016	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HpCDD	0.000000942	J,DX q	0.000050	0.00000031	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HpCDF	0.00000151	J,DX	0.000050	0.00000087	ug/L		04/03/23 14:30	04/07/23 00:29	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*29 - 154*	*04/03/23 14:30*	*04/07/23 00:26*	*1*
13C-2,3,7,8-TCDF	*73*		*24 - 156*	*04/03/23 14:30*	*04/07/23 00:26*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*29 - 181*	*04/03/23 14:30*	*04/07/23 00:26*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-665270/1-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665270

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	73		24 - 189	04/03/23 14:30	04/07/23 00:26	1
13C-2,3,4,7,8-PeCDF	74		21 - 178	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,7,8-HxCDD	74		32 - 141	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,5,7,8-HxCDD	75		28 - 130	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,7,8-HxCDF	70		25 - 192	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,5,7,8-HxCDF	71		25 - 123	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,7,8,6-HxCDF	75		26 - 147	04/03/23 14:30	04/07/23 00:26	1
13C-2,3,4,5,7,8-HxCDF	73		28 - 135	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,5,7,8-HpCDD	78		23 - 140	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,5,7,8-HpCDF	53		28 - 143	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,7,8,6-HpCDF	78		25 - 138	04/03/23 14:30	04/07/23 00:26	1
13C-OCDD	71		17 - 197	04/03/23 14:30	04/07/23 00:26	1
13C-OCDF	57		17 - 197	04/03/23 14:30	04/07/23 00:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	61		39 - 167	04/03/23 14:30	04/07/23 00:26	1

Lab Sample ID: LCS 320-665270/2-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665270

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000175		ug/L		87	67 - 158		
2,3,7,8-TCDF			0.000200	0.000177		ug/L		89	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000815		ug/L		82	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000802		ug/L		80	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000805		ug/L		81	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000807		ug/L		81	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.000822		ug/L		82	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000816		ug/L		82	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000807		ug/L		81	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000844		ug/L		84	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000798		ug/L		80	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000797		ug/L		80	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000846		ug/L		85	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000837		ug/L		84	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000792		ug/L		79	78 - 138		
OCDD			0.00200	0.00165		ug/L		82	78 - 144		
OCDF			0.00200	0.00166		ug/L		83	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	70		20 - 179
13C-2,3,7,8-TCDF	53		22 - 192
13C-1,2,3,7,8-PeCDD	77		21 - 227
13C-1,2,3,7,8-PeCDF	58		21 - 162
13C-2,3,4,7,8-PeCDF	58		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 163
13C-1,2,3,5,7,8-HxCDD	75		29 - 153

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-665270/2-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665270

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	70		16 - 202
13C-1,2,3,5,7,8-HxCDF	70		21 - 196
13C-1,2,3,7,8,6-HxCDF	70		17 - 209
13C-2,3,4,5,7,8-HxCDF	71		22 - 175
13C-1,2,3,4,5,7,8-HpCDD	76		25 - 155
13C-1,2,3,4,5,7,8-HpCDF	59		21 - 198
13C-1,2,3,4,7,8,6-HpCDF	75		20 - 185
13C-OCDD	75		13 - 166
13C-OCDF	71		13 - 166

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	63		31 - 161

Lab Sample ID: LCSD 320-665270/3-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665270

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000180		ug/L		90	67 - 158	3	50
2,3,7,8-TCDF			0.000200	0.000178		ug/L		89	75 - 158	0	50
1,2,3,7,8-PeCDD			0.00100	0.000905		ug/L		91	70 - 142	10	50
1,2,3,7,8-PeCDF			0.00100	0.000867		ug/L		87	80 - 134	8	50
2,3,4,7,8-PeCDF			0.00100	0.000872		ug/L		87	68 - 160	8	50
1,2,3,4,7,8-HxCDD			0.00100	0.000903		ug/L		90	70 - 164	11	50
1,2,3,6,7,8-HxCDD			0.00100	0.000911		ug/L		91	76 - 134	10	50
1,2,3,7,8,9-HxCDD			0.00100	0.000919		ug/L		92	64 - 162	12	50
1,2,3,4,7,8-HxCDF			0.00100	0.000875		ug/L		88	72 - 134	8	50
1,2,3,6,7,8-HxCDF			0.00100	0.000870		ug/L		87	84 - 130	3	50
1,2,3,7,8,9-HxCDF			0.00100	0.000853		ug/L		85	78 - 130	7	50
2,3,4,6,7,8-HxCDF			0.00100	0.000868		ug/L		87	70 - 156	9	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000836		ug/L		84	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000937		ug/L		94	82 - 122	11	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000894		ug/L		89	78 - 138	12	50
OCDD			0.00200	0.00186		ug/L		93	78 - 144	12	50
OCDF			0.00200	0.00187		ug/L		94	63 - 170	12	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 179
13C-2,3,7,8-TCDF	73		22 - 192
13C-1,2,3,7,8-PeCDD	76		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 162
13C-2,3,4,7,8-PeCDF	72		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 163
13C-1,2,3,5,7,8-HxCDD	77		29 - 153
13C-1,2,3,4,7,8-HxCDF	72		16 - 202
13C-1,2,3,5,7,8-HxCDF	73		21 - 196
13C-1,2,3,7,8,6-HxCDF	75		17 - 209
13C-2,3,4,5,7,8-HxCDF	74		22 - 175

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-665270/3-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665270

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,5,7,8-HpCDD	83		25 - 155
13C-1,2,3,4,5,7,8-HpCDF	55		21 - 198
13C-1,2,3,4,7,8,6-HpCDF	75		20 - 185
13C-OCDD	77		13 - 166
13C-OCDF	73		13 - 166

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	64		31 - 161

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Specialty Organics

Prep Batch: 665270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Total/NA	Water	1613B	
MB 320-665270/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-665270/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-665270/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 665899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Total/NA	Water	1613B	665270
MB 320-665270/1-A	Method Blank	Total/NA	Water	1613B	665270
LCS 320-665270/2-A	Lab Control Sample	Total/NA	Water	1613B	665270
LCSD 320-665270/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	665270

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1
Date Collected: 03/15/23 11:00
Matrix: Water
Date Received: 03/15/23 17:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1036.6 mL	20.0 uL	665270	04/03/23 14:30	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	665899	04/07/23 06:06	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-4

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131262-1	EPBLLC_20230315	Water	03/15/23 11:00	03/15/23 17:35

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210716.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131262-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131262-3)	3/15/23	11:00 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1601		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR6G

Loc: 570
131262

570-131262 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

ns Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMANICO	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (E903.0/E903, E904, E905) (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enhanpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230315	3/15/23	1100	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230315-1	3/15/23	1100	TB	WM	2	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings ED8FJ6UX

Meter Serial #

Time of Readings 1100

DO (mg/L)

pH

Temp (°C/°F)

TRC (mg/L)

Checked by:

Date/Time:

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3-15-23 1333	Received by: EC
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:

Date/Time: 3/15/23 1375
Date/Time: 3/15/23 17:35
Date/Time:

2.3/2.3 2.5/2.5 2.9/2.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/7/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica b/t and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. APPLEDOMNICK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230315	3/15/23	1100	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	1100	TB	WM	2	N	N				X																	
								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3-15-2023 1735	Received:	Date/Time: 3/15/23 1335	
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received: EC	Date/Time: 3/15/23 17:35	
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:	

2-3/2-3 2-5/2-5 2-9/2-9
Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210890.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-131262-4
Address: 880 Riverside Parkway,	Due Date Requested: 3/31/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/16/23 12:50			3-17-23 0925	EETLA
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Locks	Cooler Temperature(s) °C and Other Remarks: 4.7 c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131262-4

Login Number: 131262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131262-4

Login Number: 131262
List Number: 4
Creator: Oropeza, Salvador

List Source: Eurofins Sacramento
List Creation: 03/17/23 03:17 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seals
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.7C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/27/2023 10:39:16 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131262-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

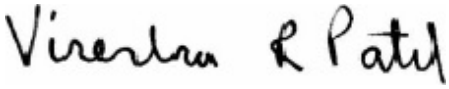
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/27/2023 10:39:16 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Method Summary 6
Sample Summary 7
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Receipt Checklists 19

Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131262-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131262-5

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.5º C and 2.9º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods EPA 608 - Pesticides/PCBs - PP list, VOCs-2CVE only (E624), Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-5

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs-2CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131262-1	EPBLLC_20230315	Water	03/15/23 11:00	03/15/23 17:35
570-131262-3	TB-20230315-2	Water	03/15/23 11:00	03/15/23 17:35

Work Orders: 3C15115

Project: 570-131262-5

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 4/24/2023
Received Date: 3/15/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #: 570-131262-5
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/15/23 with the Chain-of-Custody document. The samples were received in good condition, at 4.9 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: EPBLLC_20230315 (570-131262-1) — Sampled: 03/15/23 11:00 by Client
3C15115-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 525.2M			**Instr:** GCMS13				
Batch ID: W3C2319 **Preparation:** EPA 525.2/SPE			**Prepared:** 03/28/23 08:33				**Analyst:** EFC
Chlorpyrifos	ND	0.0040	0.010	ug/l	1	04/04/23	Q-02
Diazinon	ND	0.0034	0.010	ug/l	1	04/04/23	
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*63%*		*50-141*	*Conc: 0.313*		*04/04/23*	
Triphenyl phosphate	*99%*		*63-200*	*Conc: 0.495*		*04/04/23*	
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C1825 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/21/23 13:27				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.050	ug/l	1	04/18/23	
Surrogate(s)							
Decachlorobiphenyl	*55%*		*33-133*	*Conc: 0.0535*		*04/18/23*	
Tetrachloro-meta-xylene	*55%*		*32-130*	*Conc: 0.0537*		*04/18/23*	
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C1417 **Preparation:** EPA 5030B			**Prepared:** 03/16/23 07:39				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l	1	03/16/23	
Surrogate(s)							
1,2-Dichloroethane-d4	*106%*		*82-125*	*Conc: 53.0*		*03/16/23*	
4-Bromofluorobenzene	*94%*		*88-108*	*Conc: 46.8*		*03/16/23*	
Toluene-d8	*93%*		*92-112*	*Conc: 46.3*		*03/16/23*	
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32				**Analyst:** pjs

Sample Results

(Continued)

Sample: EPBLLC_20230315 (570-131262-1) Sampled: 03/15/23 11:00 by Client
3C15115-01 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32			**Analyst:** pjs	
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l	1	04/05/23	Q-01

Sample: TB-20230315-2 (570-131262-3) Sampled: 03/15/23 11:00 by Client
3C15115-02 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C1417 **Preparation:** EPA 5030B			**Prepared:** 03/16/23 07:39			**Analyst:** ADM	
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l	1	03/16/23	
Surrogate(s)							
1,2-Dichloroethane-d4	*105%*		*82-125*	*Conc: 52.5*		*03/16/23*	
4-Bromofluorobenzene	*92%*		*88-108*	*Conc: 46.2*		*03/16/23*	
Toluene-d8	*95%*		*92-112*	*Conc: 47.7*		*03/16/23*	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C1825-BLK1)					**Prepared: 03/21/23**	**Analyzed: 04/17/23**					
Endrin aldehyde	ND	0.0019	0.050	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.114*			*ug/l*	*0.100*		*114*	*33-133*			
Tetrachloro-meta-xylene	*0.0641*			*ug/l*	*0.100*		*64*	*32-130*			
LCS (W3C1825-BS1)					**Prepared: 03/21/23**	**Analyzed: 04/17/23**					
Endrin aldehyde	0.135	0.0019	0.050	ug/l	0.200		68	18-130			
Surrogate(s)											
Decachlorobiphenyl	*0.0990*			*ug/l*	*0.100*		*99*	*33-133*			
Tetrachloro-meta-xylene	*0.0553*			*ug/l*	*0.100*		*55*	*32-130*			
LCS Dup (W3C1825-BSD1)					**Prepared: 03/21/23**	**Analyzed: 04/17/23**					
Endrin aldehyde	0.160	0.0019	0.050	ug/l	0.200		80	18-130	17	30	
Surrogate(s)											
Decachlorobiphenyl	*0.105*			*ug/l*	*0.100*		*105*	*33-133*			
Tetrachloro-meta-xylene	*0.0709*			*ug/l*	*0.100*		*71*	*32-130*			

Hydrazine by LCMS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2019-BLK1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l							
LCS (W3C2019-BS1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.81	0.62	2.0	ug/l	20.0		14	50-150			Q-01
Matrix Spike (W3C2019-MS1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.11	0.62	2.0	ug/l	20.0	*ND*	11	50-150			Q-01
Matrix Spike Dup (W3C2019-MSD1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.45	0.62	2.0	ug/l	20.0	*ND*	12	50-150	15	30	Q-01

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Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2319-BLK1)					**Prepared: 03/28/23**	**Analyzed: 04/03/23**					
Chlorpyrifos	ND	0.0040	0.010	ug/l							
Diazinon	ND	0.0034	0.010	ug/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.316*			*ug/l*	*0.500*		*63*	*50-141*			
Triphenyl phosphate	*0.477*			*ug/l*	*0.500*		*95*	*63-200*			
LCS (W3C2319-BS1)					**Prepared: 03/28/23**	**Analyzed: 04/03/23**					
Chlorpyrifos	0.0223	0.0040	0.010	ug/l	0.0500		45	63-145			Q-02
Diazinon	0.0284	0.0034	0.010	ug/l	0.0500		57	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.294*			*ug/l*	*0.500*		*59*	*50-141*			
Triphenyl phosphate	*0.483*			*ug/l*	*0.500*		*97*	*63-200*			
Matrix Spike (W3C2319-MS1)	**Source: 3C23055-01**				**Prepared: 03/28/23**	**Analyzed: 04/03/23**					
Chlorpyrifos	0.0296	0.0040	0.010	ug/l	0.0500	*ND*	59	37-168			
Diazinon	0.0285	0.0034	0.010	ug/l	0.0500	*ND*	57	36-153			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.309*			*ug/l*	*0.500*		*62*	*50-141*			
Triphenyl phosphate	*0.533*			*ug/l*	*0.500*		*107*	*63-200*			
Matrix Spike Dup (W3C2319-MSD1)	**Source: 3C23055-01**				**Prepared: 03/28/23**	**Analyzed: 04/04/23**					
Chlorpyrifos	0.0229	0.0040	0.010	ug/l	0.0500	*ND*	46	37-168	25	30	
Diazinon	0.0264	0.0034	0.010	ug/l	0.0500	*ND*	53	36-153	8	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.256*			*ug/l*	*0.500*		*51*	*50-141*			
Triphenyl phosphate	*0.479*			*ug/l*	*0.500*		*96*	*63-200*			

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C1417-BLK1)					**Prepared & Analyzed: 03/16/23**						
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l							
Surrogate(s)											
1,2-Dichloroethane-d4	*50.0*			*ug/l*	*50.0*		*100*	*82-125*			
4-Bromofluorobenzene	*46.1*			*ug/l*	*50.0*		*92*	*88-108*			
Toluene-d8	*47.0*			*ug/l*	*50.0*		*94*	*92-112*			
LCS (W3C1417-BS1)					**Prepared & Analyzed: 03/16/23**						
2-Chloroethyl vinyl ether	51.2	0.19	5.0	ug/l	50.0		102	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*48.5*			*ug/l*	*50.0*		*97*	*82-125*			
4-Bromofluorobenzene	*50.9*			*ug/l*	*50.0*		*102*	*88-108*			
Toluene-d8	*51.9*			*ug/l*	*50.0*		*104*	*92-112*			
LCS Dup (W3C1417-BSD1)					**Prepared & Analyzed: 03/16/23**						
2-Chloroethyl vinyl ether	54.4	0.19	5.0	ug/l	50.0		109	0.1-305	6	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*51.3*			*ug/l*	*50.0*		*103*	*82-125*			
4-Bromofluorobenzene	*51.5*			*ug/l*	*50.0*		*103*	*88-108*			
Toluene-d8	*53.3*			*ug/l*	*50.0*		*107*	*92-112*			
Matrix Spike (W3C1417-MS1)	**Source: 3C15121-02**				**Prepared: 03/16/23**	**Analyzed: 03/17/23**					
2-Chloroethyl vinyl ether	58.1	0.19	5.0	ug/l	50.0	*ND*	116	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*51.7*			*ug/l*	*50.0*		*103*	*82-125*			
4-Bromofluorobenzene	*52.2*			*ug/l*	*50.0*		*104*	*88-108*			
Toluene-d8	*56.1*			*ug/l*	*50.0*		*112*	*92-112*			
Matrix Spike Dup (W3C1417-MSD1)	**Source: 3C15121-02**				**Prepared: 03/16/23**	**Analyzed: 03/17/23**					
2-Chloroethyl vinyl ether	56.4	0.19	5.0	ug/l	50.0	*ND*	113	0.1-305	3	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*49.7*			*ug/l*	*50.0*		*99*	*82-125*			
4-Bromofluorobenzene	*51.9*			*ug/l*	*50.0*		*104*	*88-108*			
Toluene-d8	*53.6*			*ug/l*	*50.0*		*107*	*92-112*			

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Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
Q-01	The recovery of this analyte in QC sample was outside control limits. Sample was justified as ND based on the low level standard at or below the reporting limit.
Q-02	Low recovery of this analyte in the QC sample. The analysis of the low level standard produced acceptable recovery indicating that the sample result might be accurately reported as Not Detected.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Analyses Accreditation Summary

Analyte	CAS #	Not By NELAP	ANAB ISO 17025
EPA 8315M in Water			
Monomethylhydrazine (MMH)	60-34-4	✓	

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

ATH 3015114 eurofins 3015115 Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210716.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131262-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131262-3)	3/15/23	11:00 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1601		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c T0SC9

4/27/2023

WECK LABORATORIES, INC.

Sample Receipt Checklist

4/27/2023

Weck WKO: 3C15115
WKO Logged by: Algabriel Holanda
Samples Checked by: ATH

Date/Time Received: 03/15/23 @ 16:04
# of Samples: 1
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	4.9°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	Wet			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☒	☐	☐	pH paper Lot# 3011190
	Free Chlorine Tested <0.1 (Organics Analyses)	☐	☐	☒	Cl Test Strip Lot# 061221E
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☒	

PM Comments

Sample Receipt Checklist Prepared by:

Signature: _____ Date: 03/15/2023

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210716.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131262-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131262-3)	3/15/23	11:00 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1601		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR6G

Loc: 570
131262

570-131262 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMANICO	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230315	3/15/23	1100	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
TB_20230315-1	3/15/23	1100	TB	WM	2	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings ED8FJ6UX

Meter Serial #

Time of Readings 1100

DO (mg/L)

pH

Temp (°C/°F)

TRC (mg/L)

Checked by:

Date/Time:

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/15/23 1333	Received by: EC			Date/Time: 3/15/23 1375
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC			Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:			Date/Time:

2.3/2.3 2.5/2.5 2.9/2.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/27/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica b/t and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. ADAMO/NICOLE	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230315	3/15/23	1100	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	1100	TB	WM	2	N	N				X																	
								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3-15-2023 1735	Received by:	Company: EC	Date/Time: 3/15/23 1735
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by:	Company: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received by:		Date/Time:

2-3/2-3 2-5/2-5 2-9/2-9
Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131262-5

Login Number: 131262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 9:26:49 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131262-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

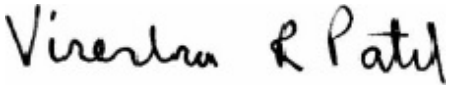
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-6

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131262-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131262-6

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.5º C and 2.9º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-6
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131262-1	EPBLLC_20230315	Water	03/15/23 11:00	03/15/23 17:35

aquatic bioassay & consulting laboratories, inc

April 6, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	EPBLLC_20230315
DATE RECEIVED:	15 March - 2023
ABC LAB. NO.:	CSE0323.185

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = FAIL % EFFECT = 31.61 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Report Date: 05 Apr-23 15:56 (p 1 of 1)
Test Code/ID: CSE0323.185 / 19-7701-7015

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	08-9327-0762	Test Type:	Reproduction-Survival (7d)	Analyst:			
Start Date:	15 Mar-23 15:58	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water		
Ending Date:	22 Mar-23	Species:	Ceriodaphnia dubia	Brine:	Not Applicable		
Test Length:	6d 8h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO	Age:	<24
Sample ID:	01-9140-0916	Code:	CSE0323.185	Project:	129095-020-001-06		
Sample Date:	15 Mar-23 11:00	Material:	Sample Water	Source:	Bioassay Report		
Receipt Date:	15 Mar-23 15:05	CAS (PC):		Station:	EPBLLC_20230315		
Sample Age:	5h (4.3 °C)	Client:	Eurofins Calscience				

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
15-7344-7355	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
09-6983-5820	Reproduction	TST-Welch's t Test	0.9891	100% failed reproduction	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
15-7344-7355	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
09-6983-5820	Reproduction	Control Resp	25.15	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	25.15	24.13	26.17	21	29	0.4881	2.183	8.68%	0.00%
100		20	17.2	15.98	18.42	11	22	0.5831	2.608	15.16%	31.61%

7d Survival Rate Detail — MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail — MD5: F02C7C4164481BF405A524D30D45E899

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	29	25	25	24	26	29	25	26	26
		26	25	26	23	26	23	22	21	28	26
100		20	11	20	19	14	14	20	18	17	16
		19	17	15	22	17	19	18	16	15	17

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	09-6983-5820	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	31 Mar-23 12:17	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	30 Mar-23 13:57	**MD5 Hash:**	F02C7C4164481BF405A524D30D45E899	**Editor ID:**	002-375-739-9
Batch ID:	08-9327-0762	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	15 Mar-23 15:58	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	22 Mar-23	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	6d 8h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	01-9140-0916	**Code:**	CSE0323.185	**Project:**	129095-020-001-06
Sample Date:	15 Mar-23 11:00	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	15 Mar-23 15:05	**CAS (PC):**		**Station:**	EPBLLC_20230315
Sample Age:	5h (4.3 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% failed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100	31	-2.415	0.8534	CDF	0.9891	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	25.15	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	632.025	632.025	1	109.3	<1.0E-05	Significant Effect
Error	219.75	5.7829	38			
Total	851.775		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	0.6216	7.353	0.4353	Equal Variances
	Mod Levene Equality of Variance Test	0.5257	7.353	0.4729	Equal Variances
	Variance Ratio F Test	1.427	3.432	0.4457	Equal Variances
Distribution	Anderson-Darling A2 Test	0.5115	3.878	0.1994	Normal Distribution
	D'Agostino Kurtosis Test	0.3451	2.576	0.7300	Normal Distribution
	D'Agostino Skewness Test	0.8306	2.576	0.4062	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.809	9.21	0.6673	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1414	0.1617	0.0426	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9749	0.9236	0.5070	Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	25.15	24.13	26.17	25.64	21	29	0.4881	8.68%	0.00%
100		20	17.2	15.98	18.42	17	11	22	0.5831	15.16%	31.61%

Reproduction Detail

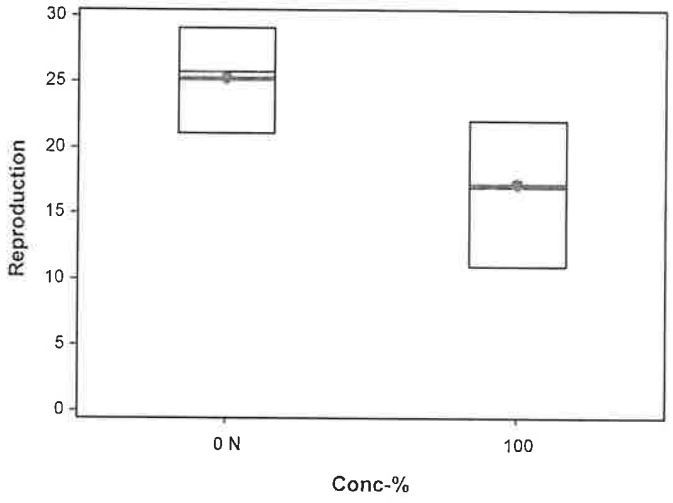
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	29	25	25	24	26	29	25	26	26
		26	25	26	23	26	23	22	21	28	26
100		20	11	20	19	14	14	20	18	17	16
		19	17	15	22	17	19	18	16	15	17

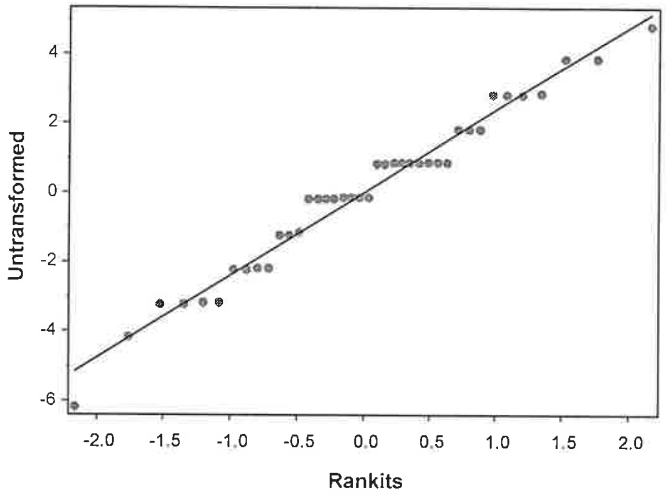
Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	09-6983-5820	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	31 Mar-23 12:17	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	30 Mar-23 13:57	**MD5 Hash:**	F02C7C4164481BF405A524D30D45E899	**Editor ID:**	002-375-739-9

Graphics





CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	15-7344-7355	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	30 Mar-23 13:58	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	30 Mar-23 13:57	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	002-375-739-9
Batch ID:	08-9327-0762	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	15 Mar-23 15:58	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	22 Mar-23	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	6d 8h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	01-9140-0916	**Code:**	CSE0323.185	**Project:**	129095-020-001-06
Sample Date:	15 Mar-23 11:00	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	15 Mar-23 15:05	**CAS (PC):**		**Station:**	EPBLLC_20230315
Sample Age:	5h (4.3 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

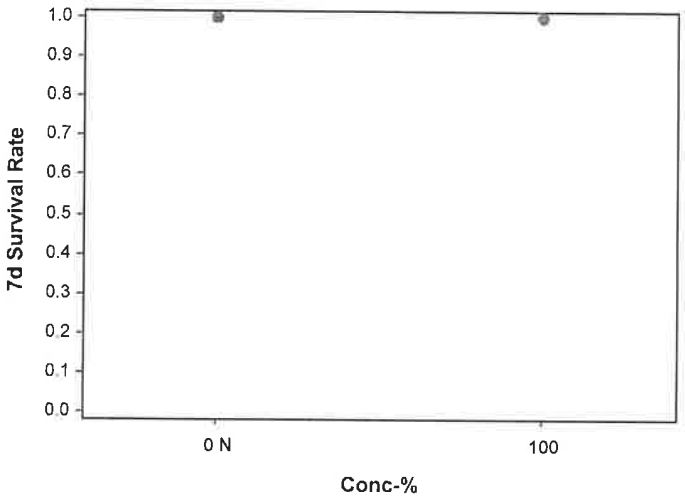
7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	15-7344-7355	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	30 Mar-23 13:58	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	30 Mar-23 13:57	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	002-375-739-9

Graphics



CETIS Measurement Report

Report Date: 05 Apr-23 15:56 (p 1 of 1)
Test Code/ID: CSE0323.185 / 19-7701-7015

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	08-9327-0762	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	15 Mar-23 15:58	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	22 Mar-23	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 8h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9140-0916	Code:	CSE0323.185	Project:	129095-020-001-06
Sample Date:	15 Mar-23 11:00	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	15 Mar-23 15:05	CAS (PC):		Station:	EPBLLC_20230315
Sample Age:	5h (4.3 °C)	Client:	Eurofins Calscience		

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	65	65	65	65	65	0	0	0.00%	0
100		8	235	235	235	235	235	0	0	0.00%	0
Overall		16	150	103.2	196.8	65	235	21.95	87.79	58.53%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	369.6	365.2	374.1	362	381	0.6646	5.317	1.44%	0
100		8	1570	1558	1583	1550	1588	1.863	14.9	0.95%	0
Overall		16	969.9	639.5	1300	362	1588	155	620	63.93%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.762	7.487	8.038	7	8	0.04115	0.3292	4.24%	0
100		8	7.738	7.448	8.027	6.9	8	0.04327	0.3462	4.47%	0
Overall		16	7.75	7.576	7.924	6.9	8	0.08165	0.3266	4.21%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
100		8	500	500	500	500	500	0	0	0.00%	0
Overall		16	290	174.4	405.6	80	500	54.22	216.9	74.79%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.988	7.958	8.017	7.9	8	0.004419	0.03535	0.44%	0
100		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
Overall		16	7.988	7.961	8.014	7.9	8.1	0.0125	0.05	0.63%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24	24	24	24	24	0	0	0.00%	0
Overall		16	24	24	24	24	24	0	0	0.00%	0 (0%)

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA *	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW6315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube *	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber .185	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230315	3/15/23	1100	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	1100	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Temp. deg. C = 4.3
Correction Factor = +0.3°C
Chlorine (mg/L) = <0.1
NH3 (mg/L) = <0.1

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ☐ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Hand-delivered to ABC with this copy of COC

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: E. A	Date/Time: 3-15-2023/1625	Receiv	Date/Time: 3/15/23 1625
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 7 March - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 15.00 ug/l
EC50 = 20.00 ug/l

ENDPOINT: REPRODUCTION

NOEC = 10.00 ug/l

IC25 = 14.63 ug/l
IC50 = 19.75 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 22 Mar-23 13:33 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
12-3601-0837	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	✓	10	30	17.32	---	1
18-1287-1922	Reproduction	Dunnett Multiple Comparison Test	✓	10	30	17.32	10.0%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
06-1569-8175	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	13	13	13	1
				EC20	14	14	14	
				EC25	15	15	15	
				EC40	18	18	18	
				EC50	20	20	20	
07-2699-2510	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	12.58	11.21	13	1
			✓	IC20	13.61	12.31	14	
			✓	IC25	14.63	13.42	15	
			✓	IC40	17.7	16.73	18	
			✓	IC50	19.75	18.94	20	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits Lower	Upper	Overlap	Decision
06-1569-8175	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
12-3601-0837	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
07-2699-2510	Reproduction	Control Resp	22.9	15	<<	Yes	Passes Criteria
18-1287-1922	Reproduction	Control Resp	22.9	15	<<	Yes	Passes Criteria
18-1287-1922	Reproduction	PMSD	0.1001	0.13	0.47	Yes	Below Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	22.9	21.57	24.23	20	26	0.5859	1.853	8.09%	0.00%
3		10	22.5	20.26	24.74	18	27	0.9916	3.136	13.94%	1.75%
5		10	22.3	20.95	23.65	20	25	0.5972	1.889	8.47%	2.62%
10		10	22.4	20.61	24.19	19	28	0.7916	2.503	11.18%	2.18%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail MD5: E68F14682D021D024F00396964E3E9BD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail MD5: 2815D12133967AE436D4FC557F35CDBA

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Report Date: 22 Mar-23 13:33 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	18-1287-1922	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	2815D12133967AE436D4FC557F35CDBA	**Editor ID:**	007-730-798-8
Batch ID:	04-0989-8037	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	07 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Mar-23 14:53	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	01-9737-1339	**Code:**	CER030723	**Project:**	REF TOX
Sample Date:	07 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	10	30	17.32	---	2.292	10.01%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	0.3722	2.133	2.292	CDF	0.5995	Non-Significant Effect
		5	18	0.5583	2.133	2.292	CDF	0.5168	Non-Significant Effect
		10	18	0.4652	2.133	2.292	CDF	0.5584	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	22.9	15	<<	Yes	Passes Criteria
PMSD	0.1001	0.13	0.47	Yes	Below Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.075	0.691667	3	0.1198	0.9479	Non-Significant Effect
Error	207.9	5.775	36			
Total	209.975		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	3.337	11.34	0.3425	Equal Variances
	Levene Equality of Variance Test	1.545	4.377	0.2195	Equal Variances
	Mod Levene Equality of Variance Test	1.103	4.377	0.3604	Equal Variances
Distribution	Anderson-Darling A2 Test	0.2615	3.878	0.7332	Normal Distribution
	D'Agostino Kurtosis Test	0.1221	2.576	0.9028	Normal Distribution
	D'Agostino Skewness Test	0.9793	2.576	0.3274	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.974	9.21	0.6145	Normal Distribution
	Kolmogorov-Smirnov D Test	0.08088	0.1617	0.7382	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9833	0.9236	0.8103	Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	22.9	21.57	24.23	22.25	20	26	0.5859	8.09%	0.00%
3		10	22.5	20.26	24.74	22	18	27	0.9916	13.94%	1.75%
5		10	22.3	20.95	23.65	22.6	20	25	0.5972	8.47%	2.62%
10		10	22.4	20.61	24.19	22.75	19	28	0.7916	11.18%	2.18%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

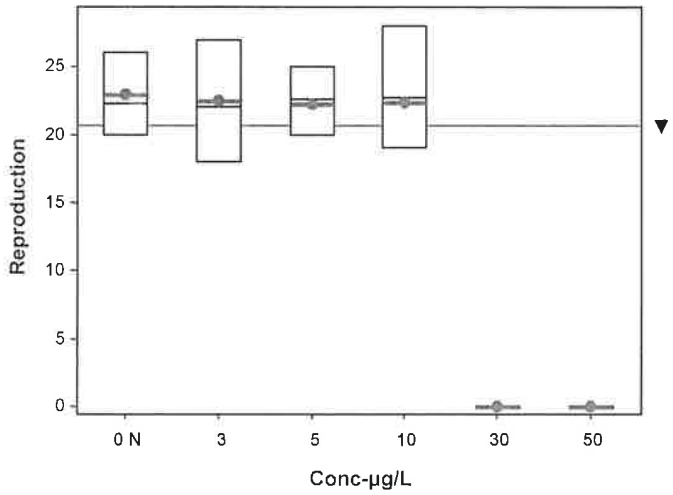
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

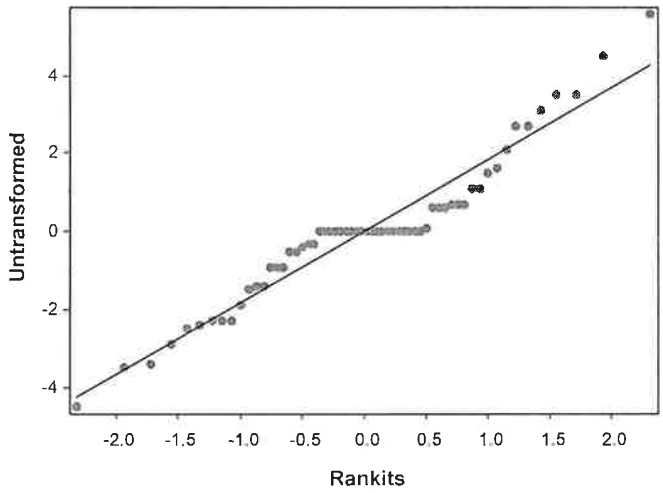
Analysis ID:	18-1287-1922	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	2815D12133967AE436D4FC557F35CDBA	**Editor ID:**	007-730-798-8

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Graphics





CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	06-1569-8175	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	007-730-798-8
Batch ID:	04-0989-8037	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	07 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Mar-23 14:53	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	01-9737-1339	**Code:**	CER030723	**Project:**	REF TOX
Sample Date:	07 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	13	13	13
EC20	14	14	14
EC25	15	15	15
EC40	18	18	18
EC50	20	20	20

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣA/ΣB	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

7d Survival Rate Binomials

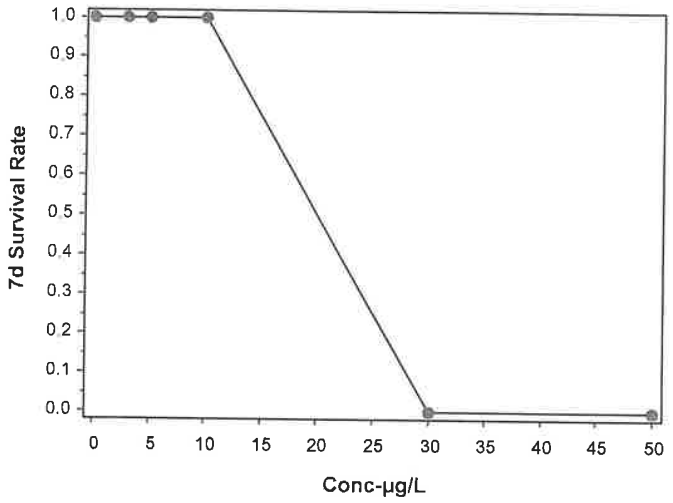
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	06-1569-8175	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	007-730-798-8

Graphics



CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-2699-2510	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	2815D12133967AE436D4FC557F35CDBA	**Editor ID:**	007-730-798-8
Batch ID:	04-0989-8037	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	07 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Mar-23 14:53	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	01-9737-1339	**Code:**	CER030723	**Project:**	REF TOX
Sample Date:	07 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	401085	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	22.9	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	12.58	11.21	13
IC20	13.61	12.31	14
IC25	14.63	13.42	15
IC40	17.7	16.73	18
IC50	19.75	18.94	20

Reproduction Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	22.9	22.25	20	26	8.09%	0.00%	22.9	0.00%
3		10	22.5	22	18	27	13.94%	1.75%	22.5	1.75%
5		10	22.3	22.6	20	25	8.47%	2.62%	22.35	2.40%
10		10	22.4	22.75	19	28	11.18%	2.18%	22.35	2.40%
30		10	0	0	0	0	---	100.00%	0	100.00%
50		10	0	0	0	0	---	100.00%	0	100.00%

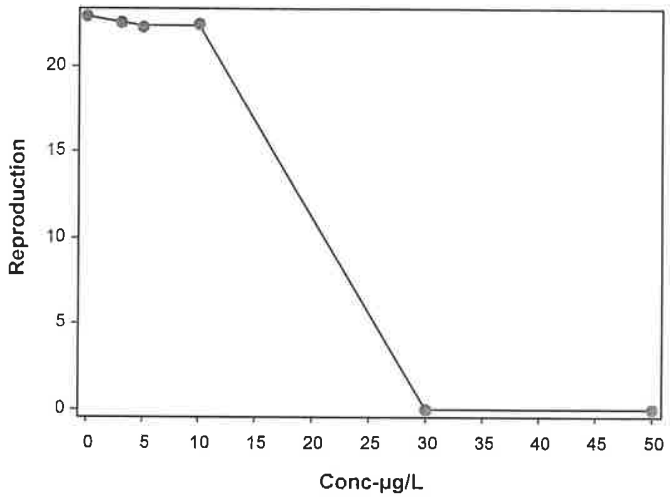
Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	07-2699-2510	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	2815D12133967AE436D4FC557F35CDBA	**Editor ID:**	007-730-798-8

Graphics



CETIS Analytical Report

Report Date: 22 Mar-23 13:33 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-3601-0837	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	22 Mar-23 7:40	MD5 Hash:	E68F14682D021D024F00396964E3E9BD	Editor ID:	007-730-798-8
Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0000	Exact	2.7E-05	Significant Effect
		50*	0.0000	Exact	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		0	10	10	0.0000	1.0000	100.00%
50		0	10	10	0.0000	1.0000	100.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

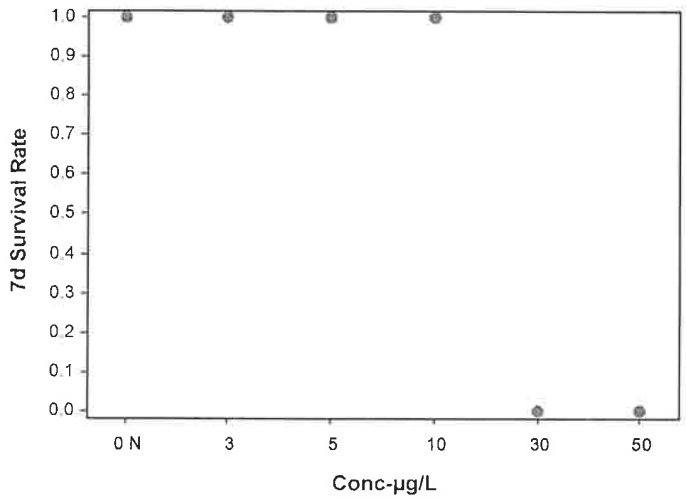
Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	12-3601-0837	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	007-730-798-8

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Report Date: 22 Mar-23 13:34 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	04-0989-8037	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**		
Start Date:	07 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	14 Mar-23 14:53	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24
Sample ID:	01-9737-1339	**Code:**	CER030723	**Project:**	REF TOX	
Sample Date:	07 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant	
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX	
Sample Age:	---	**Client:**	ABC Labs			

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	63	63	63	63	63	0	0	0.00%	0
50		4	62	62	62	62	62	0	0	0.00%	0
Overall		12	62.67	62.35	62.98	62	63	0.1421	0.4924	0.79%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.5	370.6	376.4	369	379	0.4278	3.423	0.92%	0
3		8	369.2	366.6	371.9	362	373	0.3939	3.151	0.85%	0
5		8	367.2	364.7	369.8	360	369	0.3824	3.059	0.83%	0
10		8	366.6	363.9	369.4	359	369	0.4115	3.292	0.90%	0
30		6	363.7	360.1	367.3	357	367	0.5741	3.445	0.95%	0
50		3	361	352	370	357	364	1.202	3.606	1.00%	0
Overall		41	367.8	366.3	369.3	357	379	0.7447	4.769	1.30%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.763	7.495	8.03	7	8	0.04005	0.3204	4.13%	0
3		8	7.738	7.506	7.969	7.1	8	0.03468	0.2774	3.59%	0
5		8	7.712	7.454	7.971	7	8	0.03864	0.3091	4.01%	0
10		8	7.738	7.477	7.998	7	8	0.03892	0.3114	4.02%	0
30		6	7.8	7.706	7.894	7.7	7.9	0.01491	0.08944	1.15%	0
50		3	7.8	7.552	8.048	7.7	7.9	0.03333	0.1	1.28%	0
Overall		41	7.751	7.669	7.833	7	8	0.04059	0.2599	3.35%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	96	96	96	96	96	0	0	0.00%	0
50		4	99	99	99	99	99	0	0	0.00%	0
Overall		12	97	96.06	97.94	96	99	0.4264	1.477	1.52%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8	8	8	8	8	0	0	0.00%	0
3		8	8	8	8	8	8	0	0	0.00%	0
5		8	8	8	8	8	8	0	0	0.00%	0
10		8	7.975	7.936	8.014	7.9	8	0.005786	0.04629	0.58%	0
30		6	7.95	7.893	8.007	7.9	8	0.009127	0.05476	0.69%	0
50		3	7.967	7.823	8.11	7.9	8	0.01924	0.05773	0.72%	0
Overall		41	7.985	7.974	7.997	7.9	8	0.005589	0.03578	0.45%	0 (0%)

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		6	24	24	24	24	24	0	0	0.00%	0
50		3	24	24	24	24	24	0	0	0.00%	0
Overall		41	24	24	24	24	24	0	0	0.00%	0 (0%)

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210716.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131262-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131262-3)	3/15/23	11:00 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1601		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR6G

Loc: 570
131262

570-131262 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMANICO	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230315	3/15/23	1100	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
TB_20230315-1	3/15/23	1100	TB	WM	2	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings ED8FJ6UX

Meter Serial #

Time of Readings 1100

DO (mg/L)

pH

Temp (°C/°F)

TRC (mg/L)

Checked by:

Date/Time:

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/15/23 1333	Received by: EC	Date/Time: 3/15/23 1375
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.3/2.3 2.5/2.5 2.9/2.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/12/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. ADAMOWICZ	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230315	3/15/23	1100	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	1100	TB	WM	2	N	N				X																	
								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3-15-2023 1735	Received by:	Company: EC	Date/Time: 3/15/23 1735
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by:	Company: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received by:		Date/Time:

2-3/2-3 2-5/2-5 2-9/2-9
Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131262-6

Login Number: 131262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:38:36 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131262-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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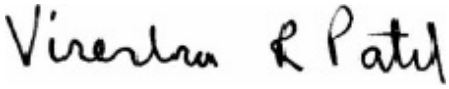
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Sample Summary 7
Subcontract Data 8
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Receipt Checklists 14

Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-131262-7
Project/Site: Boeing SSFL ISRA and BMP - NEW

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-7

Job ID: 570-131262-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131262-7

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.5º C and 2.9º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2 - "Wastewater" matrix: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-7
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131262-1	EPBLLC_20230315	Water	03/15/23 11:00	03/15/23 17:35

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322307102
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/17/2023
Analyzed: 03/31/2023

Proj: 570-210891-.1/ 570-131262-7/ 570-131262/ Boeing SSFL ISRA and BMP - NEW

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS					
						Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
								MFL (million fibers per liter)		
EPBLLC_20230315_20230314 (570-131262-1) 322307102-0001	3/20/2023 12:00 PM	0.10	1288	0.5800	≥ 0.5 µm	None Detected	ND	22.00	<22.00	0.00 - 82.00
					> 10 µm only	None Detected	ND	22.00	<22.00	0.00 - 82.00

Collection Date/Time: *03/15/2023 11:00 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Kyeong Corbin (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 03/31/2023 08:46:27

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

#322307102

Chain of Custody Record

eurofins | Environment Testing

4/9/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210891.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131262-7
Address: 520 Mission Street, ,	Due Date Requested: 3/29/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: ~~57014595~~ 570-131262			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/16/		Edwin Trujillo (fed)	3/17/23 1:25pm	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

OrderID: 322307102

ICOC No:
570-210891

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Level IV package needed. Screen as Wastewater matrix

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210716.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131262-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131262-3)	3/15/23	11:00 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1601		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR669

Loc: 570
131262

570-131262 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

ns Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMANICO	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Be, Ba, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230315	3/15/23	1100	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230315-1	3/15/23	1100	TB	WM	2	N	N														x					

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings ED8FJ6UX
Meter Serial #
Time of Readings 1100
DO (mg/L)
pH
Temp (°C/°F)
TRC (mg/L)
Checked by:
Date/Time:

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/15/23 1333	Received by: EC			Date/Time: 3/15/23 1375
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC			Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:			Date/Time:

2.3/2.3 2.5/2.5 2.9/2.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/9/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230315	3/15/23	1100	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	1100	TB	WM	2	N	N				X																	
								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3-15-2023 1735	Received by:	Company: EC	Date/Time: 3/15/23 1735
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by:	Company: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received by:		Date/Time:

2-3/2-3 2-5/2-5 2-9/2-9
Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131262-7

Login Number: 131262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/19/2023 3:24:38 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131262-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

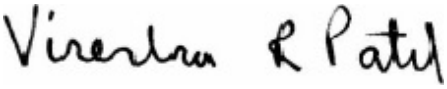
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/19/2023 3:24:38 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-8

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Client: Haley & Aldrich, Inc. Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131262-8

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.5º C and 2.9º C.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 606931
The matrix spike (MS) recoveries for Gross Alpha were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.
(570-131459-Q-1-G MS)

Method 900.0: Gross Alpha and Gross Beta batch 606931
The detection goal was not met for the sample duplicate. However the purpose of the DUP is to demonstrate batch precision. The precision was within control limits demonstrating no adverse effect from the discrepancy.

(570-131459-Q-1-I DU)

Method 900.0: Gross Alpha and Gross Beta batch 606931
The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass: EPBLLC_20230315 (570-131262-1). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 606931
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230315 (570-131262-1), (LCS 160-606931/2-A), (LCSB 160-606931/3-A), (MB 160-606931/1-A), (570-131459-Q-1-F), (570-131459-Q-1-I DU), (570-131459-Q-1-G MS) and (570-131459-Q-1-H MSBT)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227

Job ID: 570-131262-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBLLC_20230315 (570-131262-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBLLC_20230315 (570-131262-1), (570-131073-AT-1-B) and (570-131073-AT-1-C DU)

Methods 903.0, 9315: Radium-226 prep batch 160-604894:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230315 (570-131262-1), (LCS 160-604894/2-A), (LCSD 160-604894/3-A) and (MB 160-604894/1-A)

Job ID: 570-131262-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Methods 903.0, 9315: Radium-226 batch 605215
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230315 (570-131262-1), (LCS 160-605215/2-A), (LCSD 160-605215/3-A) and (MB 160-605215/1-A)

Methods 904.0, 9320: Radium-228 batch 605216
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230315 (570-131262-1), (LCS 160-605216/2-A), (LCSD 160-605216/3-A) and (MB 160-605216/1-A)

Methods 904.0, 9320: Ra-228 160-604896
The detection goal was not met for the following sample due a reduced aliquot, which can be attributed to the presence of matrix interferences: EPBLLC_20230315 (570-131262-1). Analytical results are reported with the detection limit achieved.

Methods 904.0, 9320: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.
Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Method 905: Strontium-90 batch 605090
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230315 (570-131262-1), (LCS 160-605090/2-A), (MB 160-605090/1-A), (380-41106-B-1-A) and (380-41106-C-1-A DU)

Method 905: Strontium-90 batch 606565
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230315 (570-131262-1), (LCS 160-606565/2-A), (LCSD 160-606565/3-A) and (MB 160-606565/1-A)

Method 906.0: Tritium 606188
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBLLC_20230315 (570-131262-1), (LCS 160-606188/2-A), (MB 160-606188/1-A), (570-130861-J-1-A), (570-130861-J-1-B DU), (570-130862-I-1-A) and (570-130862-I-1-B MS)

Method A-01-R: Isotopic Uranium batch 605729
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230315 (570-131262-1), (LCS 160-605729/2-A), (MB 160-605729/1-A), (570-131449-AX-1-B) and (570-131449-AX-1-C DU)

Method A-01-R: Isotopic Uranium batch 606930
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230315 (570-131262-1), (LCS 160-606930/2-A), (MB 160-606930/1-A), (570-131940-R-1-E) and (570-131940-R-1-F DU)

Method ExtChrom: Uranium Prep Batch 160-605729:
The following sample was prepared at a reduced aliquot due to discoloration: EPBLLC_20230315 (570-131262-1).

Method ExtChrom: Uranium Prep Batch 160-606930:

Job ID: 570-131262-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBLLC_20230315 (570-131262-1).

Method LSC_Dist_Susp:

Method PrecSep_0: Radium-228 Prep Batch 160-604896

The following sample was prepared at a reduced aliquot due to Matrix: EPBLLC_20230315 (570-131262-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0: Radium 228 Prep Batch 160-605216

The following sample was prepared at a reduced aliquot due to Matrix: EPBLLC_20230315 (570-131262-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium-226 Prep Batch 160-604894

The following sample was prepared at a reduced aliquot due to Matrix: EPBLLC_20230315 (570-131262-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-605215

The following sample was prepared at a reduced aliquot due to Matrix: EPBLLC_20230315 (570-131262-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium 90 Prep Batch 160-605090

The following sample was prepared at a reduced aliquot due to Matrix: EPBLLC_20230315 (570-131262-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 606565

The following sample was prepared at a reduced aliquot due to Matrix: EPBLLC_20230315 (570-131262-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPBLLC_20230315
Lab Sample ID: 570-131262-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	68.0	G	23.6	24.9	3.00	25.6	pCi/L	04/11/23 15:16	04/14/23 05:12	1
Gross Beta	65.8	G	13.9	15.3	4.00	15.3	pCi/L	04/11/23 15:16	04/14/23 05:12	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.911	U G	3.65	3.65	3.00	6.75	pCi/L	04/11/23 15:16	04/14/23 05:12	1
Gross Beta	**3.90**		1.95	1.99	4.00	2.78	pCi/L	04/11/23 15:16	04/14/23 05:12	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-5.64	U	9.90	9.93	20.0	15.2	pCi/L	03/22/23 16:26	03/30/23 09:39	1
Potassium-40	20.9	U	120	120		172	pCi/L	03/22/23 16:26	03/30/23 09:39	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.79	U	7.73	7.73	20.0	9.44	pCi/L	03/28/23 16:33	04/12/23 05:16	1
Potassium-40	-61.0	U	99.7	99.9		129	pCi/L	03/28/23 16:33	04/12/23 05:16	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-8

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**3.90**		0.881	0.949	1.00	0.534	pCi/L	03/24/23 10:26	04/18/23 12:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*778*		*30 - 110*	*032 62 3 109 :*	*062142 3 1/ 9 4*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.155	U	0.184	0.184	1.00	0.299	pCi/L	03/28/23 09:34	04/19/23 09:49	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*51.0*		*30 - 110*	*03/28/23 09:36*	*04/15/23 05:55*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.110	U G	1.51	1.51	1.00	2.83	pCi/L	03/24/23 10:45	04/14/23 18:18	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*77.8*		*30 - 110*	*03/24/23 10:45*	*06/16/23 14:14*	*1*
Y Carrier	*94.7*		*30 - 110*	*03/24/23 10:45*	*06/16/23 14:14*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-8

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.456	U	0.482	0.484	1.00	0.784	pCi/L	03/28/23 09:54	04/18/23 12:12	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*5180*		*30 - 110*	*032/42/3 059 6*	*062/42/3 1/9/1/*	*1*
Y Carrier	*4387*		*30 - 110*	*032/42/3 059 6*	*062/42/3 1/9/1/*	*1*

Eurofins Calscience

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Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.942	U	0.930	0.933	3.00	1.81	pCi/L	03/27/23 13:47	04/10/23 16:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*73%*		*30 - 110*	*03/27/23 13:47*	*06/02/23 11:37*	*1*
Y Carrier	*85%*		*30 - 110*	*03/27/23 13:47*	*06/02/23 11:37*	*1*

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-8

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.0311	U	0.393	0.393	3.00	0.718	pCi/L	04/07/23 11:12	04/17/23 19:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*4383*		*30 - 110*	*062072/3 1191/*	*062172/3 15907*	*1*
Y Carrier	*7: 83*		*30 - 110*	*062072/3 1191/*	*062172/3 15907*	*1*

Eurofins Calscience

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4/19/2023

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	57.7	U	139	139	500	246	pCi/L	04/05/23 13:01	04/06/23 14:03	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	13.8		2.50	2.62	1.00	0.714	pCi/L	04/11/23 15:09	04/13/23 16:13	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBLLC_20230315
Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	8.39		1.12	1.22	1.00	0.289	pCi/L	03/30/23 16:34	04/03/23 20:58	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-131262-1	EPBLLC_20230315	77.6
LCS 160-604894/2-A	Lab Control Sample	90.5
LCS 160-605215/2-A	Lab Control Sample	94.8
LCSD 160-604894/3-A	Lab Control Sample Dup	84.0
LCSD 160-605215/3-A	Lab Control Sample Dup	91.0
MB 160-604894/1-A	Method Blank	87.1
MB 160-605215/1-A	Method Blank	94.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-131262-1	EPBLLC_20230315	91.0

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131262-1	EPBLLC_20230315	77.6	86.7
LCS 160-604896/2-A	Lab Control Sample	90.5	89.7
LCS 160-605216/2-A	Lab Control Sample	94.8	81.9
LCSD 160-604896/3-A	Lab Control Sample Dup	84.0	89.7
LCSD 160-605216/3-A	Lab Control Sample Dup	91.0	80.7
MB 160-604896/1-A	Method Blank	87.1	89.0
MB 160-605216/1-A	Method Blank	94.3	79.3

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131262-1	EPBLLC_20230315	91.0	83.7

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc. Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131262-1	EPBLLC_20230315	73.2	69.2
LCS 160-605090/2-A	Lab Control Sample	83.8	75.9
LCS 160-606565/2-A	Lab Control Sample	86.3	77.0
LCSD 160-606565/3-A	Lab Control Sample Dup	85.1	69.9
MB 160-605090/1-A	Method Blank	83.0	70.3
MB 160-606565/1-A	Method Blank	86.6	81.9

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131262-1	EPBLLC_20230315	83.3	76.3

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-605729/2-A	Lab Control Sample	38.1
LCS 160-606930/2-A	Lab Control Sample	90.3
MB 160-605729/1-A	Method Blank	46.2
MB 160-606930/1-A	Method Blank	83.9

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-606931/1-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606931

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.01986	U	0.378	0.378	3.00	0.779	pCi/L	04/11/23 15:16	04/14/23 20:19	1
Gross Beta	1.580		0.602	0.622	4.00	0.817	pCi/L	04/11/23 15:16	04/14/23 20:19	1

Lab Sample ID: LCS 160-606931/2-A
Matrix: Water
Analysis Batch: 607345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606931

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	58.50		8.40	3.00	1.90	pCi/L	116	75 - 125

Lab Sample ID: LCSB 160-606931/3-A
Matrix: Water
Analysis Batch: 607345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606931

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	72.78		7.81	4.00	0.856	pCi/L	99	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	5.575	U	11.5	11.5	20.0	14.5	pCi/L	03/22/23 16:26	03/29/23 21:25	1
Potassium-40	-139.9	U	180	180		285	pCi/L	03/22/23 16:26	03/29/23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		443	pCi/L	100	75 - 125
Cesium-137	40800	42170		5030	20.0	105	pCi/L	103	75 - 125
Cobalt-60	17800	18660		2230		54.8	pCi/L	105	75 - 125

Lab Sample ID: MB 160-605283/1-A
Matrix: Water
Analysis Batch: 607160

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605283

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.793	U	6.67	6.68	20.0	7.49	pCi/L	03/28/23 16:33	04/12/23 04:01	1
Potassium-40	27.15	U	82.6	82.7		106	pCi/L	03/28/23 16:33	04/12/23 04:01	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-605283/2-A
Matrix: Water
Analysis Batch: 607188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605283

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	139700		16600		562	pCi/L	103	75 - 125
Cesium-137	40800	39690		4740	20.0	156	pCi/L	97	75 - 125
Cobalt-60	17700	17220		2060		78.1	pCi/L	97	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-604894/1-A
Matrix: Water
Analysis Batch: 607902

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604894

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.001066	U	0.0707	0.0707	1.00	0.148	pCi/L	03/24/23 10:26	04/18/23 08:36	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*478*		*30 - 110*	*03/24/23 10:26*	*04/18/23 08:36*	*1*

Lab Sample ID: LCS 160-604894/2-A
Matrix: Water
Analysis Batch: 607902

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604894

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	9.242		1.04	1.00	0.149	pCi/L	82	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*508*		*30 - 110*

Lab Sample ID: LCSD 160-604894/3-A
Matrix: Water
Analysis Batch: 607902

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 604894

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226	11.3	9.129		1.04	1.00	0.115	pCi/L	81	75 - 125	0.05	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*468*		*30 - 110*

Lab Sample ID: MB 160-605215/1-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605215

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.03007	U	0.106	0.106	1.00	0.240	pCi/L	03/28/23 09:34	04/19/23 09:48	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-605215/1-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605215

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	568[illegible]3		30 - 110	032[illegible]42[illegible]3 05936	062[illegible]52[illegible]3 05964	1

Lab Sample ID: LCS 160-605215/2-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605215

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	9.998		1.22	1.00	0.220	pCi/L	88	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	568[illegible]4		30 - 110

Lab Sample ID: LCSD 160-605215/3-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 605215

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.18		1.34	1.00	0.181	pCi/L	99	75 - 125	0.46	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	518[illegible]0		30 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-604896/1-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604896

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1366	U	0.289	0.289	1.00	0.593	pCi/L	03/24/23 10:45	04/14/23 18:14	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	478[illegible]1		30 - 110	032[illegible]62[illegible]3 1095[illegible]6.	062[illegible]62[illegible]3 14916	1
Y Carrier	458[illegible]0		30 - 110	032[illegible]62[illegible]3 1095[illegible]6.	062[illegible]62[illegible]3 14916	1

Lab Sample ID: LCS 160-604896/2-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604896

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.03	8.551		1.25	1.00	0.600	pCi/L	106	75 - 125		

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-604896/2-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604896

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	508		30 - 110
Y Carrier	458		30 - 110

Lab Sample ID: LCSD 160-604896/3-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 604896

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.03	8.159		1.27	1.00	0.773	pCi/L	102	75 - 125	0.16	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	460		30 - 110
Y Carrier	458		30 - 110

Lab Sample ID: MB 160-605216/1-A
Matrix: Water
Analysis Batch: 607902

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605216

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4303	U	0.335	0.337	1.00	0.514	pCi/L	03/28/23 09:54	04/18/23 12:06	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	568		30 - 110	03/28/23 09:54	04/18/23 12:06	1
Y Carrier	758		30 - 110	03/28/23 09:54	04/18/23 12:06	1

Lab Sample ID: LCS 160-605216/2-A
Matrix: Water
Analysis Batch: 607905

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605216

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.02	6.901		1.03	1.00	0.456	pCi/L	86	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	568		30 - 110
Y Carrier	418		30 - 110

Lab Sample ID: LCSD 160-605216/3-A
Matrix: Water
Analysis Batch: 607905

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 605216

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.02	6.127		0.972	1.00	0.531	pCi/L	76	75 - 125	0.39	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-605216/3-A
Matrix: Water
Analysis Batch: 607905

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 605216

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	5180		30 - 110
Y Carrier	4087		30 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-605090/1-A
Matrix: Water
Analysis Batch: 606669

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605090

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.09802	U	0.194	0.194	3.00	0.333	pCi/L	03/27/23 13:47	04/10/23 16:12	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	4380		30 - 110	032723 13957	062102 3 1: 91/	1
Y Carrier	7083		30 - 110	032723 13957	062102 3 1: 91/	1

Lab Sample ID: LCS 160-605090/2-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605090

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.184		0.800	3.00	0.317	pCi/L	98	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	4384		30 - 110
Y Carrier	7. 85		30 - 110

Lab Sample ID: MB 160-606565/1-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606565

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1675	U	0.204	0.204	3.00	0.337	pCi/L	04/07/23 11:12	04/17/23 19:03	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	4: 8		30 - 110	062072 3 1191/	062172 3 15903	1
Y Carrier	4185		30 - 110	062072 3 1191/	062172 3 15903	1

Lab Sample ID: LCS 160-606565/2-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.570		0.853	3.00	0.305	pCi/L	103	75 - 125		

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	4: 83		30 - 110
Y Carrier	7780		30 - 110

Lab Sample ID: LCSD 160-606565/3-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.34	7.501		0.887	3.00	0.401	pCi/L	102	75 - 125	0.04	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	4. 81		30 - 110
Y Carrier	: 585		30 - 110

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-606188/1-A
Matrix: Water
Analysis Batch: 606654

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606188

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	63.06	U	138	138	500	240	pCi/L	04/05/23 13:01	04/06/23 11:02	1

Lab Sample ID: LCS 160-606188/2-A
Matrix: Water
Analysis Batch: 606654

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606188

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2090	1960		355	500	247	pCi/L	94	75 - 125		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605729/1-A
Matrix: Water
Analysis Batch: 605912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605729

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1686	U	0.206	0.207	1.00	0.300	pCi/L	03/30/23 16:34	04/03/23 20:56	1

Lab Sample ID: LCS 160-605729/2-A
Matrix: Water
Analysis Batch: 605927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605729

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.57		1.98	1.00	0.356	pCi/L	107	75 - 125		
Uranium-238			13.0	13.66		1.99	1.00	0.311	pCi/L	105	75 - 125		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-605729/2-A
Matrix: Water
Analysis Batch: 605927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605729

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-/ 3/	*348*		*30 - 110*

Lab Sample ID: MB 160-606930/1-A
Matrix: Water
Analysis Batch: 607234

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606930

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.09977	U	0.1021	0.1023	1.00	0.128	pCi/L	04/11/23 15:09	04/13/23 16:11	1

Lab Sample ID: LCS 160-606930/2-A
Matrix: Water
Analysis Batch: 607236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606930

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.83		1.51	1.00	0.123	pCi/L	101	75 - 125		
Uranium-238			13.0	14.23		1.63	1.00	0.0649	pCi/L	109	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-/ 3/	*508*		*30 - 110*

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Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Total/NA	Water	Fill_Geo-0	
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Filtration Batch: 604832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Dissolved	Water	Filtration	
570-131262-1	EPBLLC_20230315	Dissolved	Water	Filtration	
570-131262-1	EPBLLC_20230315	Dissolved	Water	Filtration	
570-131262-1	EPBLLC_20230315	Dissolved	Water	Filtration	

Prep Batch: 604894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Total/NA	Water	PrecSep-21	
MB 160-604894/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-604894/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-604894/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 604896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Total/NA	Water	PrecSep_0	
MB 160-604896/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-604896/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-604896/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 605090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Total/NA	Water	PrecSep-7	
MB 160-605090/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-605090/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 605215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Dissolved	Water	PrecSep-21	604832
MB 160-605215/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-605215/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-605215/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 605216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Dissolved	Water	PrecSep_0	604832
MB 160-605216/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-605216/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-605216/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Dissolved	Water	Fill_Geo-0	604832
MB 160-605283/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605283/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

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Prep Batch: 605729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Dissolved	Water	ExtChrom	604832
MB 160-605729/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605729/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Total/NA	Water	LSC_Dist_Susp	
MB 160-606188/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-606188/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 606565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Dissolved	Water	PrecSep-7	604832
MB 160-606565/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-606565/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-606565/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 606930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Total/NA	Water	ExtChrom	
MB 160-606930/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-606930/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131262-1	EPBLLC_20230315	Dissolved	Water	Evaporation	604832
570-131262-1	EPBLLC_20230315	Total/NA	Water	Evaporation	
MB 160-606931/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606931/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606931/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-8

Client Sample ID: EPBLLC_20230315

Date Collected: 03/15/23 11:00
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131262-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	Evaporation			57.69 mL	1.0 g	606931	04/11/23 15:16	MST	EET SL
Dissolved	Analysis	900.0		1			607427	04/14/23 05:12	SCB	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	Evaporation			13.01 mL	1.0 g	606931	04/11/23 15:16	MST	EET SL
Total/NA	Analysis	900.0		1			607427	04/14/23 05:12	SCB	EET SL
	Instrument ID: GFPCORANGE									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 15:55	SAC	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Dissolved	Analysis	901.1		1			607161	04/12/23 05:16	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Total/NA	Analysis	901.1		1			605600	03/30/23 09:39	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	PrecSep-21			749.70 mL	1.0 g	605215	03/28/23 09:34	DJP	EET SL
Dissolved	Analysis	903.0		1			608037	04/19/23 09:49	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			249.96 mL	1.0 g	604894	03/24/23 10:26	DJP	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	607902	04/18/23 12:28	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	PrecSep_0			749.70 mL	1.0 g	605216	03/28/23 09:54	DJP	EET SL
Dissolved	Analysis	904.0		1			607905	04/18/23 12:12	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			249.96 mL	1.0 g	604896	03/24/23 10:45	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	607421	04/14/23 18:18	SCB	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	PrecSep-7			498.85 mL	1.0 g	606565	04/07/23 11:12	DJP	EET SL
Dissolved	Analysis	905		1			607842	04/17/23 19:07	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			255.08 mL	1.0 g	605090	03/27/23 13:47	DJP	EET SL
Total/NA	Analysis	905		1			606668	04/10/23 16:37	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			99.27 mL	1.0 g	606188	04/05/23 13:01	SEH	EET SL
Total/NA	Analysis	906.0		1			606654	04/06/23 14:03	REV	EET SL
	Instrument ID: LSCTEAL									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	ExtChrom			298.5 mL	1.0 mL	605729	03/30/23 16:34	CMM	EET SL
Dissolved	Analysis	A-01-R		1			605988	04/03/23 20:58	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			96.94 mL	1.0 mL	606930	04/11/23 15:09	MAL	EET SL
Total/NA	Analysis	A-01-R		1			607394	04/13/23 16:13	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-8

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131262-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-8

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131262-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131262-1	EPBLLC_20230315	Water	03/15/23 11:00	03/15/23 17:35

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210716.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131262-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131262-3)	3/15/23	11:00 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1601		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR669

Loc: 570
131262

570-131262 Chain of Custody

Calscience

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMANICO	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 – (E903.0/E903, E904, E905) (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230315	3/15/23	1100	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-1	3/15/23	1100	TB	WM	2	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings ED8FJ6UX

Meter Serial #

Time of Readings 1100

DO (mg/L)

pH

Temp (°C/°F)

TRC (mg/L)

Checked by:

Date/Time:

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/15/23 1333	Received by: EC			Date/Time: 3/15/23 1375
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC			Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:			Date/Time:

2.3/2.3 2.5/2.5 2.9/2.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/19/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: M. APRIL DOMINICK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230315	3/15/23	1100	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	1100	TB	WM	2	N	N				X																	
								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:					
Relinquished by:	Company: H&A	Date/Time: 3-15-2023 1735	Received:	Company: EC	Date/Time: 3/15/23 1735	
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received:	Company: EC	Date/Time: 3/15/23 17:35	
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:	

2-3/2-3 2-5/2-5 2-9/2-9
Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210888.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131262-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/17/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230315_20230314 (570-131262-1)	3/15/23	11:00 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	9	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Ongin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	03/16/23 12:27		FED EX		
Relinquished by: FED EX	Date/Time:	Company	Received by: Sierra Worthington	Date/Time: MAR 17 2023 0930	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131262-8

Login Number: 131262
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131262-8

Login Number: 131262
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 03/17/23 11:28 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131264-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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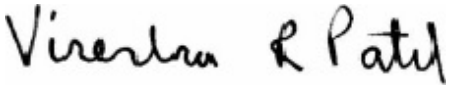
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-131264-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LR	LCS/LCSD recovery below method control limits

HPLC/IC

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General CTemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	hTese commonly used abbreviations may or may not be present in tTis report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131264-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131264-1

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.8º C and 3.1º C.

Receipt Exceptions

One of the containers for the following samples were received broken: EPBBC_20230315 (570-131264-1), TB-20230315-1 (570-131264-2) and TB-20230315-2 (570-131264-3). The 1 liter unpreserved amberglass was received broken with no remaining volume.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-311826. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-312115.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-314108 recovered above the upper control limit for 4,6-Dinitro-2-methylphenol. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: EPBBC_20230315 (570-131264-1).

Method 625.1 SIM: The laboratory control sample (LCS) for preparation batch 570-313228 and analytical batch 570-314108 recovered outside acceptance limits for 1,2,4-Trichlorobenzene, 2,4-Dichlorophenol, 4,6-Dinitro-2-methylphenol, 2-Nitrophenol, bis (2-chloroisopropyl) ether, Hexachloroethane, Nitrobenzene, Acenaphthylene and Fluorene. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 300.0: The following sample was diluted due to the nature of the sample matrix: EPBBC_20230315 (570-131264-1). Elevated reporting limits (RLs) are provided.

Method 314.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-312272 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Perchlorate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

Method 314.0: Due to the high concentration of Perchlorate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-312272 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 570-131264-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-312120 and analytical batch 570-312206 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 200.8: The method blank for preparation batch 570-312429 and analytical batch 570-312598 contained Chromium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBBC_20230315 (570-131264-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBBC_20230315 (570-131264-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-312913.
Method: 1664.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-313523. 8015B_DRO. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-313228. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Client Sample ID: EPBBC_20230315

Lab Sample ID: 570-131264-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Di-n-butyl phthalate	2.0		1.9	1.8	ug/L	1		625.1 SIM	Total/NA
C13-C28	0.073		0.049	0.035	mg/L	1		8015B	Total/NA
Hexavalent chromium	0.16	J,DX	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.17	J,DX	0.20	0.019	ug/L	1		218.6	Dissolved
Chloride	12		5.0	1.8	mg/L	5		300.0	Total/NA
Nitrate as N	1.8		0.50	0.098	mg/L	5		300.0	Total/NA
Sulfate	33		5.0	1.2	mg/L	5		300.0	Total/NA
Nitrate Nitrite as N	1.8		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	120	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	110	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Aluminum	5900		300	170	ug/L	20		200.8	Total Recoverable
Arsenic	3.2		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	94		1.0	0.17	ug/L	1		200.8	Total Recoverable
Beryllium	0.46	J,DX	0.50	0.26	ug/L	1		200.8	Total Recoverable
Cadmium	0.22	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	12	MB	2.0	0.14	ug/L	1		200.8	Total Recoverable
Cobalt	4.4		1.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	11		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	9800		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	210		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	11		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	9.5		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	0.62	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Zinc	50		20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	1.1	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Thallium	0.15	J,DX	1.0	0.11	ug/L	1		200.8	Total Recoverable
Aluminum	110	BU	15	8.6	ug/L	1		200.8	Dissolved
Arsenic	1.3	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	27	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.53	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Cobalt	0.24	J,DX BU	1.0	0.14	ug/L	1		200.8	Dissolved
Copper	2.6	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	120	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	6.7	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.9	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Lead	0.19	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Antimony	0.40	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPBBC_20230315 (Continued)
Lab Sample ID: 570-131264-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hardness as calcium carbonate	130		7.1	0.50	mg/L	1		SM 2340B	Total Recoverable
Hardness as calcium carbonate	100		7.1	0.50	mg/L	1		SM 2340B	Dissolved
Cr (III)	0.012	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Ammonia	0.038	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	180		0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	330		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Specific Conductance	330		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	250		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	240		10	8.3	mg/L	1		SM 2540D	Total/NA
Settleable Solids	0.20		0.10	0.10	mL/L	1		SM 2540F	Total/NA
Biochemical Oxygen Demand	1.2	J,DX	2.0	1.0	mg/L	1		SM 5210B	Total/NA
Carbon, Total Organic	12		2.0	1.1	mg/L	4		SM 5310D	Total/NA
MBAS	0.054	J,DX	0.20	0.050	mg/L	1		SM 5540C	Total/NA
Clay (less than 0.00391 mm)	17.32		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	0.68		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	72.45		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	89.77		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	9.56		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: TB-20230315-1
Lab Sample ID: 570-131264-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/15/23 21:30	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/15/23 21:30	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/15/23 21:30	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/15/23 21:30	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/15/23 21:30	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/15/23 21:30	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/15/23 21:30	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/15/23 21:30	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/15/23 21:30	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/15/23 21:30	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/15/23 21:30	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/15/23 21:30	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/15/23 21:30	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/15/23 21:30	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/15/23 21:30	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 21:30	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/15/23 21:30	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/15/23 21:30	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/15/23 21:30	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 21:30	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/15/23 21:30	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/15/23 21:30	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/15/23 21:30	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/15/23 21:30	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/15/23 21:30	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/15/23 21:30	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/15/23 21:30	1
2-Hexanone	ND		5.0	2.2	ug/L			03/15/23 21:30	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/15/23 21:30	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/15/23 21:30	1
Acetone	ND		20	16	ug/L			03/15/23 21:30	1
Acrolein	ND		5.0	4.6	ug/L			03/15/23 21:30	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/15/23 21:30	1
Benzene	ND		0.50	0.28	ug/L			03/15/23 21:30	1
Bromobenzene	ND		0.50	0.23	ug/L			03/15/23 21:30	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/15/23 21:30	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/15/23 21:30	1
Bromoform	ND		1.0	0.25	ug/L			03/15/23 21:30	1
Bromomethane	ND		0.50	0.22	ug/L			03/15/23 21:30	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/15/23 21:30	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/15/23 21:30	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/15/23 21:30	1
Chloroethane	ND		1.0	0.29	ug/L			03/15/23 21:30	1
Chloroform	ND		0.50	0.19	ug/L			03/15/23 21:30	1
Chloromethane	ND		0.50	0.30	ug/L			03/15/23 21:30	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/15/23 21:30	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/15/23 21:30	1
Cyclohexane	ND		2.0	0.79	ug/L			03/15/23 21:30	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/15/23 21:30	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
Dibromomethane	ND		0.50	0.19	ug/L			03/15/23 21:30	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/15/23 21:30	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/15/23 21:30	1
Ethanol	ND		100	65	ug/L			03/15/23 21:30	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/15/23 21:30	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/15/23 21:30	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/15/23 21:30	1
Isopropanol	ND		250	120	ug/L			03/15/23 21:30	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/15/23 21:30	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/15/23 21:30	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/15/23 21:30	1
Naphthalene	ND		1.0	0.33	ug/L			03/15/23 21:30	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/15/23 21:30	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/15/23 21:30	1
o-Xylene	ND		0.50	0.15	ug/L			03/15/23 21:30	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/15/23 21:30	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/15/23 21:30	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/15/23 21:30	1
Styrene	ND		0.50	0.19	ug/L			03/15/23 21:30	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/15/23 21:30	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/15/23 21:30	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/15/23 21:30	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/15/23 21:30	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/15/23 21:30	1
Toluene	ND		0.50	0.23	ug/L			03/15/23 21:30	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/15/23 21:30	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/15/23 21:30	1
Trichloroethene	ND		0.50	0.17	ug/L			03/15/23 21:30	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/15/23 21:30	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/15/23 21:30	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/15/23 21:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*60 - 140*		*03/15/23 21:30*	*1*
4-Bromofluorobenzene (Surr)	*94*		*60 - 140*		*03/15/23 21:30*	*1*
Dibromofluoromethane (Surr)	*88*		*60 - 140*		*03/15/23 21:30*	*1*
Toluene-d8 (Surr)	*97*		*60 - 140*		*03/15/23 21:30*	*1*

Client Sample ID: 8B-20230315-1
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-2
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/15/23 21:08	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/15/23 21:08	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/15/23 21:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/15/23 21:08	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/15/23 21:08	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/15/23 21:08	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/15/23 21:08	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/15/23 21:08	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 8B-20230315-1
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-2
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/15/23 21:08	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/15/23 21:08	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/15/23 21:08	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/15/23 21:08	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/15/23 21:08	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/15/23 21:08	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/15/23 21:08	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 21:08	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/15/23 21:08	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/15/23 21:08	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/15/23 21:08	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 21:08	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/15/23 21:08	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/15/23 21:08	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/15/23 21:08	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/15/23 21:08	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/15/23 21:08	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/15/23 21:08	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/15/23 21:08	1
2-Hexanone	ND		5.0	2.2	ug/L			03/15/23 21:08	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/15/23 21:08	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/15/23 21:08	1
Acetone	ND		20	16	ug/L			03/15/23 21:08	1
Acrolein	ND		5.0	4.6	ug/L			03/15/23 21:08	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/15/23 21:08	1
Benzene	ND		0.50	0.28	ug/L			03/15/23 21:08	1
Bromobenzene	ND		0.50	0.23	ug/L			03/15/23 21:08	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/15/23 21:08	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/15/23 21:08	1
Bromoform	ND		1.0	0.25	ug/L			03/15/23 21:08	1
Bromomethane	ND		0.50	0.22	ug/L			03/15/23 21:08	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/15/23 21:08	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/15/23 21:08	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/15/23 21:08	1
Chloroethane	ND		1.0	0.29	ug/L			03/15/23 21:08	1
Chloroform	ND		0.50	0.19	ug/L			03/15/23 21:08	1
Chloromethane	ND		0.50	0.30	ug/L			03/15/23 21:08	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/15/23 21:08	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/15/23 21:08	1
Cyclohexane	ND		2.0	0.79	ug/L			03/15/23 21:08	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/15/23 21:08	1
Dibromomethane	ND		0.50	0.19	ug/L			03/15/23 21:08	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/15/23 21:08	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/15/23 21:08	1
Ethanol	ND		100	65	ug/L			03/15/23 21:08	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/15/23 21:08	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/15/23 21:08	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/15/23 21:08	1
Isopropanol	ND		250	120	ug/L			03/15/23 21:08	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: 8B-20230315-1
Date Collected: 03/15/23 0v:30
Date Receiyed: 03/15/23 17:35

Lab Sample ID: 570-131264-2
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
Isopropylbenzene	ND		0.50	0.16	ug/L			03/15/23 21:08	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/15/23 21:08	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/15/23 21:08	1
Naphthalene	ND		1.0	0.33	ug/L			03/15/23 21:08	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/15/23 21:08	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/15/23 21:08	1
o-Xylene	ND		0.50	0.15	ug/L			03/15/23 21:08	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/15/23 21:08	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/15/23 21:08	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/15/23 21:08	1
Styrene	ND		0.50	0.19	ug/L			03/15/23 21:08	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/15/23 21:08	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/15/23 21:08	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/15/23 21:08	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/15/23 21:08	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/15/23 21:08	1
Toluene	ND		0.50	0.23	ug/L			03/15/23 21:08	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/15/23 21:08	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/15/23 21:08	1
Trichloroethene	ND		0.50	0.17	ug/L			03/15/23 21:08	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/15/23 21:08	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/15/23 21:08	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/15/23 21:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*60 - 140*		*03/15/23 21:08*	*1*
4-Bromofluorobenzene (Surr)	*94*		*60 - 140*		*03/15/23 21:08*	*1*
Dibromofluoromethane (Surr)	*89*		*60 - 140*		*03/15/23 21:08*	*1*
Toluene-d8 (Surr)	*98*		*60 - 140*		*03/15/23 21:08*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: SW, 46 , 260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/16/23 18:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*93*		*67 - 133*		*03/16/23 18:58*	*1*

Method: EPA 625.1 SIM - Semiyolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBBC_20230315
Lab Sample ID: 570-131264-1
Date Collected: 03/15/23 0v:30
Matrix: Water
Date Receiyed: 03/15/23 17:35

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
1,2,4-Trichlorobenzene	ND	LR	0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:12	1
1,2-Dichlorobenzene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:12	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.19	0.086	ug/L		03/22/23 05:11	03/23/23 21:12	1
1,3-Dichlorobenzene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:12	1
1,4-Dichlorobenzene	ND		0.19	0.13	ug/L		03/22/23 05:11	03/23/23 21:12	1
2,4,6-Trichlorophenol	ND		0.95	0.13	ug/L		03/22/23 05:11	03/23/23 21:12	1
2,4-Dichlorophenol	ND	LR	0.95	0.13	ug/L		03/22/23 05:11	03/23/23 21:12	1
2,4-Dimethylphenol	ND		0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:12	1
2,4-Dinitrophenol	ND		4.8	4.1	ug/L		03/22/23 05:11	03/23/23 21:12	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:12	1
2,6-Dinitrotoluene	ND		0.19	0.17	ug/L		03/22/23 05:11	03/23/23 21:12	1
2-Chloronaphthalene	ND	LR BA	0.19	0.14	ug/L		03/22/23 05:11	03/23/23 21:12	1
2-Chlorophenol	ND		0.19	0.091	ug/L		03/22/23 05:11	03/23/23 21:12	1
2-Nitrophenol	ND	LR	4.8	3.3	ug/L		03/22/23 05:11	03/23/23 21:12	1
3,3'-Dichlorobenzidine	ND		4.8	2.9	ug/L		03/22/23 05:11	03/23/23 21:12	1
4,6-Dinitro-2-methylphenol	ND	LR	4.8	4.3	ug/L		03/22/23 05:11	03/23/23 21:12	1
4-Bromophenyl phenyl ether	ND		0.19	0.095	ug/L		03/22/23 05:11	03/23/23 21:12	1
4-Chloro-3-methylphenol	ND		0.95	0.13	ug/L		03/22/23 05:11	03/23/23 21:12	1
4-Chlorophenyl phenyl ether	ND		0.19	0.16	ug/L		03/22/23 05:11	03/23/23 21:12	1
4-Nitrophenol	ND		4.8	3.2	ug/L		03/22/23 05:11	03/23/23 21:12	1
Acenaphthene	ND	LR	0.19	0.094	ug/L		03/22/23 05:11	03/23/23 21:12	1
Acenaphthylene	ND		0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:12	1
Anthracene	ND		0.19	0.080	ug/L		03/22/23 05:11	03/23/23 21:12	1
Benzidine	ND		4.8	2.6	ug/L		03/22/23 05:11	03/23/23 21:12	1
Benzo[a]anthracene	ND		0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:12	1
Benzo[a]pyrene	ND		0.19	0.15	ug/L		03/22/23 05:11	03/23/23 21:12	1
Benzo[b]fluoranthene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:12	1
Benzo[g,h,i]perylene	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 21:12	1
Benzo[k]fluoranthene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:12	1
bis (2-chloroisopropyl) ether	ND	LR	0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:12	1
Bis(2-chloroethoxy)methane	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 21:12	1
Bis(2-chloroethyl)ether	ND		0.19	0.099	ug/L		03/22/23 05:11	03/23/23 21:12	1
Bis(2-ethylhexyl) phthalate	ND		4.8	3.4	ug/L		03/22/23 05:11	03/23/23 21:12	1
Butyl benzyl phthalate	ND		0.95	0.64	ug/L		03/22/23 05:11	03/23/23 21:12	1
Chrysene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:12	1
Dibenz(a,h)anthracene	ND		0.19	0.15	ug/L		03/22/23 05:11	03/23/23 21:12	1
Diethyl phthalate	ND		1.9	0.17	ug/L		03/22/23 05:11	03/23/23 21:12	1
Dimethyl phthalate	ND		1.9	0.093	ug/L		03/22/23 05:11	03/23/23 21:12	1
Di-n-butFl phthalate	**2.0**		1.9	1.8	ug/L		03/22/23 05:11	03/23/23 21:12	1
Di-n-octyl phthalate	ND		2.9	0.51	ug/L		03/22/23 05:11	03/23/23 21:12	1
Fluoranthene	ND		0.19	0.096	ug/L		03/22/23 05:11	03/23/23 21:12	1
Fluorene	ND	LR	0.19	0.090	ug/L		03/22/23 05:11	03/23/23 21:12	1
Hexachlorobenzene	ND		0.19	0.13	ug/L		03/22/23 05:11	03/23/23 21:12	1
Hexachlorobutadiene	ND		0.19	0.14	ug/L		03/22/23 05:11	03/23/23 21:12	1
Hexachlorocyclopentadiene	ND		0.19	0.15	ug/L		03/22/23 05:11	03/23/23 21:12	1
Hexachloroethane	ND	LR	0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:12	1
Indeno[1,2,3-cd]pyrene	ND		0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:12	1
Isophorone	ND		0.19	0.094	ug/L		03/22/23 05:11	03/23/23 21:12	1
Naphthalene	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 21:12	1

Method: EPA 625.1 SIM - Semiyolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Receiyed: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
Nitrobenzene	ND	LR	0.19	0.14	ug/L		03/22/23 05:11	03/23/23 21:12	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		03/22/23 05:11	03/23/23 21:12	1
N-Nitrosodi-n-propylamine	ND		0.19	0.14	ug/L		03/22/23 05:11	03/23/23 21:12	1
N-Nitrosodiphenylamine	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 21:12	1
Pentachlorophenol	ND		0.95	0.80	ug/L		03/22/23 05:11	03/23/23 21:12	1
Phenanthrene	ND		0.19	0.16	ug/L		03/22/23 05:11	03/23/23 21:12	1
Phenol	ND		0.95	0.50	ug/L		03/22/23 05:11	03/23/23 21:12	1
Pyrene	ND		0.19	0.082	ug/L		03/22/23 05:11	03/23/23 21:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*87*		*28 - 127*	*03/22/23 05:11*	*03/23/23 21:12*	*1*
2-Fluorobiphenyl (Surr)	*63*		*31 - 120*	*03/22/23 05:11*	*03/23/23 21:12*	*1*
2-Fluorophenol	*35*		*17 - 120*	*03/22/23 05:11*	*03/23/23 21:12*	*1*
Nitrobenzene-d5	*64*		*27 - 120*	*03/22/23 05:11*	*03/23/23 21:12*	*1*
Phenol-d6 (Surr)	*25*		*10 - 120*	*03/22/23 05:11*	*03/23/23 21:12*	*1*
p-Terphenyl-d14 (Surr)	*81*		*45 - 120*	*03/22/23 05:11*	*03/23/23 21:12*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: SW, 46 , 015B - Gasoline Range Organics - (GC)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
GRO (C4-C12)	ND		50	30	ug/L			03/22/23 05:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*20 - 144*		*03/22/23 05:08*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: SW, 46 , 015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Receiyed: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
C13-C2,	0.073		0.049	0.035	mg/L		03/21/23 17:31	03/27/23 21:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*96*		*53 - 151*	*03/21/23 17:31*	*03/27/23 21:47*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: EPA 21, .6 - ChromiumHJ exayalent (Ion ChromatographF)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Receiyed: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
J exayalent chromium	0.16	XHD9	0.20	0.019	ug/L			03/16/23 06:27	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: EPA 21, .6 - ChromiumHJ exayalent (Ion ChromatographF) - Dissolved

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Receiyed: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
J exayalent chromium	0.17	XHD9	0.20	0.019	ug/L			03/16/23 08:27	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**12**		5.0	1.8	mg/L			03/16/23 01:52	5
Nitrite as N	ND		0.50	0.22	mg/L			03/16/23 01:52	5
Fluoride	ND		0.50	0.23	mg/L			03/16/23 01:52	5
Nitrate as N	**1.,**		0.50	0.098	mg/L			03/16/23 01:52	5
Sulfate	**33**		5.0	1.2	mg/L			03/16/23 01:52	5

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
Perchlorate	ND		2.0	0.91	ug/L			03/17/23 01:12	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.,		0.10	0.020	mg/L			03/20/23 12:49	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: EPA 200.7 Rey 4.4 - Metals (ICP) - 8otal Recoyerable

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Receiyed: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
Boron	120	XHD9	500	3.5	ug/L		03/17/23 07:46	03/17/23 14:57	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	110	J HD9 BQ	500	3.5	ug/L			03/17/23 19:48	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: EPA 200., - Metals (ICP/MS) - 8otal Recoyerable

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Receiyed: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
Aluminum	**5v00**		300	170	ug/L		03/17/23 07:59	03/17/23 11:55	20
Silver	ND		1.0	0.23	ug/L		03/17/23 07:59	03/17/23 11:51	1
Arsenic	**3.2**		1.0	0.16	ug/L		03/17/23 07:59	03/17/23 11:51	1
Barium	**v4**		1.0	0.17	ug/L		03/17/23 07:59	03/17/23 11:51	1
BerFllium	**0.46**	**XHD9**	0.50	0.26	ug/L		03/17/23 07:59	03/17/23 11:51	1
Cadmium	**0.22**	**XHD9**	1.0	0.13	ug/L		03/17/23 07:59	03/17/23 11:51	1
Chromium	**12**	**MB**	2.0	0.14	ug/L		03/17/23 07:59	03/17/23 11:51	1
Cobalt	**4.4**		1.0	0.14	ug/L		03/17/23 07:59	03/17/23 11:51	1
Copper	**11**		2.0	0.32	ug/L		03/17/23 07:59	03/17/23 11:51	1
Iron	**v, 00**		20	3.7	ug/L		03/17/23 07:59	03/17/23 11:51	1
Manganese	**210**		1.0	0.41	ug/L		03/17/23 07:59	03/17/23 11:51	1
Nickel	**11**		2.0	0.17	ug/L		03/17/23 07:59	03/17/23 11:51	1
Lead	**v.5**		1.0	0.12	ug/L		03/17/23 07:59	03/17/23 11:51	1
AntimonF	**0.62**	**XHD9**	2.0	0.36	ug/L		03/17/23 07:59	03/17/23 11:51	1
Zinc	**50**		20	2.8	ug/L		03/17/23 07:59	03/17/23 11:51	1
Selenium	**1.1**	**XHD9**	2.0	0.52	ug/L		03/17/23 07:59	03/17/23 11:51	1
8hallium	**0.15**	**XHD9**	1.0	0.11	ug/L		03/17/23 07:59	03/17/23 11:51	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 200., - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBBC_20230315
Lab Sample ID: 570-131264-1
Date Collected: 03/15/23 0v:30
Matrix: Water
Date Received: 03/15/23 17:35

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
Aluminum	**110**	**BQ**	15	8.6	ug/L			03/16/23 12:22	1
Silver	ND	BU	1.0	0.23	ug/L			03/16/23 12:22	1
Arsenic	**1.3**	**BQ**	1.0	0.16	ug/L			03/16/23 12:22	1
Barium	**27**	**BQ**	1.0	0.17	ug/L			03/16/23 12:22	1
Beryllium	ND	BU	0.50	0.26	ug/L			03/16/23 12:22	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/16/23 12:22	1
Chromium	**0.53**	**XHD9 BQ**	2.0	0.14	ug/L			03/16/23 12:22	1
Cobalt	**0.24**	**XHD9 BQ**	1.0	0.14	ug/L			03/16/23 12:22	1
Copper	**2.6**	**BQ**	2.0	0.32	ug/L			03/16/23 12:22	1
Iron	**120**	**BQ**	20	3.7	ug/L			03/16/23 12:22	1
Manganese	**6.7**	**BQ**	1.0	0.41	ug/L			03/16/23 12:22	1
Nickel	**1.v**	**XHD9 BQ**	2.0	0.17	ug/L			03/16/23 12:22	1
Thallium	ND	BU	1.0	0.11	ug/L			03/16/23 12:22	1
Lead	**0.1v**	**XHD9 BQ**	1.0	0.12	ug/L			03/16/23 12:22	1
AntimonF	**0.40**	**XHD9 BQ**	2.0	0.36	ug/L			03/16/23 12:22	1
Zinc	ND	BU	20	2.8	ug/L			03/16/23 12:22	1
Selenium	ND	BU	2.0	0.52	ug/L			03/16/23 12:22	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: SM 2340B - 8otal J ardness (as CaCO3) bF calculation - 8otal Recoyerable

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Receiyed: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
J ardness as calcium carbonate	130		7.1	0.50	mg/L			03/21/23 17:15	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: SM 2340B - 8otal J ardness (as CaCO3) bF calculation - Dissolyed

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Receiyed: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
J ardness as calcium carbonate	100		7.1	0.50	mg/L			03/21/23 17:28	1

General ChemistrF

Client Sample ID: EPBBC_20230315
Lab Sample ID: 570-131264-1
Date Collected: 03/15/23 0v:30
Matrix: Water
Date Receiyed: 03/15/23 17:35

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
HEM (Oil & Grease) (1664A)	ND		1.0	0.51	mg/L		03/20/23 07:25	03/21/23 09:05	1
Cr (III) (EPA 21, .6 CR3)	**0.012**	**XHD9**	0.050	0.0030	mg/L			03/24/23 12:34	1
Ammonia (EPA 350.1)	**0.03,**	**XHD9**	0.075	0.032	mg/L		03/27/23 14:02	03/27/23 16:19	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/27/23 14:23	1
8urbiditF (SM 2130B)	**1, 0**		0.05	0.05	NTU			03/15/23 22:28	1
8otal Dissolyed Solids (SM 2540C)	**250**		10	8.7	mg/L			03/20/23 20:32	1
8otal Suspended Solids (SM 2540D)	**240**		10	8.3	mg/L			03/20/23 15:32	1
Biochemical OxFgen Demand (SM 5210B)	**1.2**	**XHD9**	2.0	1.0	mg/L		03/16/23 14:01	03/16/23 14:52	1
CarbonH8otal Organic (SM 5310D)	**12**		2.0	1.1	mg/L			03/31/23 01:23	4
MBAS (SM 5540C)	**0.054**	**XHD9**	0.20	0.050	mg/L		03/15/23 19:00	03/15/23 20:45	1

AnalFte	Result	f ualiTier	RL	RL	Qnit	D	Prepared	AnalFUed	Dil zac
SpeciTic Conductance (SM 2510B)	**330**		1.0	1.0	umhos/cm			03/22/23 20:12	1
SpeciTic Conductance (SM 2510B)	**330**		1.0	1.0	umhos/cm			03/22/23 20:12	1
Settleable Solids (SM 2540z)	**0.20**		0.10	0.10	mL/L			03/16/23 14:03	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

General ChemistrF - Dissolved

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	MDL	Qnit	D	Prepared	AnalFUed	Dil zac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			03/24/23 12:34	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: AS8M D4464 - Particle SiUe Distribution oTCatalFtic Material (Laser light scattering)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Receiyed: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

AnalFte	Result	f ualiTier	RL	RL	Qnit	D	Prepared	AnalFUed	Dil zac
ClaF (less than 0.003v1 mm)	**17.32**		0.01	0.01	%			03/20/23 19:50	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/20/23 19:50	1
zine Sand (0.125 to 0.25mm)	**0.6,**		0.01	0.01	%			03/20/23 19:50	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/20/23 19:50	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/20/23 19:50	1
Silt (0.003v1 to 0.0625mm)	**72.45**		0.01	0.01	%			03/20/23 19:50	1
8otal Silt and ClaF (0 to 0.0626mm)	**, v.77**		0.01	0.01	%			03/20/23 19:50	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/20/23 19:50	1
VerF zine Sand (0.0625 to 0.125 mm)	**v.56**		0.01	0.01	%			03/20/23 19:50	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

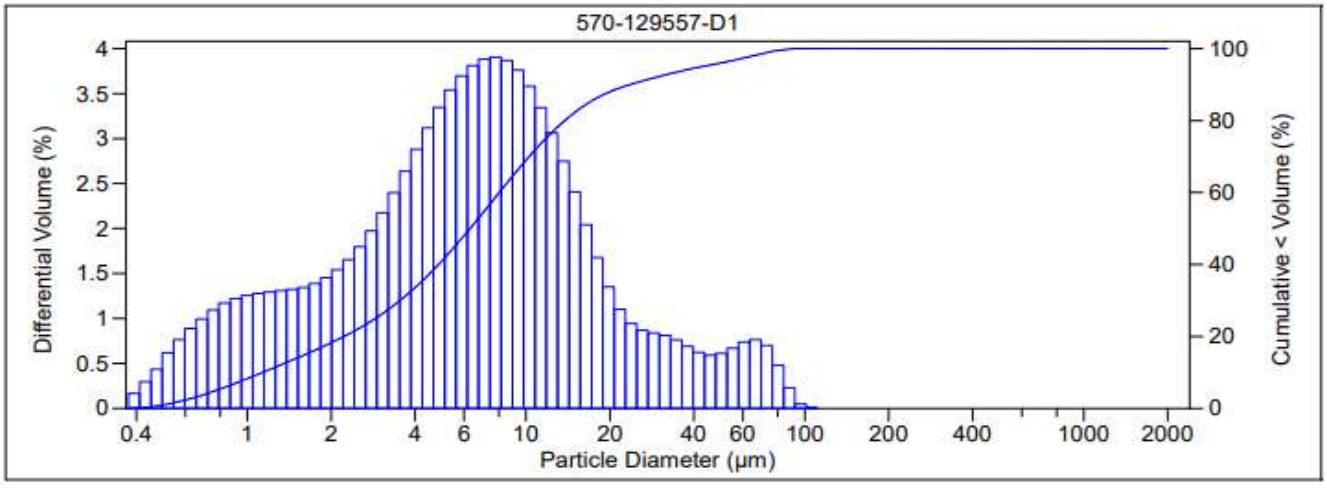
GSI Environmental, Inc.

Date Sampled:	03/01/23
Date Received:	03/02/23
Work Order No:	570-129557
Date Analyzed:	03/16/23
Method:	ASTM D4464M

Project: Sierra Recycling and Demolition

Sample ID	Depth ft	Description	Mean Grain Size mm
Pre-Aboveground Clara		Silt	0.011

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	2.16	67.21	30.62	97.84



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

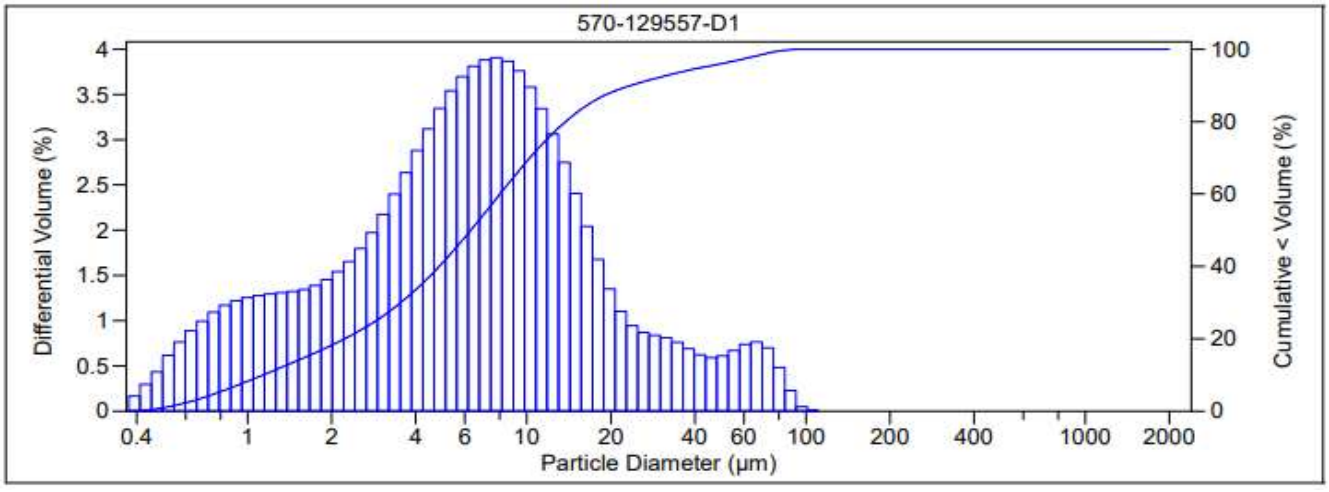
GSI Environmental, Inc.

Date Sampled:	03/01/23
Date Received:	03/02/23
Work Order No:	570-129557
Date Analyzed:	03/16/23
Method:	ASTM D4464M

Project: Sierra Recycling and Demolition

Sample ID	Depth ft	Description	Mean Grain Size mm
Pre-Aboveground Clara		Silt	0.011

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	2.35	64.81	32.84	97.65



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

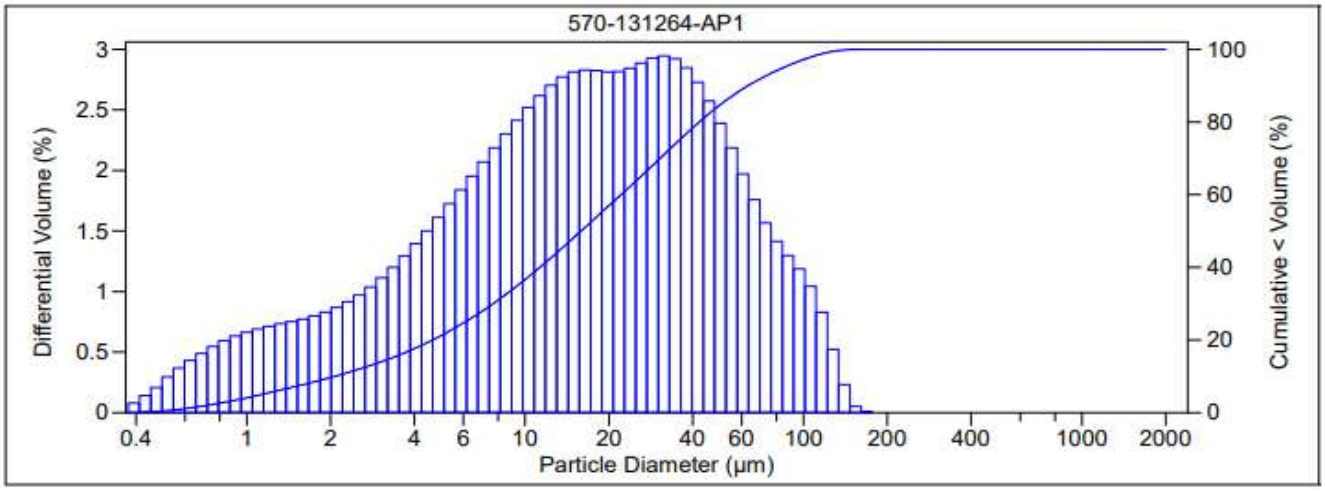
Haley & Aldrich, Inc.

Date Sampled:	03/15/23
Date Received:	03/15/23
Work Order No:	570-131262
Date Analyzed:	03/16/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP - NEW

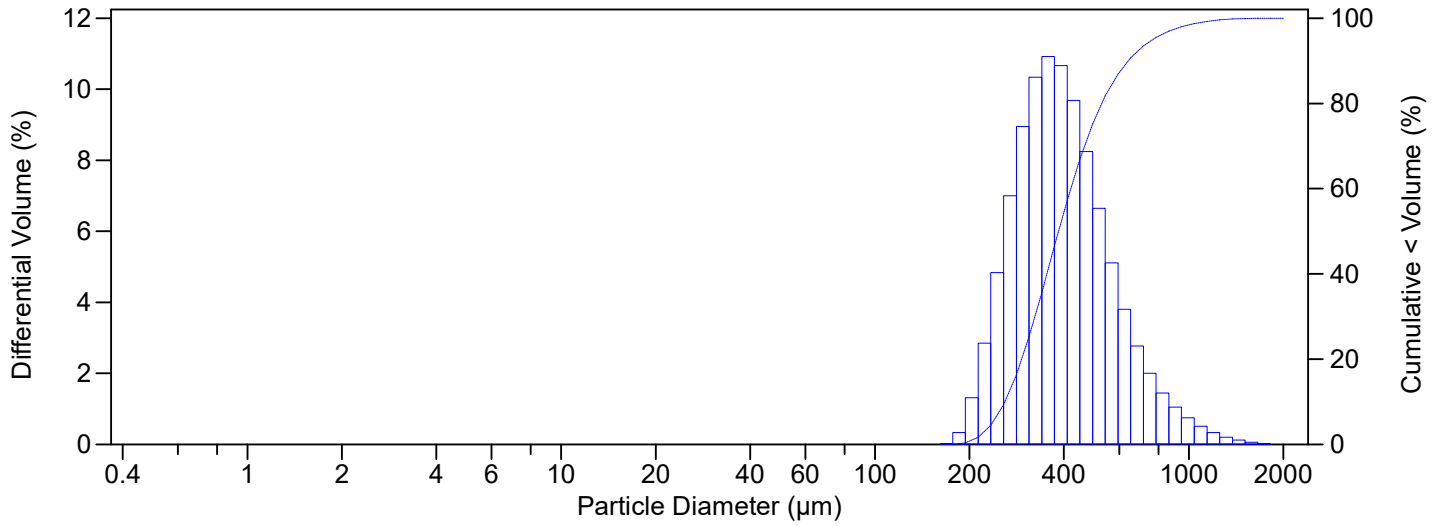
Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230315_20230314		Silt	0.026

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.68	9.56	72.45	17.32	89.77



V 3.0

File name:	C:\LS13320\STD SAND_16 Mar 2023_20.06.05.$ls		
	STD SAND_16 Mar 2023_20.06.05.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	21		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.73%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:04 16 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_16 Mar 2023_20.06.05.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	426.7 µm	S.D.:	176.3 µm
Median:	384.9 µm	Variance:	31078 µm^2
Mean/Median ratio:	1.109	Skewness:	1.955 Right skewed
Mode:	356.1 µm	Kurtosis:	5.896 Leptokurtic

d_{10}: 259.3 µm d_{50}: 384.9 µm d_{90}: 641.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.34	Median:	1.38	Deviation:	0.51
Skewness:	-0.14	Kurtosis:	1.03		

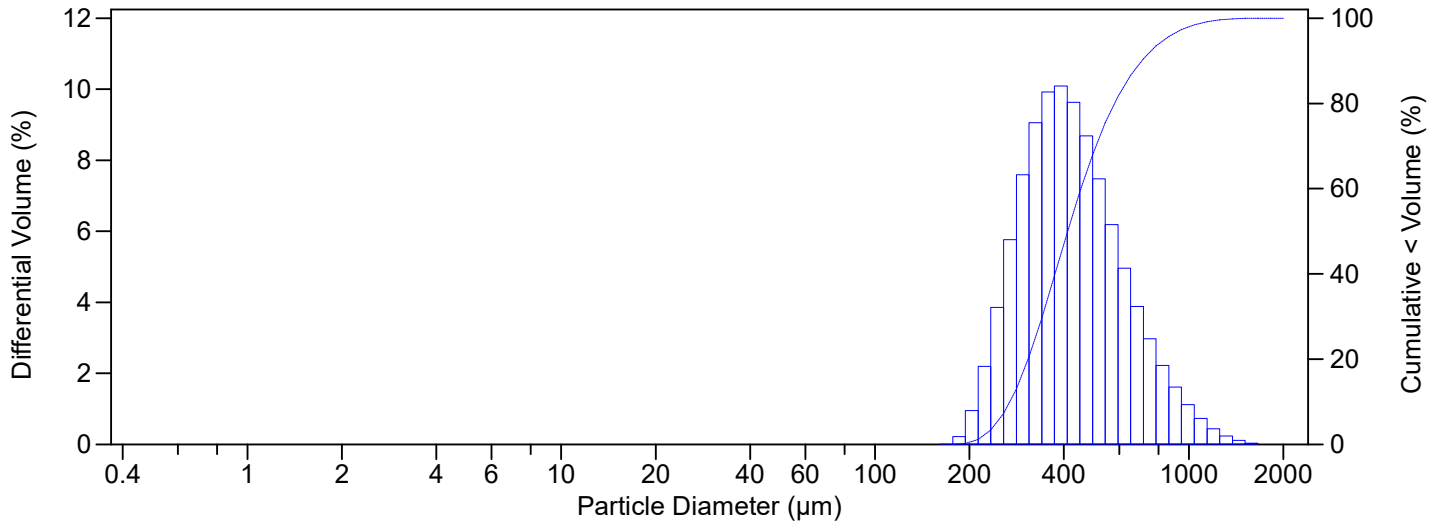
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
236.3 µm	280.8 µm	308.7 µm	353.2 µm	384.9 µm	492.8 µm	564.6 µm	769.3 µm

Particle Diameter µm	STD SAND _16 Mar 2023_20.06 .05.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.89
250	68.2
500	22.4
1000	1.58
2000	

STD SAND_16 Mar 2023_20.06.05.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.33
0.412	0	22.73	0	1255	0.21
0.452	0	24.95	0	1377	0.12
0.496	0	27.39	0	1512	0.058
0.545	0	30.07	0	1660	0.014
0.598	0	33.01	0	1822	0.00072
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.021		
3.206	0	176.9	0.34		
3.519	0	194.2	1.31		
3.863	0	213.2	2.85		
4.241	0	234.1	4.84		
4.656	0	256.9	7.00		
5.111	0	282.1	8.95		
5.611	0	309.6	10.3		
6.159	0	339.9	10.9		
6.761	0	373.1	10.7		
7.422	0	409.6	9.69		
8.148	0	449.7	8.25		
8.944	0	493.6	6.65		
9.819	0	541.9	5.11		
10.78	0	594.9	3.81		
11.83	0	653.0	2.77		
12.99	0	716.9	2.01		
14.26	0	786.9	1.45		
15.65	0	863.9	1.05		
17.18	0	948.3	0.75		
18.86	0	1041	0.51		

File name:	C:\LS13320\STD SAND_16 Mar 2023_20.51.40.$ls		
	STD SAND_16 Mar 2023_20.51.40.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	23		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.61%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:50 16 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_16 Mar 2023_20.51.40.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	457.5 µm	S.D.:	189.6 µm
Median:	411.0 µm	Variance:	35967 µm^2
Mean/Median ratio:	1.113	Skewness:	1.556 Right skewed
Mode:	391.0 µm	Kurtosis:	3.281 Leptokurtic

d_{10}: 268.9 µm d_{50}: 411.0 µm d_{90}: 708.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.25	Median:	1.28	Deviation:	0.54
Skewness:	-0.13	Kurtosis:	1.00		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
243.6 µm	292.9 µm	324.3 µm	374.7 µm	411.0 µm	538.9 µm	622.3 µm	839.6 µm

Particle Diameter µm	STD SAND _16 Mar 2023_20.51 .40.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.08
250	62.9
500	29.0
1000	2.06
2000	

STD SAND_16 Mar 2023_20.51.40.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.44
0.412	0	22.73	0	1255	0.24
0.452	0	24.95	0	1377	0.11
0.496	0	27.39	0	1512	0.032
0.545	0	30.07	0	1660	0.0024
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.013		
3.206	0	176.9	0.22		
3.519	0	194.2	0.95		
3.863	0	213.2	2.20		
4.241	0	234.1	3.86		
4.656	0	256.9	5.76		
5.111	0	282.1	7.59		
5.611	0	309.6	9.05		
6.159	0	339.9	9.92		
6.761	0	373.1	10.1		
7.422	0	409.6	9.63		
8.148	0	449.7	8.69		
8.944	0	493.6	7.48		
9.819	0	541.9	6.19		
10.78	0	594.9	4.97		
11.83	0	653.0	3.88		
12.99	0	716.9	2.97		
14.26	0	786.9	2.22		
15.65	0	863.9	1.62		
17.18	0	948.3	1.12		
18.86	0	1041	0.73		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-131264-1	EPBBC_20230315	86	94	88	97
570-131264-2	TB-20230315-1	89	94	89	98
LCS 570-311826/1003	Lab Control Sample	95	96	92	100
LCSD 570-311826/4	Lab Control Sample Dup	92	97	96	98
MB 570-311826/6	Method Blank	86	95	88	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		14DCBTN
Lab Sample ID	Client Sample ID	(67-133)
570-131264-1	EPBBC_20230315	93
LCS 570-312115/4	Lab Control Sample	89
LCSD 570-312115/5	Lab Control Sample Dup	99
MB 570-312115/7	Method Blank	97

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-131264-1	EPBBC_20230315	87	63	35	64	25	81
LCS 570-313228/2-A	Lab Control Sample	56	54	35	53	26	91
LCSD 570-313228/3-A	Lab Control Sample Dup	68	69	42	55	30	97
MB 570-313228/1-A	Method Blank	62	49	33	56	22	76

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(20-144)
570-131264-1	EPBBC_20230315	119

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BFB1 (20-144)
LCS 570-313573/37	Lab Control Sample	111
LCSD 570-313573/38	Lab Control Sample Dup	119
MB 570-313573/39	Method Blank	117

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	OTCSN1 (53-151)
570-131264-1	EPBBC_20230315	96
LCS 570-313523/2-A	Lab Control Sample	97
LCSD 570-313523/3-A	Lab Control Sample Dup	98
MB 570-313523/1-A	Method Blank	102

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-311826/6
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/15/23 15:10	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/15/23 15:10	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/15/23 15:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/15/23 15:10	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/15/23 15:10	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/15/23 15:10	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/15/23 15:10	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/15/23 15:10	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/15/23 15:10	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/15/23 15:10	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/15/23 15:10	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/15/23 15:10	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/15/23 15:10	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/15/23 15:10	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/15/23 15:10	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 15:10	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/15/23 15:10	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/15/23 15:10	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/15/23 15:10	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/15/23 15:10	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/15/23 15:10	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/15/23 15:10	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/15/23 15:10	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/15/23 15:10	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/15/23 15:10	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/15/23 15:10	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/15/23 15:10	1
2-Hexanone	ND		5.0	2.2	ug/L			03/15/23 15:10	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/15/23 15:10	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/15/23 15:10	1
Acetone	ND		20	16	ug/L			03/15/23 15:10	1
Acrolein	ND		5.0	4.6	ug/L			03/15/23 15:10	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/15/23 15:10	1
Benzene	ND		0.50	0.28	ug/L			03/15/23 15:10	1
Bromobenzene	ND		0.50	0.23	ug/L			03/15/23 15:10	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/15/23 15:10	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/15/23 15:10	1
Bromoform	ND		1.0	0.25	ug/L			03/15/23 15:10	1
Bromomethane	ND		0.50	0.22	ug/L			03/15/23 15:10	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/15/23 15:10	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/15/23 15:10	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/15/23 15:10	1
Chloroethane	ND		1.0	0.29	ug/L			03/15/23 15:10	1
Chloroform	ND		0.50	0.19	ug/L			03/15/23 15:10	1
Chloromethane	ND		0.50	0.30	ug/L			03/15/23 15:10	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/15/23 15:10	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/15/23 15:10	1
Cyclohexane	ND		2.0	0.79	ug/L			03/15/23 15:10	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-311826/6
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.15	ug/L			03/15/23 15:10	1
Dibromomethane	ND		0.50	0.19	ug/L			03/15/23 15:10	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/15/23 15:10	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/15/23 15:10	1
Ethanol	ND		100	65	ug/L			03/15/23 15:10	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/15/23 15:10	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/15/23 15:10	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/15/23 15:10	1
Isopropanol	ND		250	120	ug/L			03/15/23 15:10	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/15/23 15:10	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/15/23 15:10	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/15/23 15:10	1
Naphthalene	ND		1.0	0.33	ug/L			03/15/23 15:10	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/15/23 15:10	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/15/23 15:10	1
o-Xylene	ND		0.50	0.15	ug/L			03/15/23 15:10	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/15/23 15:10	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/15/23 15:10	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/15/23 15:10	1
Styrene	ND		0.50	0.19	ug/L			03/15/23 15:10	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/15/23 15:10	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/15/23 15:10	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/15/23 15:10	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/15/23 15:10	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/15/23 15:10	1
Toluene	ND		0.50	0.23	ug/L			03/15/23 15:10	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/15/23 15:10	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/15/23 15:10	1
Trichloroethene	ND		0.50	0.17	ug/L			03/15/23 15:10	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/15/23 15:10	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/15/23 15:10	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/15/23 15:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*96 - 146*		*603l/ 320 1/ 516*	*1*
4-Bromofluorobenzene (Surr)	*: /*		*96 - 146*		*603l/ 320 1/ 516*	*1*
Dibromofluoromethane (Surr)	*88*		*96 - 146*		*603l/ 320 1/ 516*	*1*
7oluene-d8 (Surr)	*: T*		*96 - 146*		*603l/ 320 1/ 516*	*1*

Lab Sample ID: LCS 570-311826/1003
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	9.99		ug/L		100	60 - 140
1,1,1-Trichloroethane	10.0	9.70		ug/L		97	70 - 130
1,1,2,2-Tetrachloroethane	10.0	10.2		ug/L		102	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	11.3		ug/L		113	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-311826/1003
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
1,1-Dichloroethane	10.0	9.86		ug/L		99	70 - 130
1,1-Dichloroethene	10.0	9.66		ug/L		97	50 - 150
1,1-Dichloropropene	10.0	10.2		ug/L		102	60 - 140
1,2,3-Trichlorobenzene	10.0	10.6		ug/L		106	60 - 140
1,2,3-Trichloropropane	10.0	9.57		ug/L		96	60 - 140
1,2,4-Trichlorobenzene	10.0	10.4		ug/L		104	60 - 140
1,2,4-Trimethylbenzene	10.0	9.85		ug/L		99	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	10.3		ug/L		103	60 - 140
1,2-Dibromoethane	10.0	9.97		ug/L		100	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	10.5		ug/L		105	60 - 140
1,2-Dichlorobenzene	10.0	10.7		ug/L		107	65 - 135
1,2-Dichloroethane	10.0	9.63		ug/L		96	70 - 130
1,2-Dichloropropane	10.0	10.0		ug/L		100	35 - 165
1,3,5-Trimethylbenzene	10.0	10.1		ug/L		101	60 - 140
1,3-Dichlorobenzene	10.0	10.6		ug/L		106	70 - 130
1,3-Dichloropropane	10.0	10.3		ug/L		103	60 - 140
1,4-Dichlorobenzene	10.0	10.5		ug/L		105	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	10.6		ug/L		106	60 - 140
2,2-Dichloropropane	10.0	10.4		ug/L		104	60 - 140
2-Butanone (MEK)	10.0	7.15		ug/L		72	60 - 140
2-Chloroethyl vinyl ether	10.0	7.71		ug/L		77	1 - 225
2-Chlorotoluene	10.0	10.0		ug/L		100	60 - 140
2-Hexanone	10.0	9.01		ug/L		90	60 - 140
4-Chlorotoluene	10.0	10.3		ug/L		103	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	10.1		ug/L		101	60 - 140
Acetone	10.0	ND		ug/L		114	60 - 140
Acrolein	20.0	17.8		ug/L		89	60 - 140
Acrylonitrile	10.0	10.3		ug/L		103	60 - 140
Benzene	10.0	10.5		ug/L		105	65 - 135
Bromobenzene	10.0	10.5		ug/L		105	60 - 140
Bromochloromethane	10.0	10.2		ug/L		102	60 - 140
Bromodichloromethane	10.0	9.80		ug/L		98	65 - 135
Bromoform	10.0	10.9		ug/L		109	70 - 130
Bromomethane	10.0	13.8		ug/L		138	15 - 185
Carbon disulfide	10.0	10.2		ug/L		102	60 - 140
Carbon tetrachloride	10.0	9.75		ug/L		98	70 - 130
Chlorobenzene	10.0	10.2		ug/L		102	65 - 135
Chloroethane	10.0	10.1		ug/L		101	40 - 160
Chloroform	10.0	9.42		ug/L		94	70 - 135
Chloromethane	10.0	10.0		ug/L		100	1 - 205
cis-1,2-Dichloroethene	10.0	10.0		ug/L		100	60 - 140
cis-1,3-Dichloropropene	10.0	10.3		ug/L		103	25 - 175
Cyclohexane	10.0	10.7		ug/L		107	60 - 140
Dibromochloromethane	10.0	10.1		ug/L		101	70 - 135
Dibromomethane	10.0	9.82		ug/L		98	60 - 140
Dichlorodifluoromethane	10.0	9.94		ug/L		99	60 - 140
Di-isopropyl ether (DIPE)	10.0	9.87		ug/L		99	60 - 140
Ethanol	100	118		ug/L		118	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-311826/1003
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	9.94		ug/L		99	60 - 140
Ethylbenzene	10.0	10.5		ug/L		105	60 - 140
Hexachloro-1,3-butadiene	10.0	10.4		ug/L		104	60 - 140
Isopropanol	50.0	ND		ug/L		113	60 - 140
Isopropylbenzene	10.0	10.7		ug/L		107	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	9.88		ug/L		99	60 - 140
Methylene Chloride	10.0	9.57		ug/L		96	60 - 140
Naphthalene	10.0	10.6		ug/L		106	60 - 140
n-Butylbenzene	10.0	10.6		ug/L		106	60 - 140
N-Propylbenzene	10.0	10.5		ug/L		105	60 - 140
o-Xylene	10.0	10.3		ug/L		103	60 - 140
m,p-Xylene	20.0	20.6		ug/L		103	60 - 140
p-Isopropyltoluene	10.0	10.5		ug/L		105	60 - 140
sec-Butylbenzene	10.0	10.8		ug/L		108	60 - 140
Styrene	10.0	10.3		ug/L		103	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	10.1		ug/L		101	60 - 140
tert-Butyl alcohol (TBA)	50.0	55.3		ug/L		111	60 - 140
tert-Butylbenzene	10.0	10.8		ug/L		108	60 - 140
Tetrachloroethene	10.0	11.1		ug/L		111	70 - 130
Tetrahydrofuran	10.0	10.1		ug/L		101	60 - 140
Toluene	10.0	10.2		ug/L		102	70 - 130
trans-1,2-Dichloroethene	10.0	9.92		ug/L		99	70 - 130
trans-1,3-Dichloropropene	10.0	10.2		ug/L		102	50 - 150
Trichloroethene	10.0	9.85		ug/L		98	65 - 135
Trichlorofluoromethane	10.0	9.78		ug/L		98	50 - 150
Vinyl acetate	10.0	9.50		ug/L		95	60 - 140
Vinyl chloride	10.0	10.3		ug/L		103	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*: /*		*96 - 146*
4-Bromofluorobenzene (Surr)	*: 9*		*96 - 146*
Dibromofluoromethane (Surr)	*: 2*		*96 - 146*
7oluene-d8 (Surr)	*166*		*96 - 146*

Lab Sample ID: LCSD 570-311826/4
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.2		ug/L		102	60 - 140	2	30
1,1,1-Trichloroethane	10.0	10.4		ug/L		104	70 - 130	7	36
1,1,2,2-Tetrachloroethane	10.0	10.7		ug/L		107	60 - 140	5	61
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.9		ug/L		119	60 - 140	5	30
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	70 - 130	3	45
1,1-Dichloroethane	10.0	10.5		ug/L		105	70 - 130	6	40
1,1-Dichloroethene	10.0	10.8		ug/L		108	50 - 150	11	32
1,1-Dichloropropene	10.0	11.0		ug/L		110	60 - 140	7	30
1,2,3-Trichlorobenzene	10.0	11.6		ug/L		116	60 - 140	9	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-311826/4
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichloropropane			10.0	10.1		ug/L		101	60 - 140	5	30
1,2,4-Trichlorobenzene			10.0	11.3		ug/L		113	60 - 140	8	30
1,2,4-Trimethylbenzene			10.0	10.6		ug/L		106	60 - 140	7	30
1,2-Dibromo-3-Chloropropane			10.0	10.1		ug/L		101	60 - 140	2	30
1,2-Dibromoethane			10.0	10.5		ug/L		105	60 - 140	5	30
1,2-Dichloro-1,1,2-trifluoroethane			10.0	11.2		ug/L		112	60 - 140	6	30
1,2-Dichlorobenzene			10.0	10.9		ug/L		109	65 - 135	2	57
1,2-Dichloroethane			10.0	9.18		ug/L		92	70 - 130	5	49
1,2-Dichloropropane			10.0	10.2		ug/L		102	35 - 165	2	55
1,3,5-Trimethylbenzene			10.0	10.6		ug/L		106	60 - 140	5	30
1,3-Dichlorobenzene			10.0	11.2		ug/L		112	70 - 130	5	43
1,3-Dichloropropane			10.0	10.6		ug/L		106	60 - 140	3	30
1,4-Dichlorobenzene			10.0	11.2		ug/L		112	65 - 135	7	57
2,2-Dichloro-1,1,1-trifluoroethane			10.0	10.8		ug/L		108	60 - 140	2	30
2,2-Dichloropropane			10.0	11.1		ug/L		111	60 - 140	7	30
2-Butanone (MEK)			10.0	8.22		ug/L		82	60 - 140	14	30
2-Chloroethyl vinyl ether			10.0	7.74		ug/L		77	1 - 225	0	71
2-Chlorotoluene			10.0	10.3		ug/L		103	60 - 140	3	30
2-Hexanone			10.0	9.90		ug/L		99	60 - 140	9	30
4-Chlorotoluene			10.0	10.9		ug/L		109	60 - 140	6	30
4-Methyl-2-pentanone (MIBK)			10.0	10.6		ug/L		106	60 - 140	5	30
Acetone			10.0	ND		ug/L		129	60 - 140	12	30
Acrolein			20.0	17.6		ug/L		88	60 - 140	1	60
Acrylonitrile			10.0	10.5		ug/L		105	60 - 140	2	60
Benzene			10.0	10.7		ug/L		107	65 - 135	1	61
Bromobenzene			10.0	10.9		ug/L		109	60 - 140	4	30
Bromochloromethane			10.0	11.0		ug/L		110	60 - 140	8	30
Bromodichloromethane			10.0	10.0		ug/L		100	65 - 135	2	56
Bromoform			10.0	10.9		ug/L		109	70 - 130	1	42
Bromomethane			10.0	12.8		ug/L		128	15 - 185	7	61
Carbon disulfide			10.0	11.0		ug/L		110	60 - 140	8	30
Carbon tetrachloride			10.0	10.5		ug/L		105	70 - 130	7	41
Chlorobenzene			10.0	10.7		ug/L		107	65 - 135	4	53
Chloroethane			10.0	11.4		ug/L		114	40 - 160	12	78
Chloroform			10.0	10.0		ug/L		100	70 - 135	6	30
Chloromethane			10.0	11.4		ug/L		114	1 - 205	13	60
cis-1,2-Dichloroethene			10.0	10.4		ug/L		104	60 - 140	4	30
cis-1,3-Dichloropropene			10.0	10.3		ug/L		103	25 - 175	0	58
Cyclohexane			10.0	11.6		ug/L		116	60 - 140	8	30
Dibromochloromethane			10.0	10.5		ug/L		105	70 - 135	4	50
Dibromomethane			10.0	9.84		ug/L		98	60 - 140	0	30
Dichlorodifluoromethane			10.0	11.2		ug/L		112	60 - 140	12	30
Di-isopropyl ether (DIPE)			10.0	10.3		ug/L		103	60 - 140	4	30
Ethanol			100	120		ug/L		120	60 - 140	1	30
Ethyl-t-butyl ether (ETBE)			10.0	10.4		ug/L		104	60 - 140	4	30
Ethylbenzene			10.0	10.9		ug/L		109	60 - 140	4	63
Hexachloro-1,3-butadiene			10.0	11.8		ug/L		118	60 - 140	13	30
Isopropanol			50.0	ND		ug/L		112	60 - 140	1	30
Isopropylbenzene			10.0	11.1		ug/L		111	60 - 140	4	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-311826/4
Matrix: Water
Analysis Batch: 311826

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	10.3		ug/L		103	60 - 140	5	30
Methylene Chloride	10.0	10.2		ug/L		102	60 - 140	6	28
Naphthalene	10.0	11.4		ug/L		114	60 - 140	8	30
n-Butylbenzene	10.0	11.6		ug/L		116	60 - 140	8	30
N-Propylbenzene	10.0	11.4		ug/L		114	60 - 140	8	30
o-Xylene	10.0	10.5		ug/L		105	60 - 140	1	30
m,p-Xylene	20.0	21.8		ug/L		109	60 - 140	6	30
p-Isopropyltoluene	10.0	11.3		ug/L		113	60 - 140	8	30
sec-Butylbenzene	10.0	11.6		ug/L		116	60 - 140	8	30
Styrene	10.0	10.8		ug/L		108	60 - 140	5	30
Tert-amyl-methyl ether (TAME)	10.0	10.1		ug/L		101	60 - 140	0	30
tert-Butyl alcohol (TBA)	50.0	58.8		ug/L		118	60 - 140	6	30
tert-Butylbenzene	10.0	11.3		ug/L		113	60 - 140	5	30
Tetrachloroethene	10.0	11.8		ug/L		118	70 - 130	6	39
Tetrahydrofuran	10.0	10.7		ug/L		107	60 - 140	6	30
Toluene	10.0	10.3		ug/L		103	70 - 130	1	41
trans-1,2-Dichloroethene	10.0	11.1		ug/L		111	70 - 130	11	45
trans-1,3-Dichloropropene	10.0	10.4		ug/L		104	50 - 150	2	86
Trichloroethene	10.0	10.4		ug/L		104	65 - 135	5	48
Trichlorofluoromethane	10.0	10.2		ug/L		102	50 - 150	5	84
Vinyl acetate	10.0	9.84		ug/L		98	60 - 140	4	30
Vinyl chloride	10.0	11.2		ug/L		112	5 - 195	8	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*: 2*		*96 - 146*
4-Bromofluorobenzene (Surr)	*: T*		*96 - 146*
Dibromofluoromethane (Surr)	*: 9*		*96 - 146*
7oluene-d8 (Surr)	*: 8*		*96 - 146*

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-312115/7
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/16/23 11:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*: T*		*9T - 100*		*603/193/20 115 T*	*1*

Lab Sample ID: LCS 570-312115/4
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	17.2		ug/L		86	75 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-312115/4
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dichlorobutane (Surr)	*8:*		*9T - 100*

Lab Sample ID: LCSD 570-312115/5
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	18.6		ug/L		93	75 - 120	7	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Dichlorobutane (Surr)	*: :*		*9T - 100*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-313228/1-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313228

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		03/21/23 06:13	03/23/23 12:27	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2-Chlorophenol	ND		0.20	0.096	ug/L		03/21/23 06:13	03/23/23 12:27	1
2-Nitrophenol	ND		5.0	3.5	ug/L		03/21/23 06:13	03/23/23 12:27	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		03/21/23 06:13	03/23/23 12:27	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Nitrophenol	ND		5.0	3.4	ug/L		03/21/23 06:13	03/23/23 12:27	1
Acenaphthene	ND		0.20	0.098	ug/L		03/21/23 06:13	03/23/23 12:27	1
Acenaphthylene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Anthracene	ND		0.20	0.084	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzidine	ND		5.0	2.7	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[b]fluoranthene	0.142	J,DX	0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-313228/1-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313228

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		03/21/23 06:13	03/23/23 12:27	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/21/23 06:13	03/23/23 12:27	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		03/21/23 06:13	03/23/23 12:27	1
Chrysene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		03/21/23 06:13	03/23/23 12:27	1
Diethyl phthalate	ND		2.0	0.18	ug/L		03/21/23 06:13	03/23/23 12:27	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		03/21/23 06:13	03/23/23 12:27	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		03/21/23 06:13	03/23/23 12:27	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		03/21/23 06:13	03/23/23 12:27	1
Fluoranthene	ND		0.20	0.10	ug/L		03/21/23 06:13	03/23/23 12:27	1
Fluorene	ND		0.20	0.095	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachloroethane	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Isophorone	ND		0.20	0.099	ug/L		03/21/23 06:13	03/23/23 12:27	1
Naphthalene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Nitrobenzene	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/21/23 06:13	03/23/23 12:27	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/21/23 06:13	03/23/23 12:27	1
Phenanthrene	ND		0.20	0.16	ug/L		03/21/23 06:13	03/23/23 12:27	1
Phenol	ND		1.0	0.52	ug/L		03/21/23 06:13	03/23/23 12:27	1
Pyrene	ND		0.20	0.086	ug/L		03/21/23 06:13	03/23/23 12:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,9-7ribromophenol	*92*		*28 - 12T*	*603213 20 695 10*	*603203 20 125 2T*	*1*
2-Fluorobiphenyl (Surr)	*4:*		*01 - 126*	*603213 20 695 10*	*603203 20 125 2T*	*1*
2-Fluorophenol	*00*		*1T - 126*	*603213 20 695 10*	*603203 20 125 2T*	*1*
Nitrobenzene-d/	*/ 9*		*2T - 126*	*603213 20 695 10*	*603203 20 125 2T*	*1*
Phenol-d9 (Surr)	*22*		*16 - 126*	*603213 20 695 10*	*603203 20 125 2T*	*1*
p-7erphenyl-d14 (Surr)	*T9*		*4/ - 126*	*603213 20 695 10*	*603203 20 125 2T*	*1*

Lab Sample ID: LCS 570-313228/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313228

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	7.92	LR	ug/L		40	57 - 130
1,2-Dichlorobenzene	20.0	8.74		ug/L		44	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	13.4		ug/L		67	60 - 115
1,3-Dichlorobenzene	20.0	8.24		ug/L		41	37 - 120
1,4-Dichlorobenzene	20.0	8.74		ug/L		44	39 - 120
2,4,6-Trichlorophenol	20.0	10.4		ug/L		52	52 - 129

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-313228/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 314108
Prep Batch: 313228

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dichlorophenol	20.0	10.3	LR	ug/L		52	53 - 122
2,4-Dimethylphenol	20.0	10.8		ug/L		54	42 - 120
2,4-Dinitrophenol	20.0	6.10		ug/L		31	1 - 173
2,4-Dinitrotoluene	20.0	14.2		ug/L		71	48 - 127
2,6-Dinitrotoluene	20.0	14.0		ug/L		70	68 - 137
2-Chloronaphthalene	20.0	10.3	LR	ug/L		52	65 - 120
2-Chlorophenol	20.0	10.4		ug/L		52	36 - 120
2-Nitrophenol	20.0	8.44	LR	ug/L		42	45 - 167
3,3'-Dichlorobenzidine	20.0	18.8		ug/L		94	8 - 213
4,6-Dinitro-2-methylphenol	20.0	8.77	LR	ug/L		44	53 - 130
4-Bromophenyl phenyl ether	20.0	13.3		ug/L		67	65 - 120
4-Chloro-3-methylphenol	20.0	11.9		ug/L		59	41 - 128
4-Chlorophenyl phenyl ether	20.0	11.8		ug/L		59	38 - 145
4-Nitrophenol	20.0	5.27		ug/L		26	13 - 129
Acenaphthene	20.0	11.2	LR	ug/L		56	60 - 132
Acenaphthylene	20.0	14.0		ug/L		70	54 - 126
Anthracene	20.0	16.5		ug/L		83	43 - 120
Benzidine	20.0	4.02	J,DX	ug/L		20	20 - 164
Benzo[a]anthracene	20.0	18.6		ug/L		93	42 - 133
Benzo[a]pyrene	20.0	18.7		ug/L		94	32 - 148
Benzo[b]fluoranthene	20.0	17.9		ug/L		89	42 - 140
Benzo[g,h,i]perylene	20.0	18.8		ug/L		94	1 - 195
Benzo[k]fluoranthene	20.0	19.4		ug/L		97	25 - 146
bis (2-chloroisopropyl) ether	20.0	11.4	LR	ug/L		57	63 - 139
Bis(2-chloroethoxy)methane	20.0	9.74		ug/L		49	49 - 165
Bis(2-chloroethyl)ether	20.0	11.1		ug/L		55	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	20.0		ug/L		100	29 - 137
Butyl benzyl phthalate	20.0	17.7		ug/L		89	1 - 140
Chrysene	20.0	17.5		ug/L		88	44 - 140
Dibenz(a,h)anthracene	20.0	17.6		ug/L		88	1 - 200
Diethyl phthalate	20.0	15.2		ug/L		76	1 - 120
Dimethyl phthalate	20.0	14.3		ug/L		71	1 - 120
Di-n-butyl phthalate	20.0	18.4		ug/L		92	8 - 120
Di-n-octyl phthalate	20.0	22.2		ug/L		111	19 - 132
Fluoranthene	20.0	17.0		ug/L		85	43 - 121
Fluorene	20.0	12.3	LR	ug/L		61	70 - 120
Hexachlorobenzene	20.0	14.1		ug/L		70	8 - 142
Hexachlorobutadiene	20.0	7.62		ug/L		38	38 - 120
Hexachlorocyclopentadiene	20.0	8.82		ug/L		44	43 - 145
Hexachloroethane	20.0	8.28	LR	ug/L		41	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	17.5		ug/L		88	1 - 151
Isophorone	20.0	11.1		ug/L		55	47 - 180
Naphthalene	20.0	8.44		ug/L		42	36 - 120
Nitrobenzene	20.0	9.94	LR	ug/L		50	54 - 158
N-Nitrosodimethylamine	20.0	7.21		ug/L		36	20 - 120
N-Nitrosodi-n-propylamine	20.0	12.2		ug/L		61	14 - 198
N-Nitrosodiphenylamine	20.0	16.2		ug/L		81	65 - 133
Pentachlorophenol	20.0	8.07		ug/L		40	38 - 152
Phenanthrene	20.0	14.7		ug/L		73	65 - 120

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-313228/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313228

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Phenol			20.0	4.60		ug/L		23	17 - 120		
Pyrene			20.0	17.5		ug/L		88	70 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,9-7ribromophenol	*/ 9*		*28 - 12T*
2-Fluorobiphenyl (Surr)	*/ 4*		*01 - 126*
2-Fluorophenol	*0/*		*1T - 126*
Nitrobenzene-d/	*/ 0*		*2T - 126*
Phenol-d9 (Surr)	*29*		*16 - 126*
p-7erphenyl-d14 (Surr)	*: 1*		*4/ - 126*

Lab Sample ID: LCSD 570-313228/3-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313228

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene			20.0	9.00	LR	ug/L		45	57 - 130	13	30
1,2-Dichlorobenzene			20.0	9.79		ug/L		49	40 - 120	11	20
1,2-Diphenylhydrazine(as Azobenzene)			20.0	15.2		ug/L		76	60 - 115	13	30
1,3-Dichlorobenzene			20.0	9.33		ug/L		47	37 - 120	12	20
1,4-Dichlorobenzene			20.0	9.95		ug/L		50	39 - 120	13	20
2,4,6-Trichlorophenol			20.0	12.9		ug/L		64	52 - 129	21	35
2,4-Dichlorophenol			20.0	12.0		ug/L		60	53 - 122	15	30
2,4-Dimethylphenol			20.0	12.5		ug/L		62	42 - 120	15	35
2,4-Dinitrophenol			20.0	7.47		ug/L		37	1 - 173	20	79
2,4-Dinitrotoluene			20.0	13.4		ug/L		67	48 - 127	6	25
2,6-Dinitrotoluene			20.0	14.4		ug/L		72	68 - 137	3	29
2-Chloronaphthalene			20.0	12.5	LR BA	ug/L		62	65 - 120	19	15
2-Chlorophenol			20.0	12.3		ug/L		62	36 - 120	17	37
2-Nitrophenol			20.0	7.86	LR	ug/L		39	45 - 167	7	33
3,3'-Dichlorobenzidine			20.0	20.1		ug/L		101	8 - 213	7	65
4,6-Dinitro-2-methylphenol			20.0	9.32	LR	ug/L		47	53 - 130	6	122
4-Bromophenyl phenyl ether			20.0	14.8		ug/L		74	65 - 120	11	26
4-Chloro-3-methylphenol			20.0	14.1		ug/L		71	41 - 128	17	44
4-Chlorophenyl phenyl ether			20.0	14.1		ug/L		70	38 - 145	18	36
4-Nitrophenol			20.0	5.61		ug/L		28	13 - 129	6	79
Acenaphthene			20.0	13.7		ug/L		68	60 - 132	20	29
Acenaphthylene			20.0	16.3		ug/L		81	54 - 126	15	45
Anthracene			20.0	17.8		ug/L		89	43 - 120	8	40
Benzidine			20.0	4.48	J,DX	ug/L		22	20 - 164	11	30
Benzo[a]anthracene			20.0	19.7		ug/L		99	42 - 133	6	32
Benzo[a]pyrene			20.0	20.1		ug/L		100	32 - 148	7	43
Benzo[b]fluoranthene			20.0	18.7		ug/L		93	42 - 140	4	43
Benzo[g,h,i]perylene			20.0	18.8		ug/L		94	1 - 195	0	61
Benzo[k]fluoranthene			20.0	20.3		ug/L		102	25 - 146	5	38
bis (2-chloroisopropyl) ether			20.0	12.4	LR	ug/L		62	63 - 139	8	46
Bis(2-chloroethoxy)methane			20.0	11.5		ug/L		58	49 - 165	17	32
Bis(2-chloroethyl)ether			20.0	12.5		ug/L		62	43 - 126	12	65

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-313228/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 314108
Prep Batch: 313228

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate	20.0	22.2		ug/L		111	29 - 137	10	50
Butyl benzyl phthalate	20.0	20.3		ug/L		101	1 - 140	13	36
Chrysene	20.0	18.3		ug/L		91	44 - 140	4	53
Dibenz(a,h)anthracene	20.0	18.1		ug/L		91	1 - 200	3	75
Diethyl phthalate	20.0	17.0		ug/L		85	1 - 120	11	60
Dimethyl phthalate	20.0	16.3		ug/L		82	1 - 120	13	110
Di-n-butyl phthalate	20.0	19.7		ug/L		99	8 - 120	7	28
Di-n-octyl phthalate	20.0	23.9		ug/L		119	19 - 132	7	42
Fluoranthene	20.0	17.7		ug/L		88	43 - 121	4	40
Fluorene	20.0	14.6		ug/L		73	70 - 120	17	23
Hexachlorobenzene	20.0	15.1		ug/L		76	8 - 142	7	33
Hexachlorobutadiene	20.0	8.69		ug/L		43	38 - 120	13	38
Hexachlorocyclopentadiene	20.0	10.6		ug/L		53	43 - 145	18	22
Hexachloroethane	20.0	8.90	LR	ug/L		44	55 - 120	7	32
Indeno[1,2,3-cd]pyrene	20.0	18.0		ug/L		90	1 - 151	3	60
Isophorone	20.0	12.8		ug/L		64	47 - 180	15	56
Naphthalene	20.0	9.65		ug/L		48	36 - 120	13	39
Nitrobenzene	20.0	10.8		ug/L		54	54 - 158	8	37
N-Nitrosodimethylamine	20.0	8.51		ug/L		43	20 - 120	17	21
N-Nitrosodi-n-propylamine	20.0	13.8		ug/L		69	14 - 198	12	52
N-Nitrosodiphenylamine	20.0	18.5		ug/L		92	65 - 133	13	20
Pentachlorophenol	20.0	9.04		ug/L		45	38 - 152	11	52
Phenanthrene	20.0	16.1		ug/L		81	65 - 120	9	24
Phenol	20.0	5.51		ug/L		28	17 - 120	18	39
Pyrene	20.0	17.7		ug/L		88	70 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,9-7ribromophenol	*98*		*28 - 12T*
2-Fluorobiphenyl (Surr)	*9:*		*01 - 126*
2-Fluorophenol	*42*		*1T - 126*
Nitrobenzene-d/	*//*		*2T - 126*
Phenol-d9 (Surr)	*06*		*16 - 126*
p-7erphenyl-d14 (Surr)	*: T*		*4/ - 126*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-313573/39
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 313573

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/22/23 00:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*11T*		*26 - 144*		*603223 20 665 T*	*1*

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCS 570-313573/37
Matrix: Water
Analysis Batch: 313573

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	2110		ug/L		110	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*111*		*26 - 144*

Lab Sample ID: LCSD 570-313573/38
Matrix: Water
Analysis Batch: 313573

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	2150		ug/L		112	71 - 120	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*11:*		*26 - 144*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-313523/1-A
Matrix: Water
Analysis Batch: 314947

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313523

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/21/23 17:31	03/27/23 12:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*162*		*/ 0 - 1/ 1*	*603213201T501*	*603T320 125:*	*1*

Lab Sample ID: LCS 570-313523/2-A
Matrix: Water
Analysis Batch: 314947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313523

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			4.00	3.83		mg/L		96	65 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*: T*		*/ 0 - 1/ 1*

Lab Sample ID: LCSD 570-313523/3-A
Matrix: Water
Analysis Batch: 314947

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313523

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			4.00	3.90		mg/L		97	65 - 129	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*: 8*		*/ 0 - 1/ 1*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-312029/5
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/16/23 02:05	1

Lab Sample ID: LCS 570-312029/6
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	49.2		ug/L		98	95 - 107

Lab Sample ID: LCSD 570-312029/7
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	49.7		ug/L		99	95 - 107	1	20

Lab Sample ID: 570-131264-1 MS
Matrix: Water
Analysis Batch: 312029

Client Sample ID: EPBBC_20230315
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	0.16	J,DX	50.1	54.3		ug/L		108	85 - 121

Lab Sample ID: 570-131264-1 MSD
Matrix: Water
Analysis Batch: 312029

Client Sample ID: EPBBC_20230315
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.16	J,DX	50.1	54.2		ug/L		108	85 - 121	0	25

Lab Sample ID: MB 570-312030/1-A
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/16/23 07:54	1

Lab Sample ID: LCS 570-312030/2-A
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	49.1		ug/L		98	95 - 107

Lab Sample ID: LCSD 570-312030/3-A
Matrix: Water
Analysis Batch: 312029

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	49.4		ug/L		99	95 - 107	1	20

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: 570-131264-1 MS
Matrix: Water
Analysis Batch: 312029

Client Sample ID: EPBBC_20230315
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	0.17	J,DX	50.1	50.1		ug/L		100	85 - 121

Lab Sample ID: 570-131264-1 MSD
Matrix: Water
Analysis Batch: 312029

Client Sample ID: EPBBC_20230315
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.17	J,DX	50.1	50.4		ug/L		100	85 - 121	0	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-311971/5
Matrix: Water
Analysis Batch: 311971

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/15/23 22:26	1
Fluoride	ND		0.10	0.046	mg/L			03/15/23 22:26	1
Sulfate	ND		1.0	0.24	mg/L			03/15/23 22:26	1

Lab Sample ID: LCS 570-311971/6
Matrix: Water
Analysis Batch: 311971

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	49.5		mg/L		99	90 - 110
Fluoride	2.50	2.52		mg/L		101	90 - 110
Sulfate	50.0	48.6		mg/L		97	90 - 110

Lab Sample ID: LCSD 570-311971/7
Matrix: Water
Analysis Batch: 311971

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	49.4		mg/L		99	90 - 110	0	15
Fluoride	2.50	2.51		mg/L		100	90 - 110	0	15
Sulfate	50.0	48.5		mg/L		97	90 - 110	0	15

Lab Sample ID: MB 570-311972/5
Matrix: Water
Analysis Batch: 311972

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/15/23 22:26	1
Nitrate as N	ND		0.10	0.020	mg/L			03/15/23 22:26	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 570-311972/6
Matrix: Water
Analysis Batch: 311972

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrite as N			2.50	2.44		mg/L		97	90 - 110		
Nitrate as N			5.00	4.99		mg/L		100	90 - 110		

Lab Sample ID: LCSD 570-311972/7
Matrix: Water
Analysis Batch: 311972

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.44		mg/L		98	90 - 110	0	15
Nitrate as N			5.00	4.97		mg/L		99	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-312272/7
Matrix: Water
Analysis Batch: 312272

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/16/23 18:35	1

Lab Sample ID: LCS 570-312272/8
Matrix: Water
Analysis Batch: 312272

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	25.1		ug/L		101	85 - 115		

Lab Sample ID: LCSD 570-312272/9
Matrix: Water
Analysis Batch: 312272

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.8		ug/L		99	85 - 115	1	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-312427/1-A
Matrix: Water
Analysis Batch: 312628

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 312427

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		03/17/23 07:46	03/17/23 12:55	1

Lab Sample ID: LCS 570-312427/2-A
Matrix: Water
Analysis Batch: 312628

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 312427

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	480	J,DX	ug/L		96	85 - 115		

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 570-312427/3-A
Matrix: Water
Analysis Batch: 312628

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 312427

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	474	J,DX	ug/L		95	85 - 115	1	20

Lab Sample ID: MB 570-312534/1-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			03/17/23 19:29	1

Lab Sample ID: LCS 570-312534/2-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	446	J,DX	ug/L		89	85 - 115		

Lab Sample ID: LCSD 570-312534/3-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	428	J,DX	ug/L		86	85 - 115	4	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-312429/1-A
Matrix: Water
Analysis Batch: 312598

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 312429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		03/17/23 07:59	03/17/23 11:36	1
Silver	ND		1.0	0.23	ug/L		03/17/23 07:59	03/17/23 11:36	1
Arsenic	ND		1.0	0.16	ug/L		03/17/23 07:59	03/17/23 11:36	1
Barium	ND		1.0	0.17	ug/L		03/17/23 07:59	03/17/23 11:36	1
Beryllium	ND		0.50	0.26	ug/L		03/17/23 07:59	03/17/23 11:36	1
Cadmium	ND		1.0	0.13	ug/L		03/17/23 07:59	03/17/23 11:36	1
Chromium	0.163	J,DX	2.0	0.14	ug/L		03/17/23 07:59	03/17/23 11:36	1
Cobalt	ND		1.0	0.14	ug/L		03/17/23 07:59	03/17/23 11:36	1
Copper	ND		2.0	0.32	ug/L		03/17/23 07:59	03/17/23 11:36	1
Iron	ND		20	3.7	ug/L		03/17/23 07:59	03/17/23 11:36	1
Manganese	ND		1.0	0.41	ug/L		03/17/23 07:59	03/17/23 11:36	1
Nickel	ND		2.0	0.17	ug/L		03/17/23 07:59	03/17/23 11:36	1
Lead	ND		1.0	0.12	ug/L		03/17/23 07:59	03/17/23 11:36	1
Antimony	ND		2.0	0.36	ug/L		03/17/23 07:59	03/17/23 11:36	1
Zinc	ND		20	2.8	ug/L		03/17/23 07:59	03/17/23 11:36	1
Selenium	ND		2.0	0.52	ug/L		03/17/23 07:59	03/17/23 11:36	1
Thallium	ND		1.0	0.11	ug/L		03/17/23 07:59	03/17/23 11:36	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-312429/2-A
Matrix: Water
Analysis Batch: 312598

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 312429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	76.5		ug/L		96	85 - 115
Silver	80.0	80.6		ug/L		101	85 - 115
Arsenic	80.0	80.5		ug/L		101	85 - 115
Barium	80.0	79.3		ug/L		99	85 - 115
Beryllium	80.0	79.1		ug/L		99	85 - 115
Cadmium	80.0	80.4		ug/L		101	85 - 115
Chromium	80.0	81.7		ug/L		102	85 - 115
Cobalt	80.0	81.0		ug/L		101	85 - 115
Copper	80.0	80.9		ug/L		101	85 - 115
Iron	800	827		ug/L		103	85 - 115
Manganese	80.0	81.0		ug/L		101	85 - 115
Nickel	80.0	82.3		ug/L		103	85 - 115
Lead	80.0	81.1		ug/L		101	85 - 115
Antimony	80.0	81.2		ug/L		102	85 - 115
Zinc	80.0	78.6		ug/L		98	85 - 115
Selenium	80.0	76.1		ug/L		95	85 - 115
Thallium	80.0	78.2		ug/L		98	85 - 115

Lab Sample ID: LCSD 570-312429/3-A
Matrix: Water
Analysis Batch: 312598

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 312429

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	76.1		ug/L		95	85 - 115	1	20
Silver	80.0	79.4		ug/L		99	85 - 115	2	20
Arsenic	80.0	78.7		ug/L		98	85 - 115	2	20
Barium	80.0	78.7		ug/L		98	85 - 115	1	20
Beryllium	80.0	78.8		ug/L		99	85 - 115	0	20
Cadmium	80.0	79.1		ug/L		99	85 - 115	2	20
Chromium	80.0	80.0		ug/L		100	85 - 115	2	20
Cobalt	80.0	79.5		ug/L		99	85 - 115	2	20
Copper	80.0	80.7		ug/L		101	85 - 115	0	20
Iron	800	824		ug/L		103	85 - 115	0	20
Manganese	80.0	80.5		ug/L		101	85 - 115	1	20
Nickel	80.0	80.5		ug/L		101	85 - 115	2	20
Lead	80.0	79.3		ug/L		99	85 - 115	2	20
Antimony	80.0	81.8		ug/L		102	85 - 115	1	20
Zinc	80.0	77.2		ug/L		97	85 - 115	2	20
Selenium	80.0	76.6		ug/L		96	85 - 115	1	20
Thallium	80.0	76.3		ug/L		95	85 - 115	2	20

Lab Sample ID: MB 570-312120/1-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			03/16/23 11:52	1
Silver	ND		1.0	0.23	ug/L			03/16/23 11:52	1
Arsenic	ND		1.0	0.16	ug/L			03/16/23 11:52	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-312120/1-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		1.0	0.17	ug/L			03/16/23 11:52	1
Beryllium	ND		0.50	0.26	ug/L			03/16/23 11:52	1
Cadmium	ND		1.0	0.13	ug/L			03/16/23 11:52	1
Chromium	ND		2.0	0.14	ug/L			03/16/23 11:52	1
Cobalt	ND		1.0	0.14	ug/L			03/16/23 11:52	1
Copper	ND		2.0	0.32	ug/L			03/16/23 11:52	1
Iron	ND		20	3.7	ug/L			03/16/23 11:52	1
Manganese	ND		1.0	0.41	ug/L			03/16/23 11:52	1
Nickel	ND		2.0	0.17	ug/L			03/16/23 11:52	1
Lead	ND		1.0	0.12	ug/L			03/16/23 11:52	1
Antimony	ND		2.0	0.36	ug/L			03/16/23 11:52	1
Zinc	ND		20	2.8	ug/L			03/16/23 11:52	1
Selenium	ND		2.0	0.52	ug/L			03/16/23 11:52	1
Thallium	ND		1.0	0.11	ug/L			03/16/23 11:52	1

Lab Sample ID: LCS 570-312120/2-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum			80.0	77.6		ug/L		97	85 - 115		
Silver			80.0	77.7		ug/L		97	85 - 115		
Arsenic			80.0	77.3		ug/L		97	85 - 115		
Barium			80.0	78.3		ug/L		98	85 - 115		
Beryllium			80.0	78.9		ug/L		99	85 - 115		
Cadmium			80.0	77.6		ug/L		97	85 - 115		
Chromium			80.0	78.2		ug/L		98	85 - 115		
Cobalt			80.0	77.3		ug/L		97	85 - 115		
Copper			80.0	77.9		ug/L		97	85 - 115		
Iron			800	797		ug/L		100	85 - 115		
Manganese			80.0	79.1		ug/L		99	85 - 115		
Nickel			80.0	77.8		ug/L		97	85 - 115		
Lead			80.0	80.3		ug/L		100	85 - 115		
Antimony			80.0	77.4		ug/L		97	85 - 115		
Zinc			80.0	75.1		ug/L		94	85 - 115		
Selenium			80.0	75.4		ug/L		94	85 - 115		
Thallium			80.0	77.2		ug/L		96	85 - 115		

Lab Sample ID: LCSD 570-312120/3-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum			80.0	80.2		ug/L		100	85 - 115	3	20
Silver			80.0	79.8		ug/L		100	85 - 115	3	20
Arsenic			80.0	79.6		ug/L		100	85 - 115	3	20
Barium			80.0	79.5		ug/L		99	85 - 115	2	20
Beryllium			80.0	82.0		ug/L		102	85 - 115	4	20
Cadmium			80.0	79.6		ug/L		99	85 - 115	3	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-312120/3-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium			80.0	79.6		ug/L		99	85 - 115	2	20
Cobalt			80.0	78.6		ug/L		98	85 - 115	2	20
Copper			80.0	79.2		ug/L		99	85 - 115	2	20
Iron			800	802		ug/L		100	85 - 115	1	20
Manganese			80.0	80.3		ug/L		100	85 - 115	2	20
Nickel			80.0	79.1		ug/L		99	85 - 115	2	20
Lead			80.0	82.0		ug/L		102	85 - 115	2	20
Antimony			80.0	79.8		ug/L		100	85 - 115	3	20
Zinc			80.0	76.9		ug/L		96	85 - 115	2	20
Selenium			80.0	79.0		ug/L		99	85 - 115	5	20
Thallium			80.0	79.5		ug/L		99	85 - 115	3	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-312913/1-A
Matrix: Water
Analysis Batch: 313301

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312913

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/20/23 07:25	03/21/23 09:05	1

Lab Sample ID: LCS 570-312913/2-A
Matrix: Water
Analysis Batch: 313301

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312913

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HEM (Oil & Grease)			40.0	37.0		mg/L		92	78 - 114		

Lab Sample ID: LCSD 570-312913/3-A
Matrix: Water
Analysis Batch: 313301

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 312913

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	39.0		mg/L		98	78 - 114	5	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-315112/5-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315112

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/27/23 14:02	03/27/23 15:47	1

Lab Sample ID: LCS 570-315112/6-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315112

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.494		mg/L		99	90 - 110		

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCSD 570-315112/7-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315112

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.500		mg/L		100	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309190/11
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/27/23 12:56	1

Lab Sample ID: LCS 570-309190/12
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			250	259		ug/L		104	90 - 110		

Lab Sample ID: LCSD 570-309190/13
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	271		ug/L		109	90 - 110	5	20

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-312018/1
Matrix: Water
Analysis Batch: 312018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			1000	1000		NTU		100.6	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-312018/2
Matrix: Water
Analysis Batch: 312018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			10.0	10		NTU		99.6	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-312018/3
Matrix: Water
Analysis Batch: 312018

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			0.0200	ND		NTU		100.0	0.0 - 200.0		

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-313959/7
Matrix: Water
Analysis Batch: 313959

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/22/23 19:27	1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-313176/1
Matrix: Water
Analysis Batch: 313176

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/20/23 20:32	1

Lab Sample ID: LCS 570-313176/2
Matrix: Water
Analysis Batch: 313176

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1040		mg/L		104	84 - 108

Lab Sample ID: LCSD 570-313176/3
Matrix: Water
Analysis Batch: 313176

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1000		mg/L		100	84 - 108	4	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-313093/1
Matrix: Water
Analysis Batch: 313093

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/20/23 15:32	1

Lab Sample ID: LCS 570-313093/2
Matrix: Water
Analysis Batch: 313093

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.0		mg/L		97	77 - 116

Lab Sample ID: LCSD 570-313093/3
Matrix: Water
Analysis Batch: 313093

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	95.0		mg/L		95	77 - 116	2	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCS 570-312138/2-A
Matrix: Water
Analysis Batch: 313425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312138

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	176		mg/L		89	84.6 - 115.4

Lab Sample ID: USB 570-313425/2
Matrix: Water
Analysis Batch: 313425

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			03/16/23 10:27	1

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-316478/33
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			03/31/23 09:04	1

Lab Sample ID: MB 570-316478/4
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			03/30/23 22:04	1

Lab Sample ID: LCS 570-316478/34
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon, Total Organic	5.03	4.95		mg/L		98	85 - 115

Lab Sample ID: LCS 570-316478/5
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon, Total Organic	5.03	4.91		mg/L		98	85 - 115

Lab Sample ID: LCSD 570-316478/35
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic	5.03	4.94		mg/L		98	85 - 115	0	20

Method: SM 5310D - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 570-316478/6
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic			5.03	4.88		mg/L		97	85 - 115	1	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-312166/5-A
Matrix: Water
Analysis Batch: 312164

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312166

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/15/23 15:30	03/15/23 17:33	1

Lab Sample ID: LCS 570-312166/6-A
Matrix: Water
Analysis Batch: 312164

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312166

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.439		mg/L		88	83 - 122		

Lab Sample ID: LCSD 570-312166/7-A
Matrix: Water
Analysis Batch: 312164

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 312166

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.456		mg/L		91	83 - 122	4	10

GC/MS VOA

Analysis Batch: 311826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	624.1	
570-131264-2	TB-20230315-1	Total/NA	Water	624.1	
MB 570-311826/6	Method Blank	Total/NA	Water	624.1	
LCS 570-311826/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-311826/4	Lab Control Sample Dup	Total/NA	Water	624.1	

Analysis Batch: 312115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	8260B SIM	
MB 570-312115/7	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-312115/4	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-312115/5	Lab Control Sample Dup	Total/NA	Water	8260B SIM	

GC/MS Semi VOA

Prep Batch: 313228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	625	
MB 570-313228/1-A	Method Blank	Total/NA	Water	625	
LCS 570-313228/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-313228/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 314108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	625.1 SIM	313228
MB 570-313228/1-A	Method Blank	Total/NA	Water	625.1 SIM	313228
LCS 570-313228/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	313228
LCSD 570-313228/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	313228

GC VOA

Analysis Batch: 313573

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	8015B	
MB 570-313573/39	Method Blank	Total/NA	Water	8015B	
LCS 570-313573/37	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-313573/38	Lab Control Sample Dup	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 313523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	3510C	
MB 570-313523/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-313523/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-313523/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 314947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-313523/1-A	Method Blank	Total/NA	Water	8015B	313523
LCS 570-313523/2-A	Lab Control Sample	Total/NA	Water	8015B	313523
LCSD 570-313523/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	313523

GC Semi VOA

Analysis Batch: 315118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	8015B	313523

HPLC/IC

Analysis Batch: 311971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	300.0	
MB 570-311971/5	Method Blank	Total/NA	Water	300.0	
LCS 570-311971/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-311971/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 311972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	300.0	
MB 570-311972/5	Method Blank	Total/NA	Water	300.0	
LCS 570-311972/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-311972/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 312029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	218.6	312030
570-131264-1	EPBBC_20230315	Total/NA	Water	218.6	
MB 570-312029/5	Method Blank	Total/NA	Water	218.6	
MB 570-312030/1-A	Method Blank	Dissolved	Water	218.6	312030
LCS 570-312029/6	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-312030/2-A	Lab Control Sample	Dissolved	Water	218.6	312030
LCSD 570-312029/7	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-312030/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	312030
570-131264-1 MS	EPBBC_20230315	Dissolved	Water	218.6	312030
570-131264-1 MS	EPBBC_20230315	Total/NA	Water	218.6	
570-131264-1 MSD	EPBBC_20230315	Dissolved	Water	218.6	312030
570-131264-1 MSD	EPBBC_20230315	Total/NA	Water	218.6	

Filtration Batch: 312030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	Filtration	
MB 570-312030/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-312030/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312030/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-131264-1 MS	EPBBC_20230315	Dissolved	Water	Filtration	
570-131264-1 MSD	EPBBC_20230315	Dissolved	Water	Filtration	

Analysis Batch: 312272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	314.0	
MB 570-312272/7	Method Blank	Total/NA	Water	314.0	
LCS 570-312272/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-312272/9	Lab Control Sample Dup	Total/NA	Water	314.0	

HPLC/IC

Analysis Batch: 313055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	NO2NO3 Calc	

Metals

Analysis Batch: 311940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total Recoverable	Water	SM 2340B	

Filtration Batch: 312120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	Filtration	
MB 570-312120/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-312120/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312120/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 312206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	200.8	312120
MB 570-312120/1-A	Method Blank	Dissolved	Water	200.8	312120
LCS 570-312120/2-A	Lab Control Sample	Dissolved	Water	200.8	312120
LCSD 570-312120/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	312120

Analysis Batch: 312313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	SM 2340B	

Prep Batch: 312427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total Recoverable	Water	200.7	
MB 570-312427/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-312427/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-312427/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	

Prep Batch: 312429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total Recoverable	Water	200.8	
MB 570-312429/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-312429/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-312429/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Filtration Batch: 312534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	Filtration	
MB 570-312534/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-312534/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312534/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 312598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total Recoverable	Water	200.8	312429
570-131264-1	EPBBC_20230315	Total Recoverable	Water	200.8	312429

Metals (Continued)

Analysis Batch: 312598 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-312429/1-A	Method Blank	Total Recoverable	Water	200.8	312429
LCS 570-312429/2-A	Lab Control Sample	Total Recoverable	Water	200.8	312429
LCSD 570-312429/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	312429

Analysis Batch: 312628

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total Recoverable	Water	200.7 Rev 4.4	312427
MB 570-312427/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	312427
LCS 570-312427/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	312427
LCSD 570-312427/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	312427

Analysis Batch: 312749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	200.7 Rev 4.4	312534
MB 570-312534/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	312534
LCS 570-312534/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	312534
LCSD 570-312534/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	312534

General Chemistry

Analysis Batch: 309190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	Kelada 01	
MB 570-309190/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309190/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309190/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	

Analysis Batch: 312018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	SM 2130B	
LCSSRM 570-312018/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-312018/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-312018/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Prep Batch: 312138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	BOD Prep	
LCS 570-312138/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	

Analysis Batch: 312164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	SM 5540C	312166
MB 570-312166/5-A	Method Blank	Total/NA	Water	SM 5540C	312166
LCS 570-312166/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	312166
LCSD 570-312166/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	312166

Prep Batch: 312166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	SM 5540C	
MB 570-312166/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-312166/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	

General Chemistry (Continued)

Prep Batch: 312166 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-312166/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Analysis Batch: 312256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	SM 2540F	

Prep Batch: 312913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	1664A	
MB 570-312913/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-312913/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-312913/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 313093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	SM 2540D	
MB 570-313093/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-313093/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-313093/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 313176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	SM 2540C	
MB 570-313176/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-313176/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-313176/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 313301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	1664A	312913
MB 570-312913/1-A	Method Blank	Total/NA	Water	1664A	312913
LCS 570-312913/2-A	Lab Control Sample	Total/NA	Water	1664A	312913
LCSD 570-312913/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	312913

Analysis Batch: 313425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	SM 5210B	312138
USB 570-313425/2	Method Blank	Total/NA	Water	SM 5210B	
LCS 570-312138/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	312138

Analysis Batch: 313959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	SM 2510B	
MB 570-313959/7	Method Blank	Total/NA	Water	SM 2510B	

Analysis Batch: 314522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	218.6 CR3	
570-131264-1	EPBBC_20230315	Total/NA	Water	218.6 CR3	

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

General Chemistry

Prep Batch: 315112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	Distill/Ammonia	
MB 570-315112/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-315112/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-315112/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 315123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	350.1	315112
MB 570-315112/5-A	Method Blank	Total/NA	Water	350.1	315112
LCS 570-315112/6-A	Lab Control Sample	Total/NA	Water	350.1	315112
LCSD 570-315112/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	315112

Analysis Batch: 316478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	SM 5310D	
MB 570-316478/33	Method Blank	Total/NA	Water	SM 5310D	
MB 570-316478/4	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-316478/34	Lab Control Sample	Total/NA	Water	SM 5310D	
LCS 570-316478/5	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-316478/35	Lab Control Sample Dup	Total/NA	Water	SM 5310D	
LCSD 570-316478/6	Lab Control Sample Dup	Total/NA	Water	SM 5310D	

Geotechnical

Analysis Batch: 313070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	D4464	
LCS 570-313070/21	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-313070/23	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Client Sample ID: EPBBC_20230315

Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	311826	03/15/23 21:30	N1A	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	312115	03/16/23 18:58	G6NI	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			1049.4 mL	2 mL	313228	03/22/23 05:11	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	314108	03/23/23 21:12	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	313573	03/22/23 05:08	A9VE	EET CAL 4
	Instrument ID: GC73									
Total/NA	Prep	3510C			256.5 mL	2.5 mL	313523	03/21/23 17:31	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	315118	03/27/23 21:47	N1A	EET CAL 4
	Instrument ID: GC47									
Dissolved	Filtration	Filtration			100 mL	100 mL	312030	03/16/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	312029	03/16/23 08:27	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	218.6		1	4 mL	4 mL	312029	03/16/23 06:27	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	300.0		5	4 mL	4 mL	311971	03/16/23 01:52	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0		5	4 mL	4 mL	311972	03/16/23 01:52	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	314.0		1	4 mL	4 mL	312272	03/17/23 01:12	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			313055	03/20/23 12:49	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Dissolved	Filtration	Filtration			50 mL	50 mL	312534	03/17/23 10:56	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			312749	03/17/23 19:48	P1R	EET CAL 4
	Instrument ID: ICP10									
Total Recoverable	Prep	200.7			50 mL	50 mL	312427	03/17/23 07:46	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			312628	03/17/23 14:57	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	312120	03/16/23 10:02	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			312206	03/16/23 12:22	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	312429	03/17/23 07:59	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			312598	03/17/23 11:51	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	312429	03/17/23 07:59	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		20			312598	03/17/23 11:55	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Analysis	SM 2340B		1			312313	03/21/23 17:28	P1R	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Analysis	SM 2340B		1			311940	03/21/23 17:15	P1R	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPBBC_20230315
Lab Sample ID: 570-131264-1
Date Collected: 03/15/23 09:30
Matrix: Water
Date Received: 03/15/23 17:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			1001 mL	1000 mL	312913	03/20/23 07:25	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			313301	03/21/23 09:05	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Dissolved	Analysis	218.6 CR3		1			314522	03/24/23 12:34	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	218.6 CR3		1			314522	03/24/23 12:34	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	315112	03/27/23 14:02	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	315123	03/27/23 16:19	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309190	03/27/23 14:23	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			312018	03/15/23 22:28	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			313959	03/22/23 20:12	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	313176	03/20/23 20:32	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	100 mL	1000 mL	313093	03/20/23 15:32	TXA8	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	312256	03/16/23 14:03	GG0B	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	BOD Prep					312138	03/16/23 14:01	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	313425	03/16/23 14:52	U7UR	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	SM 5310D		4	40 mL	40 mL	316478	03/31/23 01:23	UAPD	EET CAL 4
	Instrument ID: TOC12									
Total/NA	Prep	SM 5540C			100 mL	100 mL	312166	03/15/23 19:00	ZVB7	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	312164	03/15/23 20:45	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	D4464		1			313070	03/20/23 19:50	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230315-1
Lab Sample ID: 570-131264-2
Date Collected: 03/15/23 09:30
Matrix: Water
Date Received: 03/15/23 17:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	311826	03/15/23 21:08	N1A	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-12168P-1

j ro/ectSBite: goeinF BBLRIBMA and gs j - f Np

Laboratory: Eurofins Calscience

All accreditationzSertiZcationz held by thiz laboratory are lizted. f ot all accreditationzSertiZcationz are a33licable to thiz re3ort.

Authority	Program	Identification Number	Expiration Date
Ariuona	Btate	A90Q20	11-18-62
CaliZornia	Roz AnFelez Covnty Banitation Diztrictz	1010O	07-21-62
CaliZornia	BCAEs D RAj	17RA0O1O	11-20-62
CaliZornia	Btate	20Q6	07-21-6P
f e4ada	Btate	CA00111	0Q-01-62
UreFon	f NRAj	P175	06-06-6P
mBDA	mB Lederal j roFraWz	j 220-66-0005O	05-6P-62
p azhinFton	Btate	CO18-1Q	10-11-62

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

1664A = EPA-821-98-002
ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131264-1	EPBBC_20230315	Water	03/15/23 09:30	03/15/23 17:35
570-131264-2	TB-20230315-1	Water	03/15/23 09:30	03/15/23 17:35

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210719.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131264-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131264-3)	3/15/23	09:30 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1604		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR269

Loc: 570
131264

570-131264 Chain of Custody

Calscience

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Myra Sondrini	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230315	3/15/23	0930	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230315-1	3/15/23	0930	TB	WM	2	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Readings
Meter Serial #: 2D3P56VK
Time of Readings: 0930
DO (mg/L): 10.19
pH: 7.51
Temp (°C): 20.1
TRC (mg/L): 0.00
Checked by:
Date/Time: 3-15-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3-15-23 1335	Received by: EC	Date/Time: 3/15/23 1335
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

3.1/3.1 2.8/2.8 2.3/2.3 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/4/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMALIK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230315	3/15/23	0930	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	0930	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Archive for ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.:

Relinquished by:	Company: EA	Date/Time: 3-15-23 1335	Receiv	Date/Time: 3/15/23 1335
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Receiv EC	Date/Time:
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

3.1/5.1 2.8/2.8 2.3/2.3 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131264-1

Login Number: 131264
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131264-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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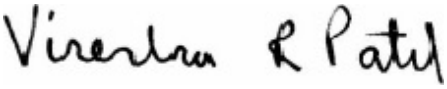
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131264-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131264-2

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.8º C and 3.1º C.

Receipt Exceptions

One of the containers for the following samples were received broken: EPBBC_20230315 (570-131264-1), TB-20230315-1 (570-131264-2) and TB-20230315-2 (570-131264-3). The 1 liter unpreserved amberglass was received broken with no remaining volume.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-2

Client Sample ID: EPBBC_20230315

Lab Sample ID: 570-131264-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.019		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0088		0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBBC_20230315 — **Lab Sample ID: 570-131264-1**

Date Collected: 03/15/23 09:30 — **Matrix: Water**

Date Received: 03/15/23 17:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.019		0.00050	0.00079	ng/L			03/27/23 17:57	1

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0088		0.00050	0.00079	ng/L			03/27/23 11:02	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-421566/15
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/27/23 13:43	1

Lab Sample ID: MB 580-421566/16
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/27/23 13:48	1

Lab Sample ID: MB 580-421566/17
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/27/23 13:52	1

Lab Sample ID: LCS 580-421566/23
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00465		ug/L		93	77 - 123		

Lab Sample ID: LCSD 580-421566/24
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00465		ug/L		93	77 - 123	0	24

Lab Sample ID: MB 580-420711/1-A
Matrix: Water
Analysis Batch: 421301

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/23/23 12:15	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-2

Metals

Filtration Batch: 420711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	Filtration	
MB 580-420711/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 421301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 580-420711/1-A	Method Blank	Dissolved	Water	1631E	420711

Analysis Batch: 421566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	1631E	420711
570-131264-1	EPBBC_20230315	Total/NA	Water	1631E	
MB 580-421566/15	Method Blank	Total/NA	Water	1631E	
MB 580-421566/16	Method Blank	Total/NA	Water	1631E	
MB 580-421566/17	Method Blank	Total/NA	Water	1631E	
LCS 580-421566/23	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-421566/24	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-2

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	420711	03/17/23 13:05	DRM	EET SEA
Dissolved	Analysis	1631E		1			421566	03/27/23 18:02	COW	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			421566	03/27/23 17:57	COW	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Method	Method Description	Protocol	Laboratory
1921u	E nch vo & Ro (Rn Vni) l Td LBN	uj d	uumBud
Le H y H ot	Byp = in Le H y H ot	6 ot n	uumBud

Protocol References:

uj d U f B ut Ve ot p nt H y i j co H h H ot d Fnt h &
6 ot n U 6 ot n

Laboratory References:

uumBud U uvcose t 8 B ny H h. 5755 W H, B H nnH uy 8 H. my hop y. w d 4 W C 3 C. m u R) 352 N 433-3210

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131264-1	EPBBC_20230315	Water	03/15/23 09:30	03/15/23 17:35

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210719.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131264-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131264-3)	3/15/23	09:30 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1604		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR269

Loc: 570
131264

570-131264 Chain of Custody

Calscience

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Myra Sandvig	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230315	3/15/23	0930	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230315-1	3/15/23	0930	TB	WM	2	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #: EDSP56VK
Time of Readings: 0930
DO (mg/L): 10.19
pH: 7.51
Temp (°C): 50.1
TRC (mg/L): 0.00
Checked by:
Date/Time: 3-15-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3-15-23 1335	Received by: EC	Date/Time: 3/15/23 1335
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

3.1/3.1 2.8/2.8 2.3/2.3 SOIL

SAP COC 2019/2020 VERSION 3

4/4/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMALIK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230315	3/15/23	0930	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	0930	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ___ Disposal by Lab ___ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.:

Relinquished by:	Company:	Date/Time: 3-15-23 1335	Received:		Date/Time: 3/15/23 1335
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received: EC		Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

3.1/5.1 2.8/2.8 2.3/2.3 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210886.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-131264-2
Address: 5755 8th Street East, ,	Due Date Requested: 3/31/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements: 6368 9239 0990
Empty Kit Relinquished by:	Date: Time: Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	03/16/23 12:22	ET		3/17/23 8:32	ECHS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: NA | Cooler Temperature(s) °C and Other Remarks: Med Bed Ice 0.1 Dig 2 0.1

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131264-2

Login Number: 131264
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131264-2

Login Number: 131264
List Number: 3
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/17/23 12:59 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 9:59:04 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131264-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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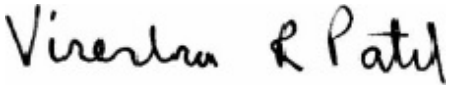
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-131264-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131264-3

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.8º C and 3.1º C.

Receipt Exceptions

One of the containers for the following samples were received broken: EPBBC_20230315 (570-131264-1), TB-20230315-1 (570-131264-2) and TB-20230315-2 (570-131264-3). The 1 liter unpreserved amberglass was received broken with no remaining volume.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Method	Method Description	Protocol	Laboratory
BCbhot HoyhH	TQyt Hvoy& - WPI oie- in4ni ConqQenr	Eot n	Wt H,yip&

Protocol References:

Eot n = Eot n

Laboratory References:

Wt H,yip& = Wt H,yip&dt yi&Hnyi - gyckin& 931 u Pgyckin&d4n. Ocyt Fn. I d 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131264-1	EPBBC_20230315	Water	03/15/23 09:30	03/15/23 17:35

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 481629
Report Level: IV
Report Date: 03/27/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Project: BOEING NPDES SSFL - (570-131264-1) Boeing SSFL ISRA and BMP - NEW 57014595

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	Lab Job #: Project No: Location: Date Received:	481629 BOEING NPDES SSFL (570-131264-1) Boeing SSFL ISRA and BMP - NEW 57014595 03/15/23

Sample ID	Lab ID	Collected	Matrix
EPBBC_20230315_20230314 (570-131264-1)	481629-001	03/15/23 09:30	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	481629
	Project No:	BOEING NPDES SSFL
	Location:	(570-131264-1) Boeing SSFL ISRA and BMP - NEW 57014595
	Date Received:	03/15/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/16/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

481629

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210714.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-131264-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 3/28/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, Other:
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water		X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1654	EC		3/15/23 16:54	ET
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

4/5/2023

ICOC No:
570-210714

Containers

Count	Container Type	Preservative
3	Plastic 120mL - Sterile/Na2SO3	Sodium Sulfite

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins Calscience

Project: Boeing SSFL ISRA and BMP- New

Date Received: 03-15-23

Sampler's Name Present: ☐ Yes ☒ No

Section 2

Sample(s) received in a cooler? ☒ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 5.6 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☒ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 1.9 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✓		
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?			✓
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 03-15-23

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 481629 **Project#:** BOEING NPDES SSFL

Client: Eurofins Calscience Tustin **Location:** (570-131264-1) Boeing SSFL ISRA an...

Field ID:	EPBBC_20230315_20230314 (570-131264-1)	**Batch#:**	309880	**Analyzed:**	03/16/23 14:07
Lab ID:	481629-001	**Sampled:**	03/15/23 09:30	**Prep:**	
Matrix:	Water	**Received:**	03/15/23	**Analysis:**	SM 9223Bb
DiIn Fac:	1.000	**Prepared:**	03/15/23 17:13	**Analyst:**	VLC

481629-001 Analyte	Result	RL	Units
Coliform, E. Coli	**580**	1.0	MPN/100ml

Legend

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: PS Prep Date/Time: 3/15/23 1713 QC Batch ID: 309880 Batch Page 1 of 2

Read Analyst: VC Read Date/Time 3/16/23 1407

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: HU930 Pipette Lot #: A104193/A104222/A104071

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 3/1/23 Bottle Lot #: DU006V Comparator Lot #: HU148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 34.8°C 1809 Incubator Out, Temp/Time: 35.1°C 1404

Fecal Coliform: Water Bath ID: PS 3/16/23 #6 Water Bath In, Temp/Time: 44.5°C 1809 Water Bath Out, Temp/Time: 44.4°C ~~1404~~ 1500 VC 3/16/23

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		481612-002	1x	45	10	135.4	140	0	0	<1	<1	0	0	<1	<1	R-02
		481610-001		49	48	>2419.6	>2400	1	0	1.0	1	0	0	<1	<1	RE-01
		481607-001		48	14	209.8	210	14	4	20.9	21	0	0	<1	<1	RC-01
		002		42	8	104.6	100	16	2	21.3	21	0	0	<1	<1	02
		003		49	48	>2419.6	>2400	49	47	2419.6	2400	49	47	2419.6	2400	03
		004		49	48	>2419.6	>2400	16	11	32.5	32	25	2	36.4	36	04
		005		49	48	>2419.6	>2400	49	42	1299.7	1300	49	41	1203.3	1200	05
		006		49	48	>2419.6	>2400	49	39	1046.2	1000	49	39	1046.2	1000	06
		007		49	48	>2419.6	>2400	49	41	1203.3	1200	49	42	1299.7	1300	07
		008		49	48	>2419.6	>2400	49	46	1986.3	2000	48	42	755.6	760	08
		009		49	48	>2419.6	>2400	48	47	960.6	960	49	43	1413.6	1400	09
		010		49	48	>2419.6	>2400	49	46	1986.3	2000	49	44	1553.1	1600	10
		481630-001		49	48	>2419.6	>2400	49	48	>2419.6	>2400	PS 3/24/23				FU-01
Quality Control		**Culture ID**														
Positive +/+ (E. Coli)		3/12/23		49	48	>2419.6	>2400	49	48	>2419.6	>2400	49	48	>2419.6	>2400	
Positive +/- (K. Pneumonia)				49	48	>2419.6	>2400	0	0	<1	<1	49	48	>2419.6	>2400	
Negative -/- (P. Aeruginosa)				0	0	<1	<1	0	0	<1	<1	0	0	<1	<1	

Data Entered By: JA 3/16/23 Data Reviewed By:

SM 9223 B-b, Quanti-Tray

Prep Analyst: PS Prep Date/Time: 3/15/23 1718 QC Batch ID: 309880 Batch Page 2 of 2

Read Analyst: VC Read Date/Time 3/16/23 1407

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: HU2330 (4) VC 3/16/23 Pipette Lot #: A104193/A104222/A104071

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 3/1/23 Bottle Lot #: DV006V Comparator Lot #: HU148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: N3 Incubator In, Temp/Time: 34.8 1309 Incubator Out, Temp/Time: 1404 35.1 °C

Fecal Coliform: Water Bath ID: 6 Water Bath In, Temp/Time: 44.5 1309 Water Bath Out, Temp/Time: 1500 44.4 °C

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		48/630-001	10x	49	48	>2419.6	>24000	47	15	191.8	1900					FU-01
		001	~~25x~~ 100x VC 3/16/23	49	29	579.4	58000	10	2	13.2	1300	PS	3/24/23			1
		48/629-001	1x	49	48	>2419.6	>2400	~~24~~ 49	~~4~~ 24	~~579.4~~ 37.3	~~580~~ 37					GD-01
		001	10x	49	43	1413.6	14000	49 24 PS 3/17/23	24 4	~~579.4~~ 37.3	~~5800~~ 580 PS 3/17/23					1
		001	~~25x~~ 100x VC 3/16/23	43	11	121.1	12000	3	0	3.1	~~3600~~ 310 PS 3/17/23					

JA 3/16/23

Quality Control	Culture ID													
Positive +/+ (E. Coli)	3/12/23	49	48	>2419.6	>2400	49	48	>2419.6	>2400	49	48	>2419.6	2400	
Positive +/- (K. Pneumonia)	↓	49	48	~~>2419.6~~ 2419.6	>2400	0	0	<1	<1	49	48	>2419.6	2400	
Negative -/- (P. Aeruginosa)		0	0	<1	<1	0	0	<1	<1	0	0	<1	<1	

Data Entered By: JA 3/16/23 Data Reviewed By: JA 3/16/23

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210719.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131264-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131264-3)	3/15/23	09:30 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1604		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR269

Loc: 570
131264

570-131264 Chain of Custody

Calscience

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Myra Sandvig	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230315	3/15/23	0930	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230315-1	3/15/23	0930	TB	WM	2	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #: EDSP56VK
Time of Readings: 0930
DO (mg/L): 10.19
pH: 7.51
Temp (°C): 50.1
TRC (mg/L): 0.00
Checked by:
Date/Time: 3-15-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3-15-23 1335	Received by: EC	Date/Time: 3/15/23 1335
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

3.1/3.1 2.8/2.8 2.3/2.3 SOIL

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/9/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMALIK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230315	3/15/23	0930	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	0930	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ____ Disposal by Lab ____ Archive for ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes

Relinquished by:	Company:	Date/Time:	Received:	Date/Time:
[signature]	EA	3-15-23 1335	[signature] EA	3/15/23 1335
[signature]	EC	3/15/23 1735	[signature] EC	
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

3.1/5.1 2.8/2.8 2.3/2.3 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131264-3

Login Number: 131264
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131264-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

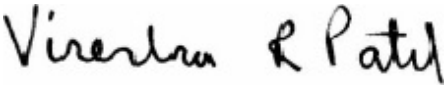
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-131264-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131264-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131264-4

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.8º C and 3.1º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: EPBBC_20230315 (570-131264-1), (CCV 320-665899/15), (LCS 320-665270/2-A), (LCSD 320-665270/3-A) and (MB 320-665270/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-4

Client Sample ID: EPBBC_20230315

Lab Sample ID: 570-131264-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000019	J,DX q MB	0.000051	0.000000074	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.00000098	J,DX q	0.000051	0.000000073	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.00000099	J,DX q	0.000051	0.000000067	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000010	J,DX q	0.000051	0.00000011	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.00000072	J,DX q	0.000051	0.00000011	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.00000073	J,DX q	0.000051	0.0000001 2	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000051	J,DX	0.000051	0.00000011	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000040	J,DX MB	0.000051	0.0000005 5	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000096	J,DX q MB	0.000051	0.0000003 5	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000012	J,DX q	0.000051	0.0000003 6	ug/L	1		1613B	Total/NA
OCDD	0.00058	MB	0.00010	0.0000018	ug/L	1		1613B	Total/NA
OCDF	0.000039	J,DX	0.00010	0.0000005 4	ug/L	1		1613B	Total/NA
Total HxCDD	0.000014	J,DX q MB	0.000051	0.000000067	ug/L	1		1613B	Total/NA
Total HxCDF	0.000010	J,DX q	0.000051	0.00000011	ug/L	1		1613B	Total/NA
Total HpCDD	0.00011	J,DX MB	0.000051	0.0000005 5	ug/L	1		1613B	Total/NA
Total HpCDF	0.000031	J,DX q MB	0.000051	0.0000003 5	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBBC_20230315
Lab Sample ID: 570-131268-1
Date Collected: 03/15/23 0v:30
Matrix: Water
Date Receiyed: 03/15/23 17:35

Analzte	Result	f uali.ier	RL	EDL	Qnit	D	Prepared	AnalzUed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000015	ug/L		04/03/23 14:30	04/07/23 06:54	1
2,3,7,8-TCDF	ND		0.000010	0.00000045	ug/L		04/03/23 14:30	04/07/23 06:54	1
1,2,3,7,8-PeCDD	ND		0.000051	0.00000057	ug/L		04/03/23 14:30	04/07/23 06:54	1
1,2,3,7,8-PeCDF	ND		0.000051	0.00000034	ug/L		04/03/23 14:30	04/07/23 06:54	1
2,3,4,7,8-PeCDF	ND		0.000051	0.00000038	ug/L		04/03/23 14:30	04/07/23 06:54	1
1X2X3X7X8-HxCDD	0.J00001v	, XDq 4 MB	0.000051	0.00000074	ug/L		04/03/23 14:30	04/07/23 06:54	1
1X2X3X6X7X8-HxCDD	0.J00000v9	, XDq 4	0.000051	0.00000073	ug/L		04/03/23 14:30	04/07/23 06:54	1
1X2X3X7X8X-HxCDD	0.J00000vv	, XDq 4	0.000051	0.00000067	ug/L		04/03/23 14:30	04/07/23 06:54	1
1X2X3X7X8-HxCDF	0.J000010	, XDq 4	0.000051	0.00000011	ug/L		04/03/23 14:30	04/07/23 06:54	1
1X2X3X6X7X8-HxCDF	0.J00000072	, XDq 4	0.000051	0.00000011	ug/L		04/03/23 14:30	04/07/23 06:54	1
1X2X3X7X8X-HxCDF	0.J00000073	, XDq 4	0.000051	0.00000012	ug/L		04/03/23 14:30	04/07/23 06:54	1
2X3X4X6X7X8-HxCDF	0.J00000051	, XDq	0.000051	0.00000011	ug/L		04/03/23 14:30	04/07/23 06:54	1
1X2X3X6X7X8-HpCDD	0.J00080	, XDq MB	0.000051	0.00000055	ug/L		04/03/23 14:30	04/07/23 06:54	1
1X2X3X6X7X8-HpCDF	0.J00000v6	, XDq 4 MB	0.000051	0.00000035	ug/L		04/03/23 14:30	04/07/23 06:54	1
1X2X3X7X8X-HpCDF	0.J000012	, XDq 4	0.000051	0.00000036	ug/L		04/03/23 14:30	04/07/23 06:54	1
OCDD	0.J00059	MB	0.00010	0.0000018	ug/L		04/03/23 14:30	04/07/23 06:54	1
OCDF	0.J00003v	, XDq	0.00010	0.00000054	ug/L		04/03/23 14:30	04/07/23 06:54	1
Total TCDD	ND		0.000010	0.00000015	ug/L		04/03/23 14:30	04/07/23 06:54	1
Total TCDF	ND		0.000010	0.00000045	ug/L		04/03/23 14:30	04/07/23 06:54	1
Total PeCDD	ND		0.000051	0.00000057	ug/L		04/03/23 14:30	04/07/23 06:54	1
Total PeCDF	ND		0.000051	0.00000034	ug/L		04/03/23 14:30	04/07/23 06:54	1
Total HxCDD	0.J00018	, XDq 4 MB	0.000051	0.00000067	ug/L		04/03/23 14:30	04/07/23 06:54	1
Total HxCDF	0.J00010	, XDq 4	0.000051	0.00000011	ug/L		04/03/23 14:30	04/07/23 06:54	1
Total HpCDD	0.J0011	, XDq MB	0.000051	0.00000055	ug/L		04/03/23 14:30	04/07/23 06:54	1
Total HpCDF	0.J00031	, XDq 4 MB	0.000051	0.00000035	ug/L		04/03/23 14:30	04/07/23 06:54	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*81*		*20 - 156*	*46/43/23 16:34*	*46/47/23 45:06*	*1*
13C-2,3,7,8-TCDF	*75*		*26 - 159*	*46/43/23 16:34*	*46/47/23 45:06*	*1*
13C-1,2,3,7,8-PeCDD	*87*		*20 - 181*	*46/43/23 16:34*	*46/47/23 45:06*	*1*
13C-1,2,3,7,8-PeCDF	*79*		*26 - 180*	*46/43/23 16:34*	*46/47/23 45:06*	*1*
13C-2,3,6,7,8-PeCDF	*78*		*21 - 178*	*46/43/23 16:34*	*46/47/23 45:06*	*1*
13C-1,2,3,6,7,8-HxCDD	*78*		*32 - 161*	*46/43/23 16:34*	*46/47/23 45:06*	*1*
13C-1,2,3,5,7,8-HxCDD	*86*		*28 - 134*	*46/43/23 16:34*	*46/47/23 45:06*	*1*
13C-1,2,3,6,7,8-HxCDF	*77*		*25 - 102*	*46/43/23 16:34*	*46/47/23 45:06*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 0v:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131268-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,5,7,8-HxCDF	78		25 - 123	46/43/23 16:34	46/47/23 45:06	1
13C-1,2,3,7,8,9-HxCDF	79		29 - 167	46/43/23 16:34	46/47/23 45:06	1
13C-2,3,6,5,7,8-HxCDF	84		28 - 135	46/43/23 16:34	46/47/23 45:06	1
13C-1,2,3,6,5,7,8-HpCDD	88		23 - 164	46/43/23 16:34	46/47/23 45:06	1
13C-1,2,3,6,5,7,8-HpCDF	71		28 - 163	46/43/23 16:34	46/47/23 45:06	1
13C-1,2,3,6,7,8,9-HpCDF	83		25 - 138	46/43/23 16:34	46/47/23 45:06	1
13C-OCDD	82		17 - 107	46/43/23 16:34	46/47/23 45:06	1
13C-OCDF	79		17 - 107	46/43/23 16:34	46/47/23 45:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	87		30 - 197	46/43/23 16:34	46/47/23 45:06	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (35-197)								
570-131264-1	EPBBC_20230315	87								
MB 320-665270/1-A	Method Blank	91								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	37TCDD (31-191)								
LCS 320-665270/2-A	Lab Control Sample	93								
LCSD 320-665270/3-A	Lab Control Sample Dup	94								

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-131264-1	EPBBC_20230315	81	76	87	79	78	78	84	77
MB 320-665270/1-A	Method Blank	79	73	80	73	74	74	76	70

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-131264-1	EPBBC_20230315	78	79	80	88	71	83	82	79
MB 320-665270/1-A	Method Blank	71	76	73	78	63	78	71	67

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-665270/2-A	Lab Control Sample	70	63	77	68	68	72	76	70
LCSD 320-665270/3-A	Lab Control Sample Dup	77	73	79	73	72	72	77	72

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-665270/2-A	Lab Control Sample	70	70	71	79	65	76	76	71
LCSD 320-665270/3-A	Lab Control Sample Dup	73	76	74	83	66	76	77	73

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-665270/1-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665270

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000013	ug/L		04/03/23 14:30	04/07/23 00:29	1
2,3,7,8-TCDF	ND		0.000010	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000045	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000014	ug/L		04/03/23 14:30	04/07/23 00:29	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000015	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,7,8-HxCDD	0.00000149	J,DX q	0.000050	0.00000025	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000026	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000023	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000017	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000016	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,6,7,8-HpCDD	0.000000942	J,DX q	0.000050	0.00000031	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,6,7,8-HpCDF	0.00000151	J,DX	0.000050	0.00000087	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000090	ug/L		04/03/23 14:30	04/07/23 00:29	1
OCDD	0.00000452	J,DX	0.00010	0.00000043	ug/L		04/03/23 14:30	04/07/23 00:29	1
OCDF	ND		0.00010	0.00000080	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total TCDD	0.00000632	J,DX q	0.000010	0.00000013	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total TCDF	ND		0.000010	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total PeCDD	ND		0.000050	0.00000045	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total PeCDF	ND		0.000050	0.00000014	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HxCDD	0.00000149	J,DX q	0.000050	0.00000023	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HxCDF	ND		0.000050	0.00000016	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HpCDD	0.000000942	J,DX q	0.000050	0.00000031	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HpCDF	0.00000151	J,DX	0.000050	0.00000087	ug/L		04/03/23 14:30	04/07/23 00:29	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*29 - 154*	*04/03/23 14:30*	*04/07/23 00:26*	*1*
13C-2,3,7,8-TCDF	*73*		*24 - 156*	*04/03/23 14:30*	*04/07/23 00:26*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*29 - 181*	*04/03/23 14:30*	*04/07/23 00:26*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-665270/1-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665270

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	73		24 - 189	04/03/23 14:30	04/07/23 00:26	1
13C-2,3,4,7,8-PeCDF	74		21 - 178	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,7,8-HxCDD	74		32 - 141	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,5,7,8-HxCDD	75		28 - 130	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,7,8-HxCDF	70		25 - 192	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,5,7,8-HxCDF	71		25 - 123	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,7,8,6-HxCDF	75		26 - 147	04/03/23 14:30	04/07/23 00:26	1
13C-2,3,4,5,7,8-HxCDF	73		28 - 135	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,5,7,8-HpCDD	78		23 - 140	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,5,7,8-HpCDF	53		28 - 143	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,7,8,6-HpCDF	78		25 - 138	04/03/23 14:30	04/07/23 00:26	1
13C-OCDD	71		17 - 197	04/03/23 14:30	04/07/23 00:26	1
13C-OCDF	57		17 - 197	04/03/23 14:30	04/07/23 00:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	61		39 - 167	04/03/23 14:30	04/07/23 00:26	1

Lab Sample ID: LCS 320-665270/2-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665270

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000175		ug/L		87	67 - 158		
2,3,7,8-TCDF			0.000200	0.000177		ug/L		89	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000815		ug/L		82	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000802		ug/L		80	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000805		ug/L		81	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000807		ug/L		81	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.000822		ug/L		82	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000816		ug/L		82	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000807		ug/L		81	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000844		ug/L		84	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000798		ug/L		80	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000797		ug/L		80	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000846		ug/L		85	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000837		ug/L		84	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000792		ug/L		79	78 - 138		
OCDD			0.00200	0.00165		ug/L		82	78 - 144		
OCDF			0.00200	0.00166		ug/L		83	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	70		20 - 179
13C-2,3,7,8-TCDF	53		22 - 192
13C-1,2,3,7,8-PeCDD	77		21 - 227
13C-1,2,3,7,8-PeCDF	58		21 - 162
13C-2,3,4,7,8-PeCDF	58		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 163
13C-1,2,3,5,7,8-HxCDD	75		29 - 153

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-665270/2-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665270

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	70		16 - 202
13C-1,2,3,5,7,8-HxCDF	70		21 - 196
13C-1,2,3,7,8,6-HxCDF	70		17 - 209
13C-2,3,4,5,7,8-HxCDF	71		22 - 175
13C-1,2,3,4,5,7,8-HpCDD	76		25 - 155
13C-1,2,3,4,5,7,8-HpCDF	59		21 - 198
13C-1,2,3,4,7,8,6-HpCDF	75		20 - 185
13C-OCDD	75		13 - 166
13C-OCDF	71		13 - 166

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	63		31 - 161

Lab Sample ID: LCSD 320-665270/3-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665270

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000180		ug/L		90	67 - 158	3	50
2,3,7,8-TCDF			0.000200	0.000178		ug/L		89	75 - 158	0	50
1,2,3,7,8-PeCDD			0.00100	0.000905		ug/L		91	70 - 142	10	50
1,2,3,7,8-PeCDF			0.00100	0.000867		ug/L		87	80 - 134	8	50
2,3,4,7,8-PeCDF			0.00100	0.000872		ug/L		87	68 - 160	8	50
1,2,3,4,7,8-HxCDD			0.00100	0.000903		ug/L		90	70 - 164	11	50
1,2,3,6,7,8-HxCDD			0.00100	0.000911		ug/L		91	76 - 134	10	50
1,2,3,7,8,9-HxCDD			0.00100	0.000919		ug/L		92	64 - 162	12	50
1,2,3,4,7,8-HxCDF			0.00100	0.000875		ug/L		88	72 - 134	8	50
1,2,3,6,7,8-HxCDF			0.00100	0.000870		ug/L		87	84 - 130	3	50
1,2,3,7,8,9-HxCDF			0.00100	0.000853		ug/L		85	78 - 130	7	50
2,3,4,6,7,8-HxCDF			0.00100	0.000868		ug/L		87	70 - 156	9	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000836		ug/L		84	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000937		ug/L		94	82 - 122	11	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000894		ug/L		89	78 - 138	12	50
OCDD			0.00200	0.00186		ug/L		93	78 - 144	12	50
OCDF			0.00200	0.00187		ug/L		94	63 - 170	12	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 179
13C-2,3,7,8-TCDF	73		22 - 192
13C-1,2,3,7,8-PeCDD	76		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 162
13C-2,3,4,7,8-PeCDF	72		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 163
13C-1,2,3,5,7,8-HxCDD	77		29 - 153
13C-1,2,3,4,7,8-HxCDF	72		16 - 202
13C-1,2,3,5,7,8-HxCDF	73		21 - 196
13C-1,2,3,7,8,6-HxCDF	75		17 - 209
13C-2,3,4,5,7,8-HxCDF	74		22 - 175

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-665270/3-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665270

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,5,7,8-HpCDD	83		25 - 155
13C-1,2,3,4,5,7,8-HpCDF	55		21 - 198
13C-1,2,3,4,7,8,6-HpCDF	75		20 - 185
13C-OCDD	77		13 - 166
13C-OCDF	73		13 - 166

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	64		31 - 161

Specialty Organics

Prep Batch: 665270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	1613B	
MB 320-665270/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-665270/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-665270/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 665899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	1613B	665270
MB 320-665270/1-A	Method Blank	Total/NA	Water	1613B	665270
LCS 320-665270/2-A	Lab Control Sample	Total/NA	Water	1613B	665270
LCSD 320-665270/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	665270

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-121463-3
Project/Site: Boeing SSFL ISMA and Bf P - mG9

Client Sample ID: EPBBC_20230315
Lab Sample ID: 570-131264-1
Date Collected: 03/15/23 09:30
Matrix: Water
Date Received: 03/15/23 17:35

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
potal/mA	PreW	1612B			ETE.2 NL	40.0 uL	665470	03/02/42 13:20	Cs B	GGp SAC
potal/mA	Analy8i8	1612B		1	1 SaNWe	1 SaNWe	665TEE	03/07/42 06:53	s MB	GGp SAC
	In8truNent ID: DFS 1									

Laboratory References:

GGp SAC RGuro÷in8 SacraNento, TT0 Miver8ide Parkway, 9 e8t SacraNento, CA E5605, pGL (E16)272-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-4

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131264-1	EPBBC_20230315	Water	03/15/23 09:30	03/15/23 17:35

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210719.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131264-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131264-3)	3/15/23	09:30 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	3/15/23 1604	EC	[signature] 03/15/23 1604		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR269

Loc: 570
131264

570-131264 Chain of Custody

Calscience

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Myra Sandvick	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230315	3/15/23	0930	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial # EDBP56UK
TB_20230315-1	3/15/23	0930	TB	WM	2	N	N														x					Time of Readings 0930
																										DO (mg/L) 10.19
																										pH 7.51
																										Temp (°C) 50.1
																										TRC (mg/L) 0.00
																										Checked by:
																										Date/Time: 3-15-2023/1040
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3-15-23 1335	Received by: EC	Date/Time: 3/15/23 1325
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

3.1/3.1 2.8/2.8 2.3/2.3 SOIL

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/7/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMALIK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230315	3/15/23	0930	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	0930	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Archive for ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company:	Date/Time: 3-15-23 1335	Receiv	Date/Time: 3/15/23 1335
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Receiv EC	Date/Time:
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

3.1/5.1 2.8/2.8 2.3/2.3 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210890.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-131264-4
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/31/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	03/16/23 12:50	FC	[signature]	3-16-23 0965	Eptn
				3-03-1723	

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: Seals
Cooler Temperature(s) °C and Other Remarks: 4.7

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131264-4

Login Number: 131264
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131264-4

Login Number: 131264
List Number: 4
Creator: Oropeza, Salvador

List Source: Eurofins Sacramento
List Creation: 03/17/23 03:17 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seals
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.7C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/27/2023 10:44:07 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131264-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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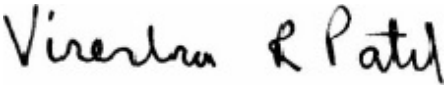
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131264-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131264-5

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.8º C and 3.1º C.

Receipt Exceptions

One of the containers for the following samples were received broken: EPBBC_20230315 (570-131264-1), TB-20230315-1 (570-131264-2) and TB-20230315-2 (570-131264-3). The 1 liter unpreserved amberglass was received broken with no remaining volume.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods EPA 608 - Pesticides/PCBs - PP list, VOCs-2CVE only (E624), Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-5
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs-2CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131264-1	EPBBC_20230315	Water	03/15/23 09:30	03/15/23 17:35
570-131264-3	TB-20230315-2	Water	03/15/23 09:30	03/15/23 17:35

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders: 3C15113

Project: 570-131264-5

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 4/24/2023
Received Date: 3/15/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #: 570-131264-5
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/15/23 with the Chain-of-Custody document. The samples were received in good condition, at 4.9 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: EPBBC_20230315 (570-131264-1) — Sampled: 03/15/23 9:30 by Client
3C15113-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 525.2M			**Instr:** GCMS13				
Batch ID: W3C2319 **Preparation:** EPA 525.2/SPE			**Prepared:** 03/28/23 08:33				**Analyst:** EFC
Chlorpyrifos	ND	0.0040	0.010	ug/l	1	04/04/23	Q-02
Diazinon	ND	0.0034	0.010	ug/l	1	04/04/23	
Surrogate(s)							
1,3-Dimethyl-2-nitrobenzene	*85%*		*50-141*	*Conc: 0.425*		*04/04/23*	
Triphenyl phosphate	*95%*		*63-200*	*Conc: 0.476*		*04/04/23*	
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C1825 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/21/23 13:27				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.050	ug/l	1	04/18/23	
Surrogate(s)							
Decachlorobiphenyl	*65%*		*33-133*	*Conc: 0.0647*		*04/18/23*	
Tetrachloro-meta-xylene	*52%*		*32-130*	*Conc: 0.0518*		*04/18/23*	
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C1417 **Preparation:** EPA 5030B			**Prepared:** 03/16/23 07:39				**Analyst:** ADM
2-Chloroethyl vinyl ether	ND	1.9	50	ug/l	10	03/16/23	M-05
Surrogate(s)							
1,2-Dichloroethane-d4	*104%*		*82-125*	*Conc: 52.2*		*03/16/23*	
4-Bromofluorobenzene	*91%*		*88-108*	*Conc: 45.7*		*03/16/23*	
Toluene-d8	*93%*		*92-112*	*Conc: 46.7*		*03/16/23*	
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32				**Analyst:** pjs

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Sample Results

(Continued)

Sample: EPBBC_20230315 (570-131264-1) Sampled: 03/15/23 9:30 by Client

3C15113-01 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 8315M			**Instr:** LCMS03				
Batch ID: W3C2019 **Preparation:** Microextraction			**Prepared:** 03/23/23 09:32			**Analyst:** pjs	
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l	1	04/05/23	Q-01

Sample: TB-20230315 (570-131264-3) Sampled: 03/15/23 9:30 by Client

3C15113-02 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 624.1			**Instr:** GCMS21				
Batch ID: W3C1417 **Preparation:** EPA 5030B			**Prepared:** 03/16/23 07:39			**Analyst:** ADM	
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l	1	03/16/23	
Surrogate(s)							
1,2-Dichloroethane-d4	*106%*		*82-125*	*Conc: 52.8*		*03/16/23*	
4-Bromofluorobenzene	*93%*		*88-108*	*Conc: 46.6*		*03/16/23*	
Toluene-d8	*93%*		*92-112*	*Conc: 46.7*		*03/16/23*	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C1825-BLK1)					**Prepared: 03/21/23**	**Analyzed: 04/17/23**					
Endrin aldehyde	ND	0.0019	0.050	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.114*			*ug/l*	*0.100*		*114*	*33-133*			
Tetrachloro-meta-xylene	*0.0641*			*ug/l*	*0.100*		*64*	*32-130*			
LCS (W3C1825-BS1)					**Prepared: 03/21/23**	**Analyzed: 04/17/23**					
Endrin aldehyde	0.135	0.0019	0.050	ug/l	0.200		68	18-130			
Surrogate(s)											
Decachlorobiphenyl	*0.0990*			*ug/l*	*0.100*		*99*	*33-133*			
Tetrachloro-meta-xylene	*0.0553*			*ug/l*	*0.100*		*55*	*32-130*			
LCS Dup (W3C1825-BSD1)					**Prepared: 03/21/23**	**Analyzed: 04/17/23**					
Endrin aldehyde	0.160	0.0019	0.050	ug/l	0.200		80	18-130	17	30	
Surrogate(s)											
Decachlorobiphenyl	*0.105*			*ug/l*	*0.100*		*105*	*33-133*			
Tetrachloro-meta-xylene	*0.0709*			*ug/l*	*0.100*		*71*	*32-130*			

Hydrazine by LCMS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2019-BLK1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	ND	0.62	2.0	ug/l							
LCS (W3C2019-BS1)					**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.81	0.62	2.0	ug/l	20.0		14	50-150			Q-01
Matrix Spike (W3C2019-MS1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.11	0.62	2.0	ug/l	20.0	*ND*	11	50-150			Q-01
Matrix Spike Dup (W3C2019-MSD1)	**Source: 3C06015-01**				**Prepared: 03/23/23**	**Analyzed: 04/05/23**					
Monomethylhydrazine (MMH)	2.45	0.62	2.0	ug/l	20.0	*ND*	12	50-150	15	30	Q-01

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Quality Control Results

(Continued)

Semivolatile Organics - Low Level by Tandem GC/MS/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2319-BLK1)					**Prepared: 03/28/23**	**Analyzed: 04/03/23**					
Chlorpyrifos	ND	0.0040	0.010	ug/l							
Diazinon	ND	0.0034	0.010	ug/l							
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.316*			*ug/l*	*0.500*		*63*	*50-141*			
Triphenyl phosphate	*0.477*			*ug/l*	*0.500*		*95*	*63-200*			
LCS (W3C2319-BS1)					**Prepared: 03/28/23**	**Analyzed: 04/03/23**					
Chlorpyrifos	0.0223	0.0040	0.010	ug/l	0.0500		45	63-145			Q-02
Diazinon	0.0284	0.0034	0.010	ug/l	0.0500		57	25-180			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.294*			*ug/l*	*0.500*		*59*	*50-141*			
Triphenyl phosphate	*0.483*			*ug/l*	*0.500*		*97*	*63-200*			
Matrix Spike (W3C2319-MS1)	**Source: 3C23055-01**				**Prepared: 03/28/23**	**Analyzed: 04/03/23**					
Chlorpyrifos	0.0296	0.0040	0.010	ug/l	0.0500	*ND*	59	37-168			
Diazinon	0.0285	0.0034	0.010	ug/l	0.0500	*ND*	57	36-153			
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.309*			*ug/l*	*0.500*		*62*	*50-141*			
Triphenyl phosphate	*0.533*			*ug/l*	*0.500*		*107*	*63-200*			
Matrix Spike Dup (W3C2319-MSD1)	**Source: 3C23055-01**				**Prepared: 03/28/23**	**Analyzed: 04/04/23**					
Chlorpyrifos	0.0229	0.0040	0.010	ug/l	0.0500	*ND*	46	37-168	25	30	
Diazinon	0.0264	0.0034	0.010	ug/l	0.0500	*ND*	53	36-153	8	30	
Surrogate(s)											
1,3-Dimethyl-2-nitrobenzene	*0.256*			*ug/l*	*0.500*		*51*	*50-141*			
Triphenyl phosphate	*0.479*			*ug/l*	*0.500*		*96*	*63-200*			

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Quality Control Results

(Continued)

Volatile Organic Compounds by P&T and GC/MS

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C1417-BLK1)					**Prepared & Analyzed: 03/16/23**						
2-Chloroethyl vinyl ether	ND	0.19	5.0	ug/l							
Surrogate(s)											
1,2-Dichloroethane-d4	*50.0*			*ug/l*	*50.0*		*100*	*82-125*			
4-Bromofluorobenzene	*46.1*			*ug/l*	*50.0*		*92*	*88-108*			
Toluene-d8	*47.0*			*ug/l*	*50.0*		*94*	*92-112*			
LCS (W3C1417-BS1)					**Prepared & Analyzed: 03/16/23**						
2-Chloroethyl vinyl ether	51.2	0.19	5.0	ug/l	50.0		102	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*48.5*			*ug/l*	*50.0*		*97*	*82-125*			
4-Bromofluorobenzene	*50.9*			*ug/l*	*50.0*		*102*	*88-108*			
Toluene-d8	*51.9*			*ug/l*	*50.0*		*104*	*92-112*			
LCS Dup (W3C1417-BSD1)					**Prepared & Analyzed: 03/16/23**						
2-Chloroethyl vinyl ether	54.4	0.19	5.0	ug/l	50.0		109	0.1-305	6	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*51.3*			*ug/l*	*50.0*		*103*	*82-125*			
4-Bromofluorobenzene	*51.5*			*ug/l*	*50.0*		*103*	*88-108*			
Toluene-d8	*53.3*			*ug/l*	*50.0*		*107*	*92-112*			
Matrix Spike (W3C1417-MS1)	**Source: 3C15121-02**				**Prepared: 03/16/23**	**Analyzed: 03/17/23**					
2-Chloroethyl vinyl ether	58.1	0.19	5.0	ug/l	50.0	*ND*	116	0.1-305			
Surrogate(s)											
1,2-Dichloroethane-d4	*51.7*			*ug/l*	*50.0*		*103*	*82-125*			
4-Bromofluorobenzene	*52.2*			*ug/l*	*50.0*		*104*	*88-108*			
Toluene-d8	*56.1*			*ug/l*	*50.0*		*112*	*92-112*			
Matrix Spike Dup (W3C1417-MSD1)	**Source: 3C15121-02**				**Prepared: 03/16/23**	**Analyzed: 03/17/23**					
2-Chloroethyl vinyl ether	56.4	0.19	5.0	ug/l	50.0	*ND*	113	0.1-305	3	25	
Surrogate(s)											
1,2-Dichloroethane-d4	*49.7*			*ug/l*	*50.0*		*99*	*82-125*			
4-Bromofluorobenzene	*51.9*			*ug/l*	*50.0*		*104*	*88-108*			
Toluene-d8	*53.6*			*ug/l*	*50.0*		*107*	*92-112*			

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Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
M-05	Due to the nature of matrix interferences, sample was diluted prior to analysis. The MDL and MRL were raised due to the dilution.
Q-01	The recovery of this analyte in QC sample was outside control limits. Sample was justified as ND based on the low level standard at or below the reporting limit.
Q-02	Low recovery of this analyte in the QC sample. The analysis of the low level standard produced acceptable recovery indicating that the sample result might be accurately reported as Not Detected.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Analyses Accreditation Summary

Analyte	CAS #	Not By NELAP	ANAB ISO 17025
EPA 8315M in Water			
Monomethylhydrazine (MMH)	60-34-4	✓	

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210719.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131264-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
Preservation Code:												
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131264-3)	3/15/23	09:30 Pacific		Water						X	3	See Attached Instructions

Please update the ID to read:
EPBBC_20230315 (570-131264-1).
Virendra (03/16/2023

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Loc: 570
131264

570-131264 Chain of Custody

Calscience

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Myra Donnelly	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230315	3/15/23	0930	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230315-1	3/15/23	0930	TB	WM	2	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #: EDSP56VK
Time of Readings: 0930
DO (mg/L): 10.19
pH: 7.51
Temp (°C): 50.1
TRC (mg/L): 0.00
Checked by:
Date/Time: 3-15-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
	H&A	3-15-23 1335	EC	3/15/23 1335
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
	EC	3/15/23 1735	EC	3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

3.1/3.1 2.8/2.8 2.3/2.3 SOIL

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/27/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMALIK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230315	3/15/23	0930	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	0930	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.:

Relinquished by:	Company: EA	Date/Time: 3-15-23 1335	Receiv	Date/Time: 3/15/23 1335
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Receiv EC	Date/Time:
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

3.1/5.1 2.8/2.8 2.3/2.3 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131264-5

Login Number: 131264
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 9:27:35 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131264-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

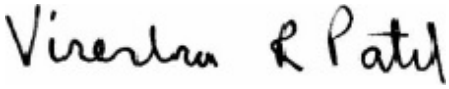
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-6

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131264-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131264-6

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.8º C and 3.1º C.

Receipt Exceptions

One of the containers for the following samples were received broken: EPBBC_20230315 (570-131264-1), TB-20230315-1 (570-131264-2) and TB-20230315-2 (570-131264-3). The 1 liter unpreserved amberglass was received broken with no remaining volume.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-6

Client Sample ID: EPBBCL_2_02031 **ba5 Sample ID: 172-303_46-3**

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131264-1	EPBBC_20230315	Water	03/15/23 09:30	03/15/23 17:35

aquatic bioassay & consulting laboratories, inc

April 6, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	EPBBC_20230315
DATE RECEIVED:	15 March - 2023
ABC LAB. NO.:	CSE0323.186

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = 3.58 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Report Date: 05 Apr-23 15:58 (p 1 of 1)
Test Code/ID: CSE0323.186 / 05-9773-4554

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	10-9676-8481	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	15 Mar-23 15:59	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	22 Mar-23	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 8h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	12-5156-0963	Code:	CSE0323.186	Project:	129095-020-001-06
Sample Date:	15 Mar-23 09:30	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	15 Mar-23 15:05	CAS (PC):		Station:	EPBBC_20230315
Sample Age:	6h (3.3 °C)	Client:	Eurofins Calscience		

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
04-6308-7310	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
10-6968-5848	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits Lower	TAC Limits Upper	Overlap	Decision
04-6308-7310	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
10-6968-5848	Reproduction	Control Resp	25.15	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	25.15	24.13	26.17	21	29	0.4881	2.183	8.68%	0.00%
100		20	24.25	22.39	26.11	18	31	0.8882	3.972	16.38%	3.58%

7d Survival Rate Detail

MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail

MD5: 6D8F2B6DFDB75DABAB1C0A0ED9CC5B0

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	29	25	25	24	26	29	25	26	26
		26	25	26	23	26	23	22	21	28	26
100		19	24	18	28	22	21	22	18	26	31
		25	24	27	31	30	25	24	27	22	21

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Report Date: 05 Apr-23 15:58 (p 1 of 2)
Test Code/ID: CSE0323.186 / 05-9773-4554

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	10-6968-5848	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	31 Mar-23 12:18	Analysis:	Parametric Bioequivalence-Two Sample	Status Level:	1
Edit Date:	30 Mar-23 14:05	MD5 Hash:	6D8F2B6DFDB75DABAB1C0A0ED9CC5B	Editor ID:	002-375-739-9
Batch ID:	10-9676-8481	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	15 Mar-23 15:59	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	22 Mar-23	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 8h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	12-5156-0963	Code:	CSE0323.186	Project:	129095-020-001-06
Sample Date:	15 Mar-23 09:30	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	15 Mar-23 15:05	CAS (PC):		Station:	EPBBC_20230315
Sample Age:	6h (3.3 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	25	5.608	0.8562	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	25.15	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	8.1	8.1	1	0.7886	0.3801	Non-Significant Effect
Error	390.3	10.271	38			
Total	398.4		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	6.583	7.353	0.0144	Equal Variances
	Mod Levene Equality of Variance Test	6.06	7.353	0.0185	Equal Variances
	Variance Ratio F Test	3.31	3.432	0.0123	Equal Variances
Distribution	Anderson-Darling A2 Test	0.4995	3.878	0.2132	Normal Distribution
	D'Agostino Kurtosis Test	0.1625	2.576	0.8709	Normal Distribution
	D'Agostino Skewness Test	0.3749	2.576	0.7077	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.167	9.21	0.9199	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1441	0.1617	0.0358	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9705	0.9236	0.3744	Normal Distribution

Reproduction Summary

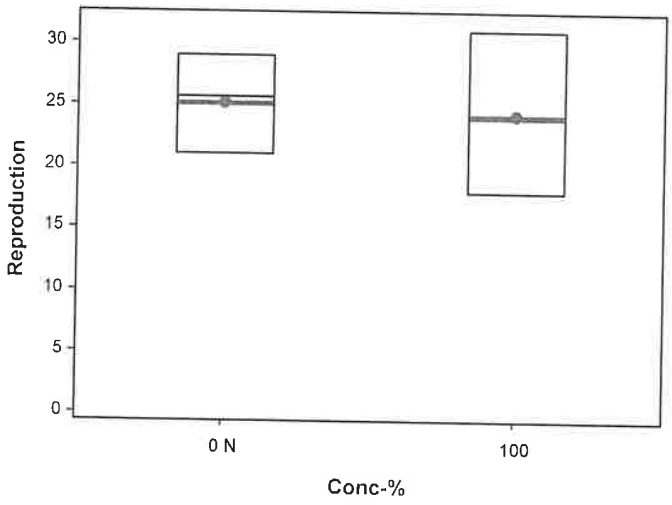
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	25.15	24.13	26.17	25.64	21	29	0.4881	8.68%	0.00%
100		20	24.25	22.39	26.11	24	18	31	0.8882	16.38%	3.58%

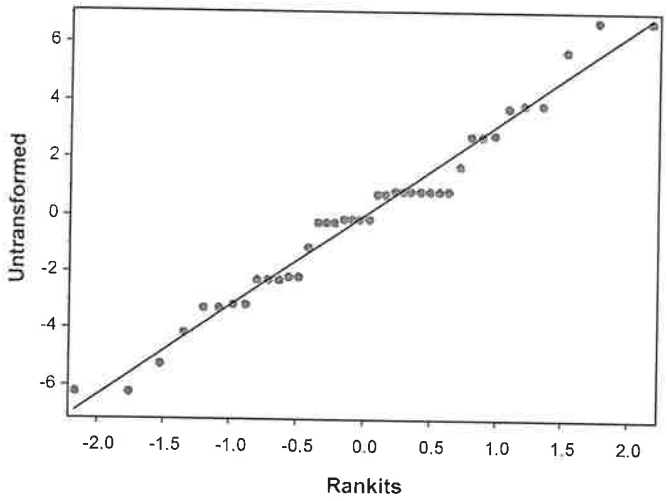
Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	29	25	25	24	26	29	25	26	26
		26	25	26	23	26	23	22	21	28	26
100		19	24	18	28	22	21	22	18	26	31
		25	24	27	31	30	25	24	27	22	21

Analysis ID:	10-6968-5848	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	31 Mar-23 12:18	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	30 Mar-23 14:05	**MD5 Hash:**	6D8F2B6DFDB75DABAB1C0A0ED9CC5B	**Editor ID:**	002-375-739-9

Graphics





CETIS Analytical Report

Report Date: 05 Apr-23 15:58 (p 1 of 2)
Test Code/ID: CSE0323.186 / 05-9773-4554

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	04-6308-7310	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	30 Mar-23 14:06	Analysis:	Single 2x2 Contingency Table	Status Level:	1
Edit Date:	30 Mar-23 14:05	MD5 Hash:	E2FCA10CAEB5BD33B061F6901431A2E1	Editor ID:	002-375-739-9
Batch ID:	10-9676-8481	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	15 Mar-23 15:59	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	22 Mar-23	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 8h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	12-5156-0963	Code:	CSE0323.186	Project:	129095-020-001-06
Sample Date:	15 Mar-23 09:30	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	15 Mar-23 15:05	CAS (PC):		Station:	EPBBC_20230315
Sample Age:	6h (3.3 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

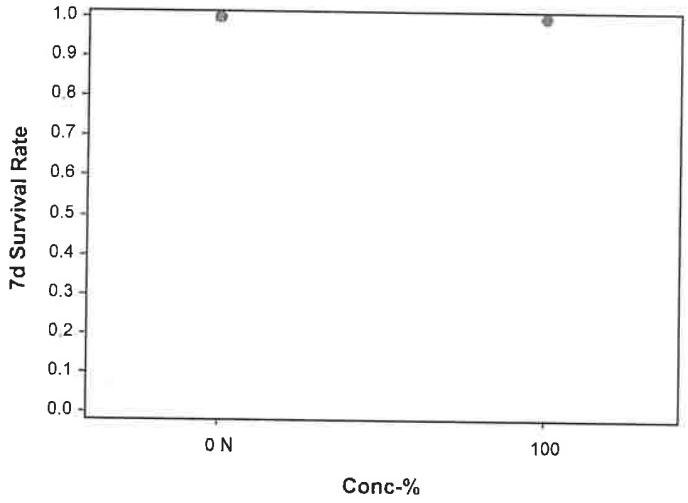
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analysis ID:	04-6308-7310	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	30 Mar-23 14:06	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	30 Mar-23 14:05	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	002-375-739-9

Graphics



CETIS Measurement Report

Report Date: 05 Apr-23 15:58 (p 1 of 1)
Test Code/ID: CSE0323.186 / 05-9773-4554

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	10-9676-8481	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	15 Mar-23 15:59	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	22 Mar-23	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 8h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	12-5156-0963	Code:	CSE0323.186	Project:	129095-020-001-06
Sample Date:	15 Mar-23 09:30	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	15 Mar-23 15:05	CAS (PC):		Station:	EPBBC_20230315
Sample Age:	6h (3.3 °C)	Client:	Eurofins Calscience		

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	65	65	65	65	65	0	0	0.00%	0
100		8	90	90	90	90	90	0	0	0.00%	0
Overall		16	77.5	70.62	84.38	65	90	3.227	12.91	16.66%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	369.6	365.2	374.1	362	381	0.6646	5.317	1.44%	0
100		8	447.1	429.3	465	422	490	2.67	21.36	4.78%	0
Overall		16	408.4	385.6	431.2	362	490	10.69	42.75	10.47%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.762	7.487	8.038	7	8	0.04115	0.3292	4.24%	0
100		8	7.688	7.41	7.965	6.9	7.9	0.04142	0.3314	4.31%	0
Overall		16	7.725	7.554	7.896	6.9	8	0.08036	0.3215	4.16%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
100		8	105	105	105	105	105	0	0	0.00%	0
Overall		16	92.5	85.62	99.38	80	105	3.227	12.91	13.96%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.988	7.958	8.017	7.9	8	0.004419	0.03535	0.44%	0
100		8	8.037	7.949	8.126	7.9	8.2	0.01326	0.1061	1.32%	0
Overall		16	8.012	7.97	8.055	7.9	8.2	0.02016	0.08062	1.01%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24	24	24	24	24	0	0	0.00%	0
Overall		16	24	24	24	24	24	0	0	0.00%	0 (0%)

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs set in Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Eurofins Calscience, Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-6606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Wcck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Wcck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA *	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Wcck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Wcck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube *	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
																							.180					
EPBBC_20230315	3/15/23	0930	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
																												Temp. deg. C °F = 3.3
																												ADDED CORRECTION FACTOR = +0.3°C
																												Chlorine (mg/L) = < 0.1
TB_20230315-2	3/15/23	0930	TB	WM	2	N	N				X																	
																												NH3 (mg/L) = < 0.1
								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

* Hand-delivered to ABC with this copy of COC

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: EPA	Date/Time: 3-15-23 1500	Receiv	Date/Time: 3/15/23 1500
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/12/2023

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 7 March - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 15.00 ug/l
EC50 = 20.00 ug/l

ENDPOINT: REPRODUCTION

NOEC = 10.00 ug/l

IC25 = 14.63 ug/l
IC50 = 19.75 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 22 Mar-23 13:33 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
12-3601-0837	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	✓	10	30	17.32	---	1
18-1287-1922	Reproduction	Dunnett Multiple Comparison Test	✓	10	30	17.32	10.0%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
06-1569-8175	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	13	13	13	1
				EC20	14	14	14	
				EC25	15	15	15	
				EC40	18	18	18	
				EC50	20	20	20	
07-2699-2510	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	12.58	11.21	13	1
			✓	IC20	13.61	12.31	14	
			✓	IC25	14.63	13.42	15	
			✓	IC40	17.7	16.73	18	
			✓	IC50	19.75	18.94	20	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits Lower	Upper	Overlap	Decision
06-1569-8175	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
12-3601-0837	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
07-2699-2510	Reproduction	Control Resp	22.9	15	<<	Yes	Passes Criteria
18-1287-1922	Reproduction	Control Resp	22.9	15	<<	Yes	Passes Criteria
18-1287-1922	Reproduction	PMSD	0.1001	0.13	0.47	Yes	Below Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	22.9	21.57	24.23	20	26	0.5859	1.853	8.09%	0.00%
3		10	22.5	20.26	24.74	18	27	0.9916	3.136	13.94%	1.75%
5		10	22.3	20.95	23.65	20	25	0.5972	1.889	8.47%	2.62%
10		10	22.4	20.61	24.19	19	28	0.7916	2.503	11.18%	2.18%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail MD5: E68F14682D021D024F00396964E3E9BD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail MD5: 2815D12133967AE436D4FC557F35CDBA

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Report Date: 22 Mar-23 13:33 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	18-1287-1922	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	Analysis:	Parametric-Control vs Treatments	Status Level:	1
Edit Date:	22 Mar-23 7:40	MD5 Hash:	2815D12133967AE436D4FC557F35CDBA	Editor ID:	007-730-798-8
Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	10	30	17.32	---	2.292	10.01%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	0.3722	2.133	2.292	CDF	0.5995	Non-Significant Effect
		5	18	0.5583	2.133	2.292	CDF	0.5168	Non-Significant Effect
		10	18	0.4652	2.133	2.292	CDF	0.5584	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	22.9	15	<<	Yes	Passes Criteria
PMSD	0.1001	0.13	0.47	Yes	Below Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.075	0.691667	3	0.1198	0.9479	Non-Significant Effect
Error	207.9	5.775	36			
Total	209.975		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	3.337	11.34	0.3425	Equal Variances
	Levene Equality of Variance Test	1.545	4.377	0.2195	Equal Variances
	Mod Levene Equality of Variance Test	1.103	4.377	0.3604	Equal Variances
Distribution	Anderson-Darling A2 Test	0.2615	3.878	0.7332	Normal Distribution
	D'Agostino Kurtosis Test	0.1221	2.576	0.9028	Normal Distribution
	D'Agostino Skewness Test	0.9793	2.576	0.3274	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.974	9.21	0.6145	Normal Distribution
	Kolmogorov-Smirnov D Test	0.08088	0.1617	0.7382	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9833	0.9236	0.8103	Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	22.9	21.57	24.23	22.25	20	26	0.5859	8.09%	0.00%
3		10	22.5	20.26	24.74	22	18	27	0.9916	13.94%	1.75%
5		10	22.3	20.95	23.65	22.6	20	25	0.5972	8.47%	2.62%
10		10	22.4	20.61	24.19	22.75	19	28	0.7916	11.18%	2.18%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

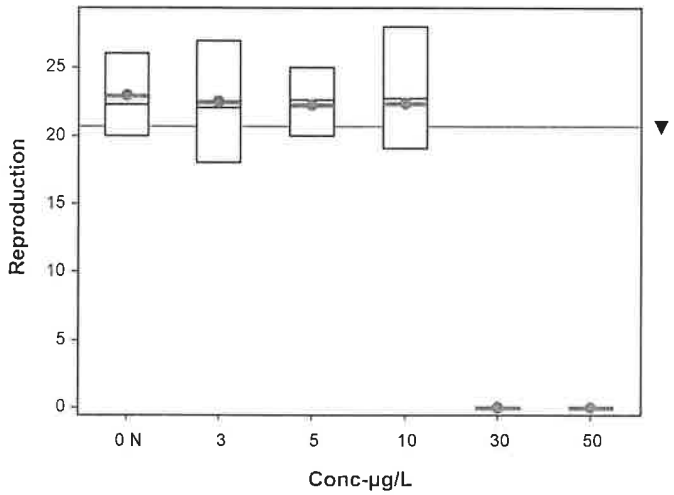
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

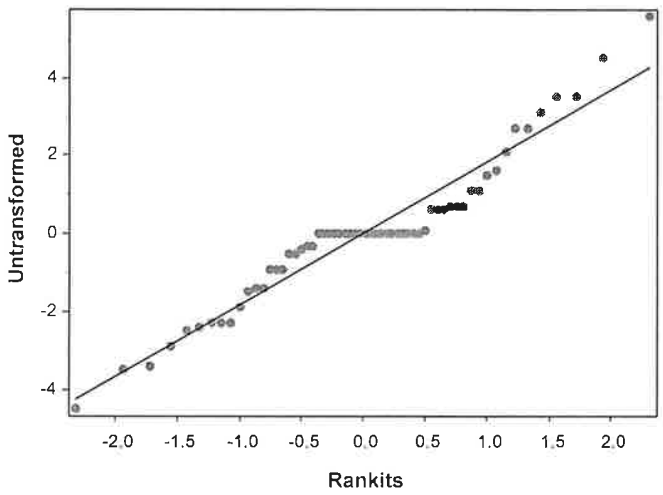
Analysis ID:	18-1287-1922	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	2815D12133967AE436D4FC557F35CDBA	**Editor ID:**	007-730-798-8

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Graphics





CETIS Analytical Report

Report Date: 22 Mar-23 13:33 (p 1 of 4)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	06-1569-8175	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	007-730-798-8
Batch ID:	04-0989-8037	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	07 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Mar-23 14:53	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	01-9737-1339	**Code:**	CER030723	**Project:**	REF TOX
Sample Date:	07 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	13	13	13
EC20	14	14	14
EC25	15	15	15
EC40	18	18	18
EC50	20	20	20

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	**Code**	**Count**	**Mean**	**Median**	**Min**	**Max**	**CV%**	**%Effect**	**ΣA/ΣB**	**Mean**	**%Effect**
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

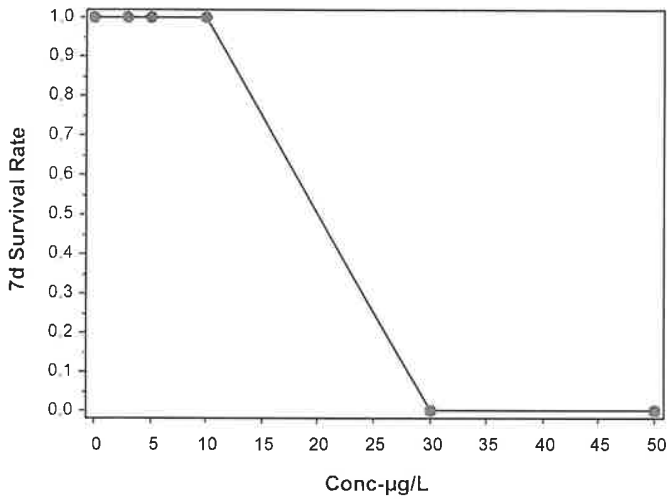
7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	06-1569-8175	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	007-730-798-8

Graphics



Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-2699-2510	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	22 Mar-23 7:40	MD5 Hash:	2815D12133967AE436D4FC557F35CDBA	Editor ID:	007-730-798-8
Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	401085	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	22.9	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	12.58	11.21	13
IC20	13.61	12.31	14
IC25	14.63	13.42	15
IC40	17.7	16.73	18
IC50	19.75	18.94	20

Reproduction Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	22.9	22.25	20	26	8.09%	0.00%	22.9	0.00%
3		10	22.5	22	18	27	13.94%	1.75%	22.5	1.75%
5		10	22.3	22.6	20	25	8.47%	2.62%	22.35	2.40%
10		10	22.4	22.75	19	28	11.18%	2.18%	22.35	2.40%
30		10	0	0	0	0	---	100.00%	0	100.00%
50		10	0	0	0	0	---	100.00%	0	100.00%

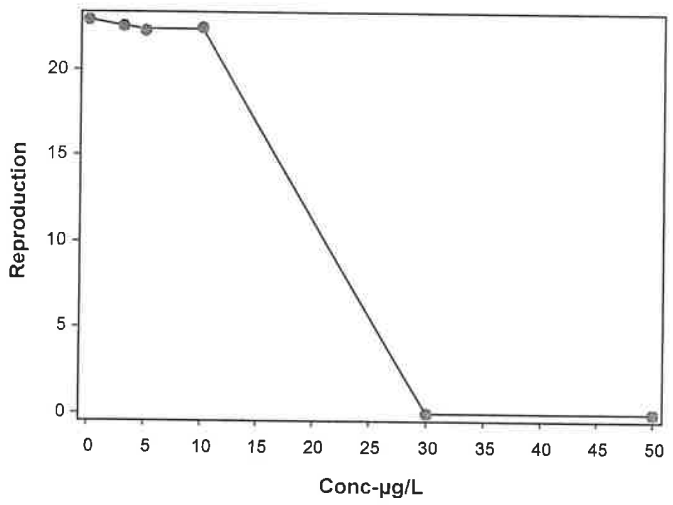
Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-2699-2510	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	2815D12133967AE436D4FC557F35CDBA	**Editor ID:**	007-730-798-8

Graphics



CETIS Analytical Report

Report Date: 22 Mar-23 13:33 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-3601-0837	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	22 Mar-23 7:40	MD5 Hash:	E68F14682D021D024F00396964E3E9BD	Editor ID:	007-730-798-8
Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0000	Exact	2.7E-05	Significant Effect
		50*	0.0000	Exact	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		0	10	10	0.0000	1.0000	100.00%
50		0	10	10	0.0000	1.0000	100.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Ceriodaphnia 7-d Survival and Reproduction Test

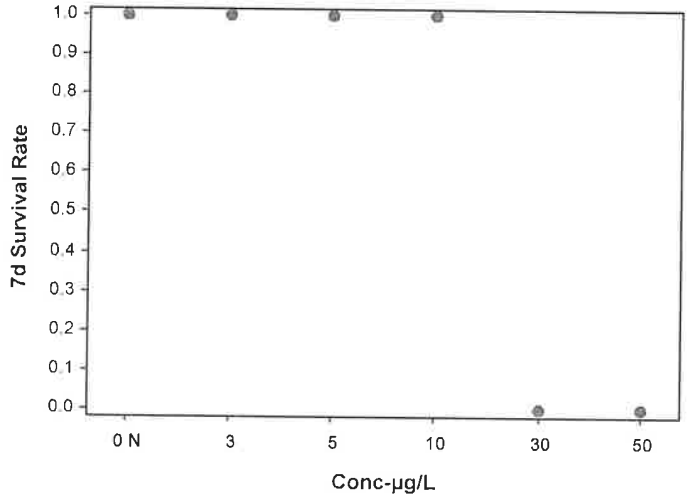
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-3601-0837	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	007-730-798-8

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Report Date: 22 Mar-23 13:34 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	63	63	63	63	63	0	0	0.00%	0
50		4	62	62	62	62	62	0	0	0.00%	0
Overall		12	62.67	62.35	62.98	62	63	0.1421	0.4924	0.79%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.5	370.6	376.4	369	379	0.4278	3.423	0.92%	0
3		8	369.2	366.6	371.9	362	373	0.3939	3.151	0.85%	0
5		8	367.2	364.7	369.8	360	369	0.3824	3.059	0.83%	0
10		8	366.6	363.9	369.4	359	369	0.4115	3.292	0.90%	0
30		6	363.7	360.1	367.3	357	367	0.5741	3.445	0.95%	0
50		3	361	352	370	357	364	1.202	3.606	1.00%	0
Overall		41	367.8	366.3	369.3	357	379	0.7447	4.769	1.30%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.763	7.495	8.03	7	8	0.04005	0.3204	4.13%	0
3		8	7.738	7.506	7.969	7.1	8	0.03468	0.2774	3.59%	0
5		8	7.712	7.454	7.971	7	8	0.03864	0.3091	4.01%	0
10		8	7.738	7.477	7.998	7	8	0.03892	0.3114	4.02%	0
30		6	7.8	7.706	7.894	7.7	7.9	0.01491	0.08944	1.15%	0
50		3	7.8	7.552	8.048	7.7	7.9	0.03333	0.1	1.28%	0
Overall		41	7.751	7.669	7.833	7	8	0.04059	0.2599	3.35%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	96	96	96	96	96	0	0	0.00%	0
50		4	99	99	99	99	99	0	0	0.00%	0
Overall		12	97	96.06	97.94	96	99	0.4264	1.477	1.52%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8	8	8	8	8	0	0	0.00%	0
3		8	8	8	8	8	8	0	0	0.00%	0
5		8	8	8	8	8	8	0	0	0.00%	0
10		8	7.975	7.936	8.014	7.9	8	0.005786	0.04629	0.58%	0
30		6	7.95	7.893	8.007	7.9	8	0.009127	0.05476	0.69%	0
50		3	7.967	7.823	8.11	7.9	8	0.01924	0.05773	0.72%	0
Overall		41	7.985	7.974	7.997	7.9	8	0.005589	0.03578	0.45%	0 (0%)

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		6	24	24	24	24	24	0	0	0.00%	0
50		3	24	24	24	24	24	0	0	0.00%	0
Overall		41	24	24	24	24	24	0	0	0.00%	0 (0%)

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210719.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131264-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131264-3)	3/15/23	09:30 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/15/23 1604	EC	03/15/23 1604		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TC269

Loc: 570
131264

570-131264 Chain of Custody

Calscience

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Myra Sandvig	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230315	3/15/23	0930	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230315-1	3/15/23	0930	TB	WM	2	N	N														x					
								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #: EDSP56VK
Time of Readings: 0930
DO (mg/L): 10.19
pH: 7.51
Temp (°C): 50.1
TRC (mg/L): 0.00
Checked by:
Date/Time: 3-15-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3-15-23 1335	Received by: EC	Date/Time: 3/15/23 1325
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

3.1/3.1 2.8/2.8 2.3/2.3 SOIL

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

4/12/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMALIK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230315	3/15/23	0930	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	0930	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Archive for ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: EA	Date/Time: 3-15-23 1335	Receiv	Date/Time: 3/15/23 1335
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Receiv EC	Date/Time:
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

3·1/5·1 2·8/2·8 2·3/2·3 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131264-6

Login Number: 131264
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:39:31 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131264-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

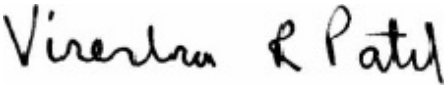
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Sample Summary 7
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-7

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131264-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131264-7

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.8º C and 3.1º C.

Receipt Exceptions

One of the containers for the following samples were received broken: EPBBC_20230315 (570-131264-1), TB-20230315-1 (570-131264-2) and TB-20230315-2 (570-131264-3). The 1 liter unpreserved amberglass was received broken with no remaining volume.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2 - "Wastewater" matrix: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-7
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131264-1	EPBBC_20230315	Water	03/15/23 09:30	03/15/23 17:35

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322307101
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/17/2023
Analyzed: 03/30/2023

Proj: 570-210891.1/ 570-131264-7/ 570-131264/ Boeing SSFL ISRA and BMP - NEW

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS					
						Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
								MFL (million fibers per liter)		
EPBBC_20230315_20230314 (570-131264-1) 322307101-0001	3/20/2023 12:00 PM	0.10	1288	0.2580	≥ 0.5 µm	None Detected	ND	50.00	<50.00	0.00 - 180.00
					> 10 µm only	None Detected	ND	50.00	<50.00	0.00 - 180.00

Collection Date/Time: *03/15/2023 09:30 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Feng Liang (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 03/30/2023 18:19:40

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

#322307101

Chain of Custody Record

eurofins | Environment Testing

4/9/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210891.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131264-7
Address: 520 Mission Street,	Due Date Requested: 3/29/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: ~~5Z014595~~ 570-131264			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
			Edwin Trujillo (FE)	3/17/23 1:25pm	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

OrderID: 322307101

ICOC No:
570-210891

#322307101

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Level IV package needed. Screen as Wastewater matrix

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210719.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131264-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131264-3)	3/15/23	09:30 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	3/15/23 1604	EC	[signature] 03/15/23 1604		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR269

Loc: 570
131264

570-131264 Chain of Custody

Calscience

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Myra Sandvig	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230315	3/15/23	0930	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230315-1	3/15/23	0930	TB	WM	2	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Readings
Meter Serial #: EDSP56VK
Time of Readings: 0930
DO (mg/L): 10.19
pH: 7.51
Temp (°C): 20.1
TRC (mg/L): 0.00
Checked by:
Date/Time: 3-15-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3-15-23 1335	Received by: EC	Date/Time: 3/15/23 1325
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received by: EC	Date/Time: 3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

3.1/3.1 2.8/2.8 2.3/2.3 SOIL

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/9/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMALIK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Walk-in Client:
(619) 280-9415 FAX				Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO)(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230315	3/15/23	0930	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	0930	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ___ Disposal by Lab ___ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company:	Date/Time: 3-15-23 1335	Receiv	Date/Time: 3/15/23 1335
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Receiv EC	Date/Time:
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

3·1/5·1 2·8/2·8 2·3/2·3 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/9/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131264-7

Login Number: 131264
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/19/2023 3:25:42 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-131264-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

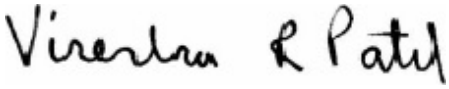
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
4/19/2023 3:25:42 PM

Authorized for release by
Virendra Patel, Project Manager I
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-8

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131264-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131264-8

Comments
No additional comments.

Receipt
The samples were received on 3/15/2023 5:35 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.3º C, 2.8º C and 3.1º C.

Receipt Exceptions

One of the containers for the following samples were received broken: EPBBC_20230315 (570-131264-1), TB-20230315-1 (570-131264-2) and TB-20230315-2 (570-131264-3). The 1 liter unpreserved amberglass was received broken with no remaining volume.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 606931
The matrix spike (MS) recoveries for Gross Alpha were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.
(570-131459-Q-1-G MS)

Method 900.0: Gross Alpha and Gross Beta batch 606931
The detection goal was not met for the sample duplicate. However the purpose of the DUP is to demonstrate batch precision. The precision was within control limits demonstrating no adverse effect from the discrepancy.

(570-131459-Q-1-I DU)

Method 900.0: Gross Alpha and Gross Beta batch 606931
The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass: EPBBC_20230315 (570-131264-1). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 606931
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230315 (570-131264-1), (LCS 160-606931/2-A), (LCSB 160-606931/3-A), (MB 160-606931/1-A), (570-131459-Q-1-F), (570-131459-Q-1-I DU), (570-131459-Q-1-G MS) and (570-131459-Q-1-H MSBT)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228

Job ID: 570-131264-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBBC_20230315 (570-131264-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBBC_20230315 (570-131264-1), (570-131073-AT-1-B) and (570-131073-AT-1-C DU)

Methods 903.0, 9315: Radium-226 prep batch 160-604894:

Job ID: 570-131264-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230315 (570-131264-1), (LCS 160-604894/2-A), (LCSD 160-604894/3-A) and (MB 160-604894/1-A)

Methods 903.0, 9315: Radium-226 batch 605215
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230315 (570-131264-1), (LCS 160-605215/2-A), (LCSD 160-605215/3-A) and (MB 160-605215/1-A)

Methods 904.0, 9320: Radium-228 batch 605216
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230315 (570-131264-1), (LCS 160-605216/2-A), (LCSD 160-605216/3-A) and (MB 160-605216/1-A)

Methods 904.0, 9320: Ra-228 160-604896
The detection goal was not met for the following sample due a reduced aliquot, which can be attributed to the presence of matrix interferences: EPBBC_20230315 (570-131264-1). Analytical results are reported with the detection limit achieved.

Methods 904.0, 9320: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.
Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Method 905: Strontium-90 batch 605090
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230315 (570-131264-1), (LCS 160-605090/2-A), (MB 160-605090/1-A), (380-41106-B-1-A) and (380-41106-C-1-A DU)

Method 905: Strontium-90 batch 606565
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230315 (570-131264-1), (LCS 160-606565/2-A), (LCSD 160-606565/3-A) and (MB 160-606565/1-A)

Method 906.0: Tritium 606188
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBBC_20230315 (570-131264-1), (LCS 160-606188/2-A), (MB 160-606188/1-A), (570-130861-J-1-A), (570-130861-J-1-B DU), (570-130862-I-1-A) and (570-130862-I-1-B MS)

Method A-01-R: Isotopic Uranium batch 605729
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230315 (570-131264-1), (LCS 160-605729/2-A), (MB 160-605729/1-A), (570-131449-AX-1-B) and (570-131449-AX-1-C DU)

Method A-01-R: Isotopic Uranium batch 606930
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230315 (570-131264-1), (LCS 160-606930/2-A), (MB 160-606930/1-A), (570-131940-R-1-E) and (570-131940-R-1-F DU)

Job ID: 570-131264-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method ExtChrom: Uranium Prep Batch 160-605729:
The following sample was prepared at a reduced aliquot due to discoloration: EPBBC_20230315 (570-131264-1).

Method ExtChrom: Uranium Prep Batch 160-606930:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBBC_20230315 (570-131264-1).

Method LSC_Dist_Susp:

Method PrecSep_0: Radium-228 Prep Batch 160-604896

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230315 (570-131264-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0: Radium 228 Prep Batch 160-605216

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230315 (570-131264-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Methods PrecSep-21, PrecSep_0: Ra-226/228 160-604896 / 160-604896
The barium carrier recovery is just within the lower control limit of 40% for the following samples: EPBBC_20230315 (570-131264-1). There was physical evidence of matrix interference apparent during the initial preparation of the sample. The QC samples associated with the batch have acceptable carrier recovery indicating the presence of matrix interference.

Method PrecSep-21: Radium-226 Prep Batch 160-604894

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230315 (570-131264-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21: Radium 226 Prep Batch 160-605215

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230315 (570-131264-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium 90 Prep Batch 160-605090

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230315 (570-131264-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 606565

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230315 (570-131264-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-8

Client Sample ID: EPBBCL_2_02031 **ba5 Sample ID: 172-303_46-3**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	2.12	U G	3.18	3.19	3.00	5.40	pCi/L	04/11/23 15:16	04/14/23 05:22	1
Gross Beta	**8.13**		1.60	1.79	4.00	1.79	pCi/L	04/11/23 15:16	04/14/23 05:22	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	6.39		2.27	2.38	3.00	2.72	pCi/L	04/11/23 15:16	04/14/23 05:22	1
Gross Beta	7.33		1.09	1.31	4.00	1.02	pCi/L	04/11/23 15:16	04/14/23 05:22	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.86	U	9.40	9.40	20.0	12.1	pCi/L	03/22/23 16:26	03/30/23 09:40	1
Potassium-40	-91.5	U	138	139		268	pCi/L	03/22/23 16:26	03/30/23 09:40	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.59	U	7.22	7.22	20.0	8.82	pCi/L	03/28/23 16:33	04/12/23 12:00	1
Potassium-40	49.0	U	82.8	83.0		112	pCi/L	03/28/23 16:33	04/12/23 12:00	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-8

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.386	U	0.357	0.359	1.00	0.558	pCi/L	03/24/23 10:26	04/18/23 12:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.7*		*30 - 110*	*03/62/63 1095:*	*02/15/63 16965*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-8

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00693	U	0.161	0.161	1.00	0.337	pCi/L	03/28/23 09:34	04/19/23 09:53	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*71.8*		*30 - 110*	*03/65/63 07932*	*02/17/63 07983*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.285	U G	1.37	1.37	1.00	2.54	pCi/L	03/24/23 10:45	04/14/23 18:18	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.7*		*30 - 110*	*03/62/63 10928*	*02/12/63 15915*	*1*
4 Carrier	*85.3*		*30 - 110*	*03/62/63 10928*	*02/12/63 15915*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.213	U	0.316	0.316	1.00	0.660	pCi/L	03/28/23 09:54	04/18/23 12:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*71.8*		*30 - 110*	*03/65/63 07982*	*02/15/63 16913*	*1*
4 Carrier	*5Y.8*		*30 - 110*	*03/65/63 07982*	*02/15/63 16913*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.135	U	0.583	0.583	3.00	1.04	pCi/L	03/27/23 13:47	04/10/23 16:38	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*85.3*		*30 - 110*	*03/27/23 13:47*	*04/10/23 16:38*	*1*
Y Carrier	*90.0*		*30 - 110*	*03/27/23 13:47*	*04/10/23 16:38*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.104	U	0.370	0.370	3.00	0.653	pCi/L	04/07/23 11:12	04/17/23 19:07	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*55.1*		*30 - 110*	*02/0Y/63 119I6*	*02/1Y/63 179IY*	*1*
4 Carrier	*Y6.8*		*30 - 110*	*02/0Y/63 119I6*	*02/1Y/63 179IY*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	111	U	148	148	500	248	pCi/L	04/05/23 13:01	04/06/23 14:26	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	1.75		0.891	0.897	1.00	0.620	pCi/L	04/11/23 15:09	04/13/23 16:13	1

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBBC_20230315
Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.946		0.409	0.414	1.00	0.298	pCi/L	03/30/23 16:34	04/03/23 20:58	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131264-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-131264-1	EPBBC_20230315	55.9
LCS 160-604894/2-A	Lab Control Sample	90.5
LCS 160-605215/2-A	Lab Control Sample	94.8
LCSD 160-604894/3-A	Lab Control Sample Dup	84.0
LCSD 160-605215/3-A	Lab Control Sample Dup	91.0
MB 160-604894/1-A	Method Blank	87.1
MB 160-605215/1-A	Method Blank	94.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-131264-1	EPBBC_20230315	91.5

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131264-1	EPBBC_20230315	55.9	58.3
LCS 160-604896/2-A	Lab Control Sample	90.5	89.7
LCS 160-605216/2-A	Lab Control Sample	94.8	81.9
LCSD 160-604896/3-A	Lab Control Sample Dup	84.0	89.7
LCSD 160-605216/3-A	Lab Control Sample Dup	91.0	80.7
MB 160-604896/1-A	Method Blank	87.1	89.0
MB 160-605216/1-A	Method Blank	94.3	79.3

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131264-1	EPBBC_20230315	91.5	87.5

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc. Job ID: 570-131264-8
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131264-1	EPBBC_20230315	87.3	70.7
LCS 160-605090/2-A	Lab Control Sample	83.8	75.9
LCS 160-606565/2-A	Lab Control Sample	86.3	77.0
LCSD 160-606565/3-A	Lab Control Sample Dup	85.1	69.9
MB 160-605090/1-A	Method Blank	83.0	70.3
MB 160-606565/1-A	Method Blank	86.6	81.9

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131264-1	EPBBC_20230315	88.1	72.5

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-605729/2-A	Lab Control Sample	38.1
LCS 160-606930/2-A	Lab Control Sample	90.3
MB 160-605729/1-A	Method Blank	46.2
MB 160-606930/1-A	Method Blank	83.9

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-606931/1-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606931

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.01986	U	0.378	0.378	3.00	0.779	pCi/L	04/11/23 15:16	04/14/23 20:19	1
Gross Beta	1.580		0.602	0.622	4.00	0.817	pCi/L	04/11/23 15:16	04/14/23 20:19	1

Lab Sample ID: LCS 160-606931/2-A
Matrix: Water
Analysis Batch: 607345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606931

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	58.50		8.40	3.00	1.90	pCi/L	116	75 - 125

Lab Sample ID: LCSB 160-606931/3-A
Matrix: Water
Analysis Batch: 607345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606931

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	72.78		7.81	4.00	0.856	pCi/L	99	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	5.575	U	11.5	11.5	20.0	14.5	pCi/L	03/22/23 16:26	03/29/23 21:25	1
Potassium-40	-139.9	U	180	180		285	pCi/L	03/22/23 16:26	03/29/23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		443	pCi/L	100	75 - 125
Cesium-137	40800	42170		5030	20.0	105	pCi/L	103	75 - 125
Cobalt-60	17800	18660		2230		54.8	pCi/L	105	75 - 125

Lab Sample ID: MB 160-605283/1-A
Matrix: Water
Analysis Batch: 607160

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605283

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.793	U	6.67	6.68	20.0	7.49	pCi/L	03/28/23 16:33	04/12/23 04:01	1
Potassium-40	27.15	U	82.6	82.7		106	pCi/L	03/28/23 16:33	04/12/23 04:01	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-605283/2-A
Matrix: Water
Analysis Batch: 607188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605283

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	139700		16600		562	pCi/L	103	75 - 125
Cesium-137	40800	39690		4740	20.0	156	pCi/L	97	75 - 125
Cobalt-60	17700	17220		2060		78.1	pCi/L	97	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-604894/1-A
Matrix: Water
Analysis Batch: 607902

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604894

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.001066	U	0.0707	0.0707	1.00	0.148	pCi/L	03/24/23 10:26	04/18/23 08:36	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*478*		*30 - 110*	*03/24/23 10:26*	*04/18/23 08:36*	*1*

Lab Sample ID: LCS 160-604894/2-A
Matrix: Water
Analysis Batch: 607902

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604894

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	9.242		1.04	1.00	0.149	pCi/L	82	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*508*		*30 - 110*

Lab Sample ID: LCSD 160-604894/3-A
Matrix: Water
Analysis Batch: 607902

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 604894

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226	11.3	9.129		1.04	1.00	0.115	pCi/L	81	75 - 125	0.05	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Ba Carrier	*468*		*30 - 110*

Lab Sample ID: MB 160-605215/1-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605215

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.03007	U	0.106	0.106	1.00	0.240	pCi/L	03/28/23 09:34	04/19/23 09:48	1

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: MB 160-605215/1-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605215

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	568[illegible]3		30 - 110	032[illegible]42[illegible]3 05936	062[illegible]152[illegible]3 05964	1

Lab Sample ID: LCS 160-605215/2-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605215

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-226			11.3	9.998		1.22	1.00	0.220	pCi/L	88	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	568[illegible]4		30 - 110

Lab Sample ID: LCSD 160-605215/3-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 605215

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.18		1.34	1.00	0.181	pCi/L	99	75 - 125	0.46	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	518[illegible]0		30 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-604896/1-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604896

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1366	U	0.289	0.289	1.00	0.593	pCi/L	03/24/23 10:45	04/14/23 18:14	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	478[illegible]1		30 - 110	032[illegible]62[illegible]3 1095[illegible]6.	062[illegible]162[illegible]3 14916	1
Y Carrier	458[illegible]0		30 - 110	032[illegible]62[illegible]3 1095[illegible]6.	062[illegible]162[illegible]3 14916	1

Lab Sample ID: LCS 160-604896/2-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604896

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.03	8.551		1.25	1.00	0.600	pCi/L	106	75 - 125		

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-604896/2-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604896

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	508		30 - 110
Y Carrier	458		30 - 110

Lab Sample ID: LCSD 160-604896/3-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 604896

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.03	8.159		1.27	1.00	0.773	pCi/L	102	75 - 125	0.16	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	460		30 - 110
Y Carrier	458		30 - 110

Lab Sample ID: MB 160-605216/1-A
Matrix: Water
Analysis Batch: 607902

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605216

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4303	U	0.335	0.337	1.00	0.514	pCi/L	03/28/23 09:54	04/18/23 12:06	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	568		30 - 110	03/28/23 09:54	04/18/23 12:06	1
Y Carrier	758		30 - 110	03/28/23 09:54	04/18/23 12:06	1

Lab Sample ID: LCS 160-605216/2-A
Matrix: Water
Analysis Batch: 607905

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605216

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.02	6.901		1.03	1.00	0.456	pCi/L	86	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	568		30 - 110
Y Carrier	418		30 - 110

Lab Sample ID: LCSD 160-605216/3-A
Matrix: Water
Analysis Batch: 607905

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 605216

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.02	6.127		0.972	1.00	0.531	pCi/L	76	75 - 125	0.39	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-605216/3-A
Matrix: Water
Analysis Batch: 607905

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 605216

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	5180		30 - 110
Y Carrier	4087		30 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-605090/1-A
Matrix: Water
Analysis Batch: 606669

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605090

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.09802	U	0.194	0.194	3.00	0.333	pCi/L	03/27/23 13:47	04/10/23 16:12	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	4380		30 - 110	032723 13957	062102 3 1: 91/	1
Y Carrier	7083		30 - 110	032723 13957	062102 3 1: 91/	1

Lab Sample ID: LCS 160-605090/2-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605090

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.184		0.800	3.00	0.317	pCi/L	98	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	4384		30 - 110
Y Carrier	7. 85		30 - 110

Lab Sample ID: MB 160-606565/1-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606565

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1675	U	0.204	0.204	3.00	0.337	pCi/L	04/07/23 11:12	04/17/23 19:03	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	4: 8		30 - 110	062072 3 1191/	062172 3 15903	1
Y Carrier	4185		30 - 110	062072 3 1191/	062172 3 15903	1

Lab Sample ID: LCS 160-606565/2-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.570		0.853	3.00	0.305	pCi/L	103	75 - 125		

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	4: 83		30 - 110
Y Carrier	7780		30 - 110

Lab Sample ID: LCSD 160-606565/3-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.34	7.501		0.887	3.00	0.401	pCi/L	102	75 - 125	0.04	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	4. 81		30 - 110
Y Carrier	: 585		30 - 110

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-606188/1-A
Matrix: Water
Analysis Batch: 606654

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606188

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	63.06	U	138	138	500	240	pCi/L	04/05/23 13:01	04/06/23 11:02	1

Lab Sample ID: LCS 160-606188/2-A
Matrix: Water
Analysis Batch: 606654

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606188

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2090	1960		355	500	247	pCi/L	94	75 - 125		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605729/1-A
Matrix: Water
Analysis Batch: 605912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605729

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1686	U	0.206	0.207	1.00	0.300	pCi/L	03/30/23 16:34	04/03/23 20:56	1

Lab Sample ID: LCS 160-605729/2-A
Matrix: Water
Analysis Batch: 605927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605729

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.57		1.98	1.00	0.356	pCi/L	107	75 - 125		
Uranium-238			13.0	13.66		1.99	1.00	0.311	pCi/L	105	75 - 125		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-605729/2-A
Matrix: Water
Analysis Batch: 605927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605729

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-/ 3/	*348*		*30 - 110*

Lab Sample ID: MB 160-606930/1-A
Matrix: Water
Analysis Batch: 607234

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606930

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.09977	U	0.1021	0.1023	1.00	0.128	pCi/L	04/11/23 15:09	04/13/23 16:11	1

Lab Sample ID: LCS 160-606930/2-A
Matrix: Water
Analysis Batch: 607236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606930

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.83		1.51	1.00	0.123	pCi/L	101	75 - 125		
Uranium-238			13.0	14.23		1.63	1.00	0.0649	pCi/L	109	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-/ 3/	*508*		*30 - 110*

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Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	Fill_Geo-0	
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Filtration Batch: 604832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	Filtration	
570-131264-1	EPBBC_20230315	Dissolved	Water	Filtration	
570-131264-1	EPBBC_20230315	Dissolved	Water	Filtration	

Prep Batch: 604894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	PrecSep-21	
MB 160-604894/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-604894/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-604894/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 604896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	PrecSep_0	
MB 160-604896/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-604896/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-604896/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 605090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	PrecSep-7	
MB 160-605090/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-605090/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 605215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	PrecSep-21	604832
MB 160-605215/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-605215/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-605215/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 605216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	PrecSep_0	604832
MB 160-605216/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-605216/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-605216/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	Fill_Geo-0	604832
MB 160-605283/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605283/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Rad

Prep Batch: 605729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	ExtChrom	604832
MB 160-605729/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605729/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	LSC_Dist_Susp	
MB 160-606188/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-606188/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 606565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	PrecSep-7	604832
MB 160-606565/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-606565/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-606565/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 606930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Total/NA	Water	ExtChrom	
MB 160-606930/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-606930/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131264-1	EPBBC_20230315	Dissolved	Water	Evaporation	604832
570-131264-1	EPBBC_20230315	Total/NA	Water	Evaporation	
MB 160-606931/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606931/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606931/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-8

Client Sample ID: EPBBC_20230315

Date Collected: 03/15/23 09:30
Date Received: 03/15/23 17:35

Lab Sample ID: 570-131264-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	Evaporation			200.01 mL	1.0 g	606931	04/11/23 15:16	MST	EET SL
Dissolved	Analysis	900.0		1			607424	04/14/23 05:22	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			118.10 mL	1.0 g	606931	04/11/23 15:16	MST	EET SL
Total/NA	Analysis	900.0		1			607424	04/14/23 05:22	SCB	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Dissolved	Analysis	901.1		1			607192	04/12/23 12:00	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Total/NA	Analysis	901.1		1			605605	03/30/23 09:40	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	PrecSep-21			749.69 mL	1.0 g	605215	03/28/23 09:34	DJP	EET SL
Dissolved	Analysis	903.0		1			608038	04/19/23 09:53	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-21			500.02 mL	1.0 g	604894	03/24/23 10:26	DJP	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	607902	04/18/23 12:28	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	PrecSep_0			749.69 mL	1.0 g	605216	03/28/23 09:54	DJP	EET SL
Dissolved	Analysis	904.0		1			607905	04/18/23 12:13	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep_0			500.02 mL	1.0 g	604896	03/24/23 10:45	DJP	EET SL
Total/NA	Analysis	904.0		1	1.0 mL	1.0 mL	607421	04/14/23 18:18	SCB	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	PrecSep-7			504.51 mL	1.0 g	606565	04/07/23 11:12	DJP	EET SL
Dissolved	Analysis	905		1			607842	04/17/23 19:07	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			250.96 mL	1.0 g	605090	03/27/23 13:47	DJP	EET SL
Total/NA	Analysis	905		1			606668	04/10/23 16:38	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			95.03 mL	1.0 g	606188	04/05/23 13:01	SEH	EET SL
Total/NA	Analysis	906.0		1			606654	04/06/23 14:26	REV	EET SL
	Instrument ID: LSCTEAL									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	ExtChrom			301.8 mL	1.0 mL	605729	03/30/23 16:34	CMM	EET SL
Dissolved	Analysis	A-01-R		1			605989	04/03/23 20:58	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			99.72 mL	1.0 mL	606930	04/11/23 15:09	MAL	EET SL
Total/NA	Analysis	A-01-R		1			607395	04/13/23 16:13	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-8

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-121948-P

j ro/ectSBite: goeinF BBLRIBMA and gs j - f Np

Laboratory: Eurofins St. Louis

All accreditationkSerti(icationk held by thik laboratory are likted. f ot all accreditationkSerti(icationk are aUUicable to thik reUort.

Authority	Program	Identification Number	Expiration Date
AlakTa)6 BE3	Btate	90-001	05-04-95
Af Ag	DeUt. o(De(enke NRAj	R9205	08-04-95
Af Ag	DeUt. o(NnerFy	R9205.01	08-04-95
Af Ag	IBOSNC 17095	R9205	08-04-95
Arizona	Btate	AZ0P12	19-0P-92
Cali(ornia	Rok AnFelek County Banitation Diktrictk	1095*	04-20-99 m
Cali(ornia	Btate	9PP4	04-20-92
LIorida	f NRAj	NP74P*	04-20-92
HI - MadChew MecoFnition	Btate	nSa	04-20-92
Illinoik	f NRAj	900092	11-20-92
IoKa	Btate	272	19-01-98
Wankak	f NRAj	N-10924	10-21-92
WentucTy)Dp 3	Btate	WY* 0195	19-21-92
WentucTy)p p 3	Btate	WY* 0195)j erwit WY000808* 3	19-21-92
Rouikiana)All3	f NRAj	080P0	04-20-92
Rouikiana)Dp 3	Btate	RA011	19-21-92
s aryland	Btate	210	0* -20-92
s I - MadChew MecoFnition	Btate	* 005	04-20-92
s ikkouri	Btate	7P0	04-20-95
f evada	Btate	s O000589090-1	07-21-92
f eK Jerkey	f NRAj	s O009	04-20-92
f eK YorT	f NRAj	11414	02-21-98
f orth Carolina)Dp 3	Btate	9* 700	07-21-92
f orth DaTota	Btate	M-907	04-20-92
OTlahowa	f NRAj	* * * 7	0P-21-92
OreFon	f NRAj	8157	0* -01-92
j ennkylvania	f NRAj	4P-00580	09-9P-98
Bouth Carolina	Btate	P5009001	04-20-92
Eexak	f NRAj	E1087081* 2	07-21-92
6 B Likh & p ildli(e	6 B Lederal j roFrawk	05P88P	07-21-92
6 BDA	6 B Lederal j roFrawk	j 220-17-0009P	04-11-92
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VirFinia	f NRAj	10210	04-18-92
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Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-8

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-131264-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131264-1	EPBBC_20230315	Water	03/15/23 09:30	03/15/23 17:35

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210719.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131264-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/5/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230315-2 (570-131264-3)	3/15/23	09:30 Pacific		Water						X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	3/15/23 1604	EC	[signature] 03/15/23 1604		
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.9c TR269

4/19/2023

Loc: 570
131264

570-131264 Chain of Custody

Calscience

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Myra Sondrini	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230315	3/15/23	0930	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230315-1	3/15/23	0930	TB	WM	2	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #: EDOPJ6UK
Time of Readings: 0930
DO (mg/L): 10.19
pH: 7.51
Temp (°C): 50.1
TRC (mg/L): 0.00
Checked by:
Date/Time: 3-15-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:

Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	H&A	3-15-23 1335	EC	3/15/23 1335
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
[signature]	EC	3/15/23 1735	[signature] EC	3/15/23 17:35
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

3.1/3.1 2.8/2.8 2.3/2.3 SOIL

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/19/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMALIK	Date: 3-15-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Week Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Week Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Week Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E625.2) Week Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230315	3/15/23	0930	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230315-2	3/15/23	0930	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ____ Disposal by Lab ____ Archive for ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.:

Relinquished by:	Company:	Date/Time: 3-15-23 1335	Received:		Date/Time: 3/15/23 1335
Relinquished by:	Company: EC	Date/Time: 3/15/23 1735	Received: EC		Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

3.1/5.1 2.8/2.8 2.3/2.3 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210888.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131264-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/17/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBBC_20230315_20230314 (570-131264-1)	3/15/23	09:30 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	9	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) — Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by: — Date: — Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	FED EX	03/16/23 12:27	FEC	FED EX		
2	FED EX			Sierra Worthington	MAR 17 2023 0930	GMBX
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131264-8

Login Number: 131264
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131264-8

Login Number: 131264
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 03/17/23 11:28 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	Amber glass container received broken with no volume salvagable.
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131449-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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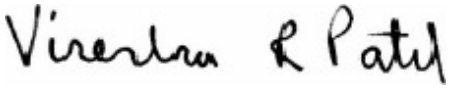
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Qualifiers

GC/MS mV O

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Sep i mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LR	LCS/LCSD recovery below method control limits
MB	Analyte present in the method blank

HPLC/IC

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier DesAriction
BU	Sample was prepped beyond the specified holding time
IB	CCV recovery above limit; analyte not detected
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chep istry

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

Glossary (Continued)

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131449-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131449-1

Comments
No additional comments.

Receipt
The samples were received on 2/13/6062 3:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 6 coolers at receipt time were 6.0º C and 6.2º C.

GC/MS VOA
Method 369.1: Insufficient sample volume was available to perform a matri(spi) e/matri(spi) e duplicate EMS/MSD_associated with analytical batch 570-216991. The laboratory control sample ELCS_was performed in duplicate ELCSD_to provide precision data for this batch.

Method x630B SIM: Insufficient sample volume was available to perform a matri(spi) e/matri(spi) e duplicate EMS/MSD_associated with analytical batch 570-216115.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/k lossary page.

GC/MS Semi VOA
Method 365.1 SIM: The continuing calibration verification ECC8_associated with batch 570-21910x recovered above the upper control limit for 9,3-Dinitro-6-methylphenol. The samples associated with this CC8 were non-detects for the affected analytesGtherefore, the data have been reported. The associated sample is impacted: ; PBMCV60620213 E570-121994-1_.

Method 365.1 SIM: The laboratory control sample ELCS_for preparation batch 570-21266x and analytical batch 570-21910x recovered outside acceptance limits for 1,6,9-Trichlorobenzene, 6,9-Dichlorophenol, 9,3-Dinitro-6-methylphenol, 6-Nitrophenol, bis E6-chloroisopropyl_ether, He(achloroethane, Nitrobenzene, Acenaphthylene and Fluorene. There was insufficient sample to perform a re-e(traction or re-analysisGtherefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/k lossary page.

HPLC/IC
Method 200.0: The following sample was diluted due to the nature of the sample matri(: ; PBMCV60620213 E570-121994-1_. ; levated reporting limits ERLs_are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/k lossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/k lossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/k lossary page.

Metals
Methods 600.x, 3060: The continuing calibration verification ECC8_associated with batch 570-212097 recovered above the upper control limit for Beryllium. The samples associated with this CC8 were non-detects for the affected analytesGtherefore, the data have been reported. The associated sample is impacted: ; PBMCV60620213 E570-121994-1_.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method:
; PBMCV60620213 E570-121994-1_. The sampleEs_was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method:

Job ID: 570-131449-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

; PBMCV60620213 E570-121994-1_. The sampleEs_was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/k lossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/k lossary page.

Organic Prep
Method 365: Insufficient sample volume was available to perform a matri(spi) e/matri(spi) e duplicate EMS/MSD_associated with preparation batch 570-21266x. The laboratory control sample ELCS_was performed in duplicate ELCSD_to provide precision data for this batch. Method 365.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/k lossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/k lossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Client Sample ID: EPBMC_20230316 — Lab Sample ID: 570-131449-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[b]fluoranthene	0.13	J,DX MB	0.19	0.11	ug/L	1		625.1 SIM	Total/NA
Hexavalent chromium	0.024	J,DX	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.027	J,DX	0.20	0.019	ug/L	1		218.6	Dissolved
Chloride	54		2.0	0.72	mg/L	2		300.0	Total/NA
Fluoride	0.48		0.20	0.092	mg/L	2		300.0	Total/NA
Nitrate as N	2.4		0.20	0.039	mg/L	2		300.0	Total/NA
Sulfate - DL	380		10	2.4	mg/L	10		300.0	Total/NA
Nitrate Nitrite as N	2.4		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	310	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	290	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Aluminum	4900		75	43	ug/L	5		200.8	Total Recoverable
Arsenic	2.3		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	92		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	8.6		2.0	0.14	ug/L	1		200.8	Total Recoverable
Cobalt	3.8		1.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	5.8		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	8800		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	180		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	6.9		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	3.6		1.0	0.12	ug/L	1		200.8	Total Recoverable
Zinc	25		20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	3.8		2.0	0.52	ug/L	1		200.8	Total Recoverable
Thallium	0.11	J,DX	1.0	0.11	ug/L	1		200.8	Total Recoverable
Arsenic	0.89	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	54	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.23	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Cobalt	0.29	J,DX BU	1.0	0.14	ug/L	1		200.8	Dissolved
Copper	1.1	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	12	J,DX BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	21	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	0.65	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	1.1	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	4.6	BU	2.0	0.52	ug/L	1		200.8	Dissolved
Hardness as calcium carbonate	580		7.1	0.50	mg/L	1		SM 2340B	Total Recoverable
Hardness as calcium carbonate	510		7.1	0.50	mg/L	1		SM 2340B	Dissolved
Cr (III)	0.0086	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Turbidity	130		0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	1300		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Specific Conductance	1300		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	1000		10	8.7	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample ID: EPBMC_20230316 (Continued)
Lab Sample ID: 570-131449-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	290		2.5	2.1	mg/L	1		SM 2540D	Total/NA
Settleable Solids	0.20		0.10	0.10	mL/L	1		SM 2540F	Total/NA
Carbon, Total Organic	8.9		2.0	1.1	mg/L	4		SM 5310D	Total/NA
Clay (less than 0.00391 mm)	16.37		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	4.78		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	66.82		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	83.19		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	12.03		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: TB-20230316-1
Lab Sample ID: 570-131449-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/17/23 14:34	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/17/23 14:34	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/17/23 14:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/17/23 14:34	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/17/23 14:34	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/17/23 14:34	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/17/23 14:34	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/17/23 14:34	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/17/23 14:34	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/17/23 14:34	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/17/23 14:34	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/17/23 14:34	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/17/23 14:34	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/17/23 14:34	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/17/23 14:34	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/17/23 14:34	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/17/23 14:34	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/17/23 14:34	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/17/23 14:34	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/17/23 14:34	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/17/23 14:34	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/17/23 14:34	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/17/23 14:34	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/17/23 14:34	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/17/23 14:34	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/17/23 14:34	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/17/23 14:34	1
2-Hexanone	ND		5.0	2.2	ug/L			03/17/23 14:34	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/17/23 14:34	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/17/23 14:34	1
Acetone	ND		20	16	ug/L			03/17/23 14:34	1
Acrolein	ND		5.0	4.6	ug/L			03/17/23 14:34	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/17/23 14:34	1
Benzene	ND		0.50	0.28	ug/L			03/17/23 14:34	1
Bromobenzene	ND		0.50	0.23	ug/L			03/17/23 14:34	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/17/23 14:34	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/17/23 14:34	1
Bromoform	ND		1.0	0.25	ug/L			03/17/23 14:34	1
Bromomethane	ND		0.50	0.22	ug/L			03/17/23 14:34	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/17/23 14:34	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/17/23 14:34	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/17/23 14:34	1
Chloroethane	ND		1.0	0.29	ug/L			03/17/23 14:34	1
Chloroform	ND		0.50	0.19	ug/L			03/17/23 14:34	1
Chloromethane	ND		0.50	0.30	ug/L			03/17/23 14:34	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/17/23 14:34	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/17/23 14:34	1
Cyclohexane	ND		2.0	0.79	ug/L			03/17/23 14:34	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/17/23 14:34	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.50	0.19	ug/L			03/17/23 14:34	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/17/23 14:34	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/17/23 14:34	1
Ethanol	ND		100	65	ug/L			03/17/23 14:34	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/17/23 14:34	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/17/23 14:34	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/17/23 14:34	1
Isopropanol	ND		250	120	ug/L			03/17/23 14:34	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/17/23 14:34	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/17/23 14:34	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/17/23 14:34	1
Naphthalene	ND		1.0	0.33	ug/L			03/17/23 14:34	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/17/23 14:34	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/17/23 14:34	1
o-Xylene	ND		0.50	0.15	ug/L			03/17/23 14:34	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/17/23 14:34	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/17/23 14:34	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/17/23 14:34	1
Styrene	ND		0.50	0.19	ug/L			03/17/23 14:34	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/17/23 14:34	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/17/23 14:34	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/17/23 14:34	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/17/23 14:34	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/17/23 14:34	1
Toluene	ND		0.50	0.23	ug/L			03/17/23 14:34	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/17/23 14:34	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/17/23 14:34	1
Trichloroethene	ND		0.50	0.17	ug/L			03/17/23 14:34	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/17/23 14:34	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/17/23 14:34	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/17/23 14:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*60 - 140*		*03/17/23 14:34*	*1*
4-Bromofluorobenzene (Surr)	*103*		*60 - 140*		*03/17/23 14:34*	*1*
Dibromofluoromethane (Surr)	*88*		*60 - 140*		*03/17/23 14:34*	*1*
Toluene-d8 (Surr)	*101*		*60 - 140*		*03/17/23 14:34*	*1*

Client Sample ID: TB-20230316-1
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/17/23 14:12	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/17/23 14:12	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/17/23 14:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/17/23 14:12	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/17/23 14:12	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/17/23 14:12	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/17/23 14:12	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/17/23 14:12	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-20230316-1
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/17/23 14:12	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/17/23 14:12	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/17/23 14:12	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/17/23 14:12	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/17/23 14:12	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/17/23 14:12	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/17/23 14:12	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/17/23 14:12	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/17/23 14:12	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/17/23 14:12	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/17/23 14:12	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/17/23 14:12	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/17/23 14:12	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/17/23 14:12	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/17/23 14:12	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/17/23 14:12	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/17/23 14:12	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/17/23 14:12	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/17/23 14:12	1
2-Hexanone	ND		5.0	2.2	ug/L			03/17/23 14:12	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/17/23 14:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/17/23 14:12	1
Acetone	ND		20	16	ug/L			03/17/23 14:12	1
Acrolein	ND		5.0	4.6	ug/L			03/17/23 14:12	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/17/23 14:12	1
Benzene	ND		0.50	0.28	ug/L			03/17/23 14:12	1
Bromobenzene	ND		0.50	0.23	ug/L			03/17/23 14:12	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/17/23 14:12	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/17/23 14:12	1
Bromoform	ND		1.0	0.25	ug/L			03/17/23 14:12	1
Bromomethane	ND		0.50	0.22	ug/L			03/17/23 14:12	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/17/23 14:12	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/17/23 14:12	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/17/23 14:12	1
Chloroethane	ND		1.0	0.29	ug/L			03/17/23 14:12	1
Chloroform	ND		0.50	0.19	ug/L			03/17/23 14:12	1
Chloromethane	ND		0.50	0.30	ug/L			03/17/23 14:12	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/17/23 14:12	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/17/23 14:12	1
Cyclohexane	ND		2.0	0.79	ug/L			03/17/23 14:12	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/17/23 14:12	1
Dibromomethane	ND		0.50	0.19	ug/L			03/17/23 14:12	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/17/23 14:12	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/17/23 14:12	1
Ethanol	ND		100	65	ug/L			03/17/23 14:12	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/17/23 14:12	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/17/23 14:12	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/17/23 14:12	1
Isopropanol	ND		250	120	ug/L			03/17/23 14:12	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-20230316-1
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		0.50	0.16	ug/L			03/17/23 14:12	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/17/23 14:12	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/17/23 14:12	1
Naphthalene	ND		1.0	0.33	ug/L			03/17/23 14:12	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/17/23 14:12	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/17/23 14:12	1
o-Xylene	ND		0.50	0.15	ug/L			03/17/23 14:12	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/17/23 14:12	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/17/23 14:12	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/17/23 14:12	1
Styrene	ND		0.50	0.19	ug/L			03/17/23 14:12	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/17/23 14:12	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/17/23 14:12	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/17/23 14:12	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/17/23 14:12	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/17/23 14:12	1
Toluene	ND		0.50	0.23	ug/L			03/17/23 14:12	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/17/23 14:12	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/17/23 14:12	1
Trichloroethene	ND		0.50	0.17	ug/L			03/17/23 14:12	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/17/23 14:12	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/17/23 14:12	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/17/23 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*60 - 140*		*03/17/23 14:12*	*1*
4-Bromofluorobenzene (Surr)	*107*		*60 - 140*		*03/17/23 14:12*	*1*
Dibromofluoromethane (Surr)	*93*		*60 - 140*		*03/17/23 14:12*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*03/17/23 14:12*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/16/23 21:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*94*		*67 - 133*		*03/16/23 21:11*	*1*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND	LR	0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:54	1
1,2-Dichlorobenzene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:54	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.19	0.088	ug/L		03/22/23 05:11	03/23/23 21:54	1
1,3-Dichlorobenzene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:54	1
1,4-Dichlorobenzene	ND		0.19	0.13	ug/L		03/22/23 05:11	03/23/23 21:54	1
2,4,6-Trichlorophenol	ND		0.97	0.13	ug/L		03/22/23 05:11	03/23/23 21:54	1
2,4-Dichlorophenol	ND	LR	0.97	0.13	ug/L		03/22/23 05:11	03/23/23 21:54	1
2,4-Dimethylphenol	ND		0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:54	1
2,4-Dinitrophenol	ND		4.9	4.2	ug/L		03/22/23 05:11	03/23/23 21:54	1
2,4-Dinitrotoluene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:54	1
2,6-Dinitrotoluene	ND		0.19	0.17	ug/L		03/22/23 05:11	03/23/23 21:54	1
2-Chloronaphthalene	ND	LR BA	0.19	0.14	ug/L		03/22/23 05:11	03/23/23 21:54	1
2-Chlorophenol	ND		0.19	0.093	ug/L		03/22/23 05:11	03/23/23 21:54	1
2-Nitrophenol	ND	LR	4.9	3.4	ug/L		03/22/23 05:11	03/23/23 21:54	1
3,3'-Dichlorobenzidine	ND		4.9	2.9	ug/L		03/22/23 05:11	03/23/23 21:54	1
4,6-Dinitro-2-methylphenol	ND	LR	4.9	4.4	ug/L		03/22/23 05:11	03/23/23 21:54	1
4-Bromophenyl phenyl ether	ND		0.19	0.097	ug/L		03/22/23 05:11	03/23/23 21:54	1
4-Chloro-3-methylphenol	ND		0.97	0.13	ug/L		03/22/23 05:11	03/23/23 21:54	1
4-Chlorophenyl phenyl ether	ND		0.19	0.16	ug/L		03/22/23 05:11	03/23/23 21:54	1
4-Nitrophenol	ND		4.9	3.3	ug/L		03/22/23 05:11	03/23/23 21:54	1
Acenaphthene	ND	LR	0.19	0.095	ug/L		03/22/23 05:11	03/23/23 21:54	1
Acenaphthylene	ND		0.19	0.13	ug/L		03/22/23 05:11	03/23/23 21:54	1
Anthracene	ND		0.19	0.082	ug/L		03/22/23 05:11	03/23/23 21:54	1
Benzidine	ND		4.9	2.6	ug/L		03/22/23 05:11	03/23/23 21:54	1
Benzo[a]anthracene	ND		0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:54	1
Benzo[a]pyrene	ND		0.19	0.15	ug/L		03/22/23 05:11	03/23/23 21:54	1
Benzo[b]fluoranthene	**0.13**	**J,DX MB**	0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:54	1
Benzo[g,h,i]perylene	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 21:54	1
Benzo[k]fluoranthene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:54	1
bis (2-chloroisopropyl) ether	ND	LR	0.19	0.13	ug/L		03/22/23 05:11	03/23/23 21:54	1
Bis(2-chloroethoxy)methane	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 21:54	1
Bis(2-chloroethyl)ether	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 21:54	1
Bis(2-ethylhexyl) phthalate	ND		4.9	3.5	ug/L		03/22/23 05:11	03/23/23 21:54	1
Butyl benzyl phthalate	ND		0.97	0.65	ug/L		03/22/23 05:11	03/23/23 21:54	1
Chrysene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:54	1
Dibenz(a,h)anthracene	ND		0.19	0.15	ug/L		03/22/23 05:11	03/23/23 21:54	1
Diethyl phthalate	ND		1.9	0.18	ug/L		03/22/23 05:11	03/23/23 21:54	1
Dimethyl phthalate	ND		1.9	0.095	ug/L		03/22/23 05:11	03/23/23 21:54	1
Di-n-butyl phthalate	ND		1.9	1.8	ug/L		03/22/23 05:11	03/23/23 21:54	1
Di-n-octyl phthalate	ND		2.9	0.52	ug/L		03/22/23 05:11	03/23/23 21:54	1
Fluoranthene	ND		0.19	0.098	ug/L		03/22/23 05:11	03/23/23 21:54	1
Fluorene	ND	LR	0.19	0.092	ug/L		03/22/23 05:11	03/23/23 21:54	1
Hexachlorobenzene	ND		0.19	0.13	ug/L		03/22/23 05:11	03/23/23 21:54	1
Hexachlorobutadiene	ND		0.19	0.15	ug/L		03/22/23 05:11	03/23/23 21:54	1
Hexachlorocyclopentadiene	ND		0.19	0.15	ug/L		03/22/23 05:11	03/23/23 21:54	1
Hexachloroethane	ND	LR	0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:54	1
Indeno[1,2,3-cd]pyrene	ND		0.19	0.12	ug/L		03/22/23 05:11	03/23/23 21:54	1
Isophorone	ND		0.19	0.096	ug/L		03/22/23 05:11	03/23/23 21:54	1
Naphthalene	ND		0.19	0.11	ug/L		03/22/23 05:11	03/23/23 21:54	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	ND	LR	0.19	0.14	ug/L		03/22/23 05:11	03/23/23 21:54	1
N-Nitrosodimethylamine	ND		0.19	0.18	ug/L		03/22/23 05:11	03/23/23 21:54	1
N-Nitrosodi-n-propylamine	ND		0.19	0.14	ug/L		03/22/23 05:11	03/23/23 21:54	1
N-Nitrosodiphenylamine	ND		0.19	0.10	ug/L		03/22/23 05:11	03/23/23 21:54	1
Pentachlorophenol	ND		0.97	0.82	ug/L		03/22/23 05:11	03/23/23 21:54	1
Phenanthrene	ND		0.19	0.16	ug/L		03/22/23 05:11	03/23/23 21:54	1
Phenol	ND		0.97	0.51	ug/L		03/22/23 05:11	03/23/23 21:54	1
Pyrene	ND		0.19	0.083	ug/L		03/22/23 05:11	03/23/23 21:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*103*		*28 - 127*	*03/22/23 05:11*	*03/23/23 21:54*	*1*
2-Fluorobiphenyl (Surr)	*91*		*31 - 120*	*03/22/23 05:11*	*03/23/23 21:54*	*1*
2-Fluorophenol	*53*		*17 - 120*	*03/22/23 05:11*	*03/23/23 21:54*	*1*
Nitrobenzene-d5	*99*		*27 - 120*	*03/22/23 05:11*	*03/23/23 21:54*	*1*
Phenol-d6 (Surr)	*35*		*10 - 120*	*03/22/23 05:11*	*03/23/23 21:54*	*1*
p-Terphenyl-d14 (Surr)	*90*		*45 - 120*	*03/22/23 05:11*	*03/23/23 21:54*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/23/23 18:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*122*		*20 - 144*		*03/23/23 18:47*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.049	0.035	mg/L		03/22/23 22:01	03/24/23 02:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*90*		*53 - 151*	*03/22/23 22:01*	*03/24/23 02:38*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.024	J,DX	0.20	0.019	ug/L			03/17/23 06:23	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.027	J,DX	0.20	0.019	ug/L			03/17/23 07:50	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**54**		2.0	0.72	mg/L			03/17/23 03:34	2
Nitrite as N	ND		0.20	0.086	mg/L			03/17/23 03:34	2
Fluoride	**0.48**		0.20	0.092	mg/L			03/17/23 03:34	2
Nitrate as N	**2.4**		0.20	0.039	mg/L			03/17/23 03:34	2

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: EPA 300.0 - Anions, Ion Chromatography - DL

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**380**		10	2.4	mg/L			03/17/23 03:52	10

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/17/23 23:57	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	2.4		0.10	0.020	mg/L			03/24/23 10:42	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	310	J,DX	500	3.5	ug/L		03/20/23 06:52	03/20/23 19:46	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	290	J,DX BU	500	3.5	ug/L			03/17/23 19:53	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**4900**		75	43	ug/L		03/20/23 07:23	03/20/23 11:25	5
Silver	ND		1.0	0.23	ug/L		03/20/23 07:23	03/20/23 10:38	1
Arsenic	**2.3**		1.0	0.16	ug/L		03/20/23 07:23	03/20/23 10:38	1
Barium	**92**		1.0	0.17	ug/L		03/20/23 07:23	03/20/23 10:38	1
Beryllium	ND	IB	0.50	0.26	ug/L		03/20/23 07:23	03/20/23 10:38	1
Cadmium	ND		1.0	0.13	ug/L		03/20/23 07:23	03/20/23 10:38	1
Chromium	**8.6**		2.0	0.14	ug/L		03/20/23 07:23	03/20/23 10:38	1
Cobalt	**3.8**		1.0	0.14	ug/L		03/20/23 07:23	03/20/23 10:38	1
Copper	**5.8**		2.0	0.32	ug/L		03/20/23 07:23	03/20/23 10:38	1
Iron	**8800**		20	3.7	ug/L		03/20/23 07:23	03/20/23 10:38	1
Manganese	**180**		1.0	0.41	ug/L		03/20/23 07:23	03/20/23 10:38	1
Nickel	**6.9**		2.0	0.17	ug/L		03/20/23 07:23	03/20/23 10:38	1
Lead	**3.6**		1.0	0.12	ug/L		03/20/23 07:23	03/20/23 10:38	1
Antimony	ND		2.0	0.36	ug/L		03/20/23 07:23	03/20/23 10:38	1
Zinc	**25**		20	2.8	ug/L		03/20/23 07:23	03/20/23 10:38	1
Selenium	**3.8**		2.0	0.52	ug/L		03/20/23 07:23	03/20/23 10:38	1
Thallium	**0.11**	**J,DX**	1.0	0.11	ug/L		03/20/23 07:23	03/20/23 10:38	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	BU	15	8.6	ug/L			03/17/23 11:55	1
Silver	ND	BU	1.0	0.23	ug/L			03/17/23 11:55	1
Arsenic	**0.89**	**J,DX BU**	1.0	0.16	ug/L			03/17/23 11:55	1
Barium	**54**	**BU**	1.0	0.17	ug/L			03/17/23 11:55	1
Beryllium	ND	BU	0.50	0.26	ug/L			03/17/23 11:55	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/17/23 11:55	1
Chromium	**0.23**	**J,DX BU**	2.0	0.14	ug/L			03/17/23 11:55	1
Cobalt	**0.29**	**J,DX BU**	1.0	0.14	ug/L			03/17/23 11:55	1
Copper	**1.1**	**J,DX BU**	2.0	0.32	ug/L			03/17/23 11:55	1
Iron	**12**	**J,DX BU**	20	3.7	ug/L			03/17/23 11:55	1
Manganese	**21**	**BU**	1.0	0.41	ug/L			03/17/23 11:55	1
Nickel	**0.65**	**J,DX BU**	2.0	0.17	ug/L			03/17/23 11:55	1
Thallium	ND	BU	1.0	0.11	ug/L			03/17/23 11:55	1
Lead	ND	BU	1.0	0.12	ug/L			03/17/23 11:55	1
Antimony	**1.1**	**J,DX BU**	2.0	0.36	ug/L			03/17/23 11:55	1
Zinc	ND	BU	20	2.8	ug/L			03/17/23 11:55	1
Selenium	**4.6**	**BU**	2.0	0.52	ug/L			03/17/23 11:55	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	580		7.1	0.50	mg/L			03/22/23 17:05	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	510		7.1	0.50	mg/L			03/21/23 17:28	1

General Chemistry

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		0.99	0.51	mg/L		03/20/23 13:49	03/21/23 12:10	1
Cr (III) (EPA 218.6 CR3)	**0.0086**	**J,DX**	0.050	0.0030	mg/L			03/24/23 12:34	1
Ammonia (EPA 350.1)	ND		0.075	0.032	mg/L		03/27/23 14:02	03/27/23 16:20	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/27/23 14:30	1
Turbidity (SM 2130B)	**130**		0.05	0.05	NTU			03/17/23 13:41	1
Total Dissolved Solids (SM 2540C)	**1000**		10	8.7	mg/L			03/20/23 21:08	1
Total Suspended Solids (SM 2540D)	**290**		2.5	2.1	mg/L			03/22/23 14:52	1
Biochemical Oxygen Demand (SM 5210B)	ND		2.0	1.0	mg/L		03/17/23 12:09	03/17/23 12:38	1
Carbon, Total Organic (SM 5310D)	**8.9**		2.0	1.1	mg/L			03/31/23 10:52	4
MBAS (SM 5540C)	ND		0.20	0.050	mg/L		03/16/23 19:30	03/16/23 20:55	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**1300**		1.0	1.0	umhos/cm			03/22/23 20:21	1
Specific Conductance (SM 2510B)	**1300**		1.0	1.0	umhos/cm			03/22/23 20:21	1
Settleable Solids (SM 2540F)	**0.20**		0.10	0.10	mL/L			03/17/23 16:33	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

General Chemistry - Dissolved

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			03/24/23 12:34	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**16.37**		0.01	0.01	%			03/21/23 20:17	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/21/23 20:17	1
Fine Sand (0.125 to 0.25mm)	**4.78**		0.01	0.01	%			03/21/23 20:17	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/21/23 20:17	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/21/23 20:17	1
Silt (0.00391 to 0.0625mm)	**66.82**		0.01	0.01	%			03/21/23 20:17	1
Total Silt and Clay (0 to 0.0626mm)	**83.19**		0.01	0.01	%			03/21/23 20:17	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/21/23 20:17	1
Very Fine Sand (0.0625 to 0.125 mm)	**12.03**		0.01	0.01	%			03/21/23 20:17	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

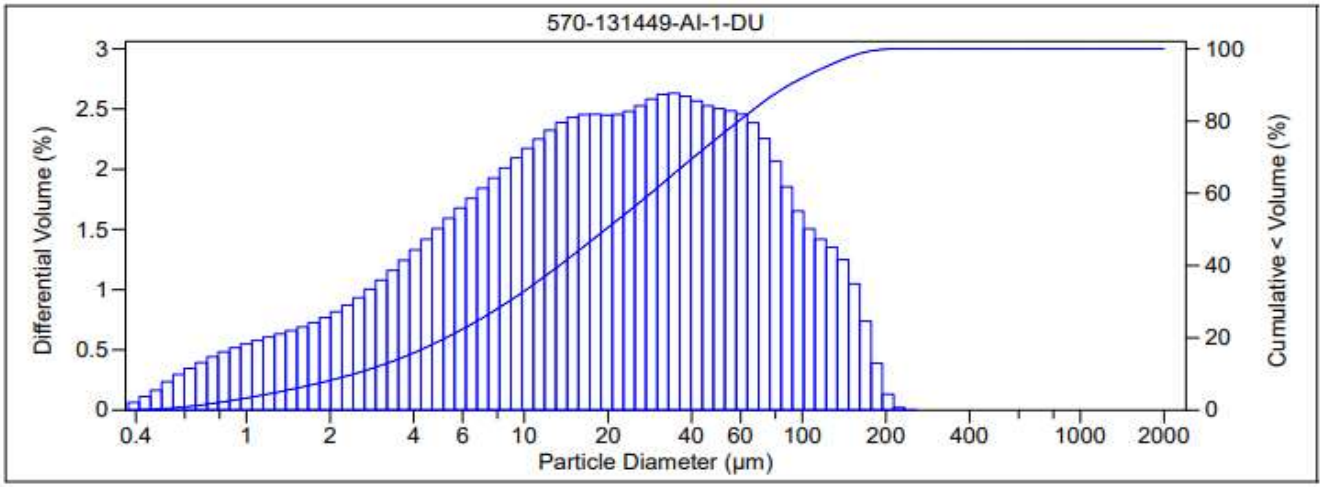
Haley & Aldrich, Inc.

Date Sampled:	03/16/23
Date Received:	03/16/23
Work Order No:	570-131449
Date Analyzed:	03/20/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP - NEW

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBMC_20230316		Silt	0.035

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	4.58	13.90	65.97	15.55	81.52



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

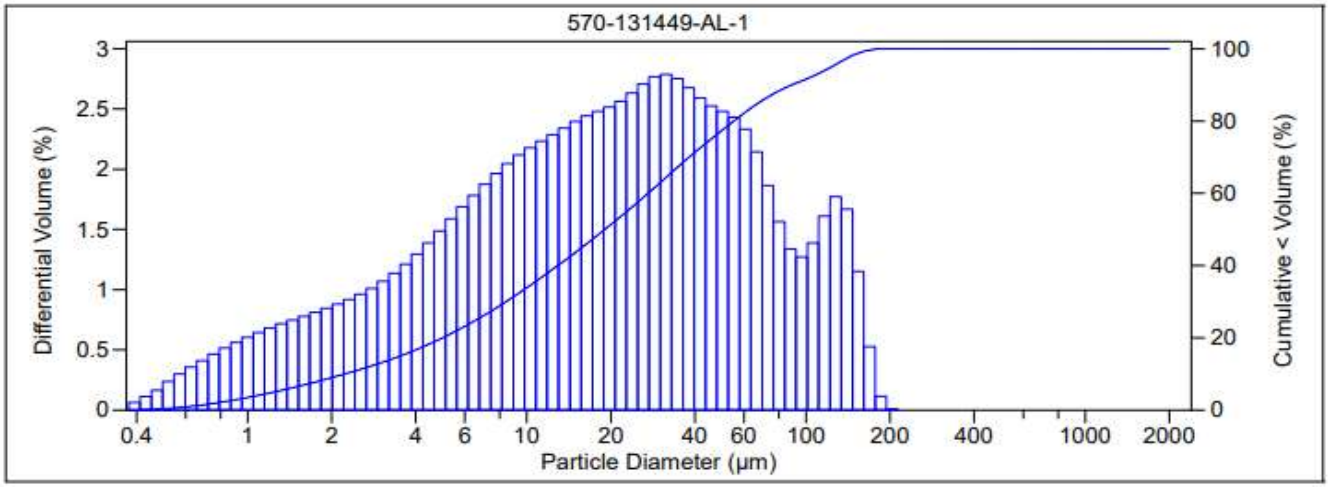
Haley & Aldrich, Inc.

Date Sampled:	03/16/23
Date Received:	03/16/23
Work Order No:	570-131449
Date Analyzed:	03/20/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP - NEW

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBMC_20230316		Silt	0.033

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	4.78	12.03	66.82	16.37	83.19



V 3.0

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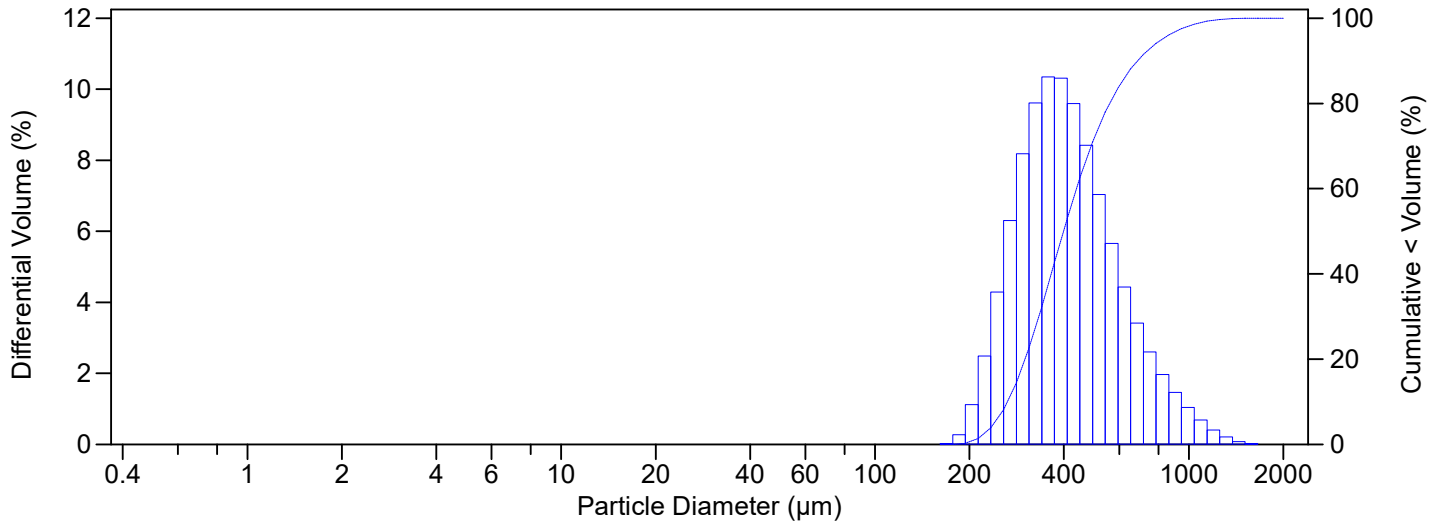
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	6		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.79%		
LS 13 320	Aqueous Liquid Module		
Start time:	21:41 20 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	11%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_20 Mar 2023_21.42.12.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	444.8 µm	S.D.:	184.5 µm
Median:	399.2 µm	Variance:	34049 µm^2
Mean/Median ratio:	1.114	Skewness:	1.622 Right skewed
Mode:	356.1 µm	Kurtosis:	3.513 Leptokurtic

d_{10}: 264.2 µm d_{50}: 399.2 µm d_{90}: 688.5 µm

Folk and Ward Statistics (Phi)

Mean:	1.29	Median:	1.32	Deviation:	0.53
Skewness:	-0.14	Kurtosis:	1.01		

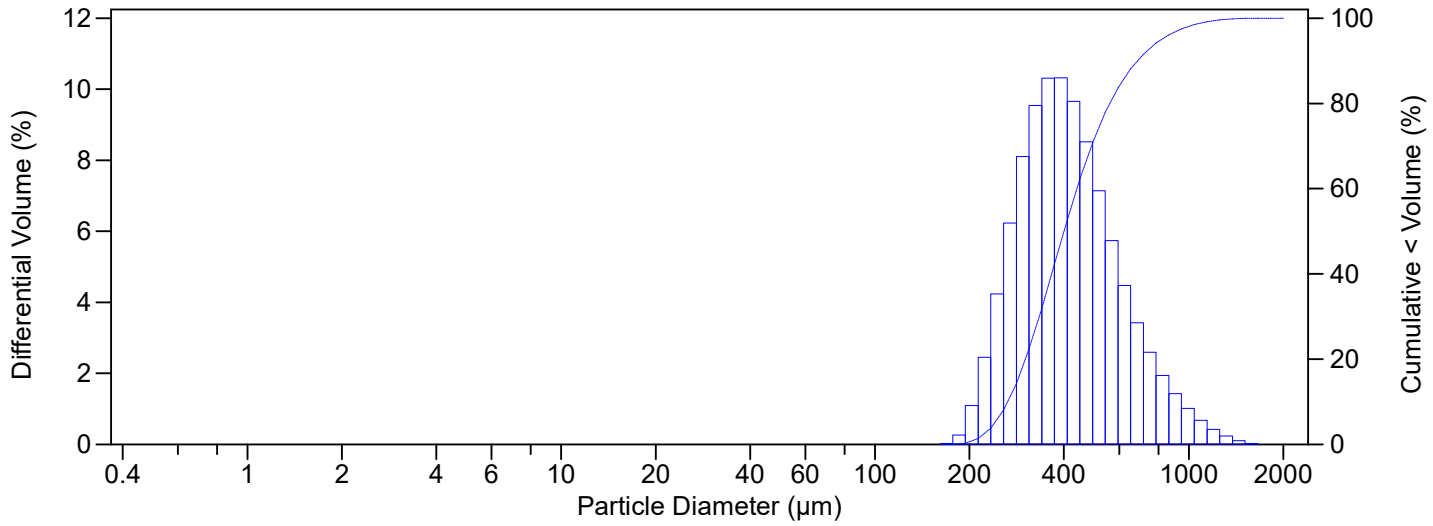
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
239.9 µm	287.1 µm	316.9 µm	364.7 µm	399.2 µm	521.2 µm	599.2 µm	821.1 µm

Particle Diameter µm	STD SAND _20 Mar 2023_21.42 .12.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.89
250	65.0
500	26.2
1000	1.86
2000	

STD SAND_20 Mar 2023_21.42.12.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.41
0.412	0	22.73	0	1255	0.21
0.452	0	24.95	0	1377	0.083
0.496	0	27.39	0	1512	0.018
0.545	0	30.07	0	1660	0.00086
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.017		
3.206	0	176.9	0.28		
3.519	0	194.2	1.12		
3.863	0	213.2	2.49		
4.241	0	234.1	4.29		
4.656	0	256.9	6.31		
5.111	0	282.1	8.19		
5.611	0	309.6	9.61		
6.159	0	339.9	10.3		
6.761	0	373.1	10.3		
7.422	0	409.6	9.60		
8.148	0	449.7	8.43		
8.944	0	493.6	7.04		
9.819	0	541.9	5.66		
10.78	0	594.9	4.43		
11.83	0	653.0	3.41		
12.99	0	716.9	2.61		
14.26	0	786.9	1.97		
15.65	0	863.9	1.46		
17.18	0	948.3	1.04		
18.86	0	1041	0.69		

File name:	C:\LS13320\STD SAND_20 Mar 2023_22.16.03.$ls		
	STD SAND_20 Mar 2023_22.16.03.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	8		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.72%		
LS 13 320	Aqueous Liquid Module		
Start time:	22:14 20 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_20 Mar 2023_22.16.03.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	445.9 µm	S.D.:	185.6 µm
Median:	400.5 µm	Variance:	34435 µm^2
Mean/Median ratio:	1.113	Skewness:	1.668 Right skewed
Mode:	391.0 µm	Kurtosis:	3.830 Leptokurtic

d_{10}: 264.7 µm d_{50}: 400.5 µm d_{90}: 687.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.29	Median:	1.32	Deviation:	0.53
Skewness:	-0.13	Kurtosis:	1.01		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
240.4 µm	287.8 µm	317.8 µm	365.8 µm	400.5 µm	522.2 µm	599.4 µm	820.8 µm

Particle Diameter µm	STD SAND _20 Mar 2023_22.16 .03.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.78
250	64.9
500	26.4
1000	1.92
2000	

STD SAND_20 Mar 2023_22.16.03.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.42
0.412	0	22.73	0	1255	0.24
0.452	0	24.95	0	1377	0.11
0.496	0	27.39	0	1512	0.028
0.545	0	30.07	0	1660	0.0017
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.016		
3.206	0	176.9	0.27		
3.519	0	194.2	1.10		
3.863	0	213.2	2.45		
4.241	0	234.1	4.24		
4.656	0	256.9	6.23		
5.111	0	282.1	8.11		
5.611	0	309.6	9.54		
6.159	0	339.9	10.3		
6.761	0	373.1	10.3		
7.422	0	409.6	9.66		
8.148	0	449.7	8.52		
8.944	0	493.6	7.14		
9.819	0	541.9	5.74		
10.78	0	594.9	4.48		
11.83	0	653.0	3.43		
12.99	0	716.9	2.59		
14.26	0	786.9	1.94		
15.65	0	863.9	1.43		
17.18	0	948.3	1.01		
18.86	0	1041	0.68		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-131449-1	EPBMC_20230316	97	103	88	101
570-131449-2	TB-20230316-1	97	107	93	100
LCS 570-312441/1004	Lab Control Sample	98	107	91	100
LCSD 570-312441/5	Lab Control Sample Dup	92	103	89	98
MB 570-312441/7	Method Blank	93	103	88	102

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		14DCBTN
Lab Sample ID	Client Sample ID	(67-133)
570-131449-1	EPBMC_20230316	94
LCS 570-312115/4	Lab Control Sample	89
LCSD 570-312115/5	Lab Control Sample Dup	99
MB 570-312115/7	Method Blank	97

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-131449-1	EPBMC_20230316	103	91	53	99	35	90
LCS 570-313228/2-A	Lab Control Sample	56	54	35	53	26	91
LCSD 570-313228/3-A	Lab Control Sample Dup	68	69	42	55	30	97
MB 570-313228/1-A	Method Blank	62	49	33	56	22	76

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(20-144)
570-131449-1	EPBMC_20230316	122

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**BFB1 (20-144)**
LCS 570-314097/3	Lab Control Sample	120
LCSD 570-314097/4	Lab Control Sample Dup	120
MB 570-314097/5	Method Blank	119

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**OTCSN1 (53-151)**
570-131449-1	EPBMC_20230316	90
LCS 570-313977/2-A	Lab Control Sample	93
LCSD 570-313977/3-A	Lab Control Sample Dup	100
MB 570-313977/1-A	Method Blank	93

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-312441/7
Matrix: Water
Analysis Batch: 312441

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/17/23 13:50	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/17/23 13:50	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/17/23 13:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/17/23 13:50	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/17/23 13:50	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/17/23 13:50	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/17/23 13:50	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/17/23 13:50	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/17/23 13:50	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/17/23 13:50	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/17/23 13:50	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/17/23 13:50	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/17/23 13:50	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/17/23 13:50	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/17/23 13:50	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/17/23 13:50	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/17/23 13:50	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/17/23 13:50	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/17/23 13:50	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/17/23 13:50	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/17/23 13:50	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/17/23 13:50	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/17/23 13:50	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/17/23 13:50	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/17/23 13:50	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/17/23 13:50	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/17/23 13:50	1
2-Hexanone	ND		5.0	2.2	ug/L			03/17/23 13:50	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/17/23 13:50	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/17/23 13:50	1
Acetone	ND		20	16	ug/L			03/17/23 13:50	1
Acrolein	ND		5.0	4.6	ug/L			03/17/23 13:50	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/17/23 13:50	1
Benzene	ND		0.50	0.28	ug/L			03/17/23 13:50	1
Bromobenzene	ND		0.50	0.23	ug/L			03/17/23 13:50	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/17/23 13:50	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/17/23 13:50	1
Bromoform	ND		1.0	0.25	ug/L			03/17/23 13:50	1
Bromomethane	ND		0.50	0.22	ug/L			03/17/23 13:50	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/17/23 13:50	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/17/23 13:50	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/17/23 13:50	1
Chloroethane	ND		1.0	0.29	ug/L			03/17/23 13:50	1
Chloroform	ND		0.50	0.19	ug/L			03/17/23 13:50	1
Chloromethane	ND		0.50	0.30	ug/L			03/17/23 13:50	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/17/23 13:50	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/17/23 13:50	1
Cyclohexane	ND		2.0	0.79	ug/L			03/17/23 13:50	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-312441/7
Matrix: Water
Analysis Batch: 312441

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.15	ug/L			03/17/23 13:50	1
Dibromomethane	ND		0.50	0.19	ug/L			03/17/23 13:50	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/17/23 13:50	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/17/23 13:50	1
Ethanol	ND		100	65	ug/L			03/17/23 13:50	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/17/23 13:50	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/17/23 13:50	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/17/23 13:50	1
Isopropanol	ND		250	120	ug/L			03/17/23 13:50	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/17/23 13:50	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/17/23 13:50	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/17/23 13:50	1
Naphthalene	ND		1.0	0.33	ug/L			03/17/23 13:50	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/17/23 13:50	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/17/23 13:50	1
o-Xylene	ND		0.50	0.15	ug/L			03/17/23 13:50	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/17/23 13:50	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/17/23 13:50	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/17/23 13:50	1
Styrene	ND		0.50	0.19	ug/L			03/17/23 13:50	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/17/23 13:50	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/17/23 13:50	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/17/23 13:50	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/17/23 13:50	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/17/23 13:50	1
Toluene	ND		0.50	0.23	ug/L			03/17/23 13:50	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/17/23 13:50	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/17/23 13:50	1
Trichloroethene	ND		0.50	0.17	ug/L			03/17/23 13:50	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/17/23 13:50	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/17/23 13:50	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/17/23 13:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*60 - 140*		*03/17/23 13:50*	*1*
4-Bromofluorobenzene (Surr)	*103*		*60 - 140*		*03/17/23 13:50*	*1*
Dibromofluoromethane (Surr)	*88*		*60 - 140*		*03/17/23 13:50*	*1*
Toluene-d8 (Surr)	*102*		*60 - 140*		*03/17/23 13:50*	*1*

Lab Sample ID: LCS 570-312441/1004
Matrix: Water
Analysis Batch: 312441

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.7		ug/L		107	60 - 140
1,1,1-Trichloroethane	10.0	10.5		ug/L		105	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.33		ug/L		93	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.33		ug/L		93	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-312441/1004
Matrix: Water
Analysis Batch: 312441

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	10.0	10.6		ug/L		106	70 - 130
1,1-Dichloroethane	10.0	11.0		ug/L		110	70 - 130
1,1-Dichloroethene	10.0	9.70		ug/L		97	50 - 150
1,1-Dichloropropene	10.0	10.1		ug/L		101	60 - 140
1,2,3-Trichlorobenzene	10.0	9.79		ug/L		98	60 - 140
1,2,3-Trichloropropane	10.0	10.1		ug/L		101	60 - 140
1,2,4-Trichlorobenzene	10.0	9.47		ug/L		95	60 - 140
1,2,4-Trimethylbenzene	10.0	9.36		ug/L		94	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	8.85		ug/L		88	60 - 140
1,2-Dibromoethane	10.0	10.7		ug/L		107	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	8.67		ug/L		87	60 - 140
1,2-Dichlorobenzene	10.0	10.1		ug/L		101	65 - 135
1,2-Dichloroethane	10.0	10.1		ug/L		101	70 - 130
1,2-Dichloropropane	10.0	10.9		ug/L		109	35 - 165
1,3,5-Trimethylbenzene	10.0	11.1		ug/L		111	60 - 140
1,3-Dichlorobenzene	10.0	10.6		ug/L		106	70 - 130
1,3-Dichloropropane	10.0	10.9		ug/L		109	60 - 140
1,4-Dichlorobenzene	10.0	10.1		ug/L		101	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	9.33	J,DX	ug/L		93	60 - 140
2,2-Dichloropropane	10.0	11.2		ug/L		112	60 - 140
2-Butanone (MEK)	10.0	9.66		ug/L		97	60 - 140
2-Chloroethyl vinyl ether	10.0	7.29		ug/L		73	1 - 225
2-Chlorotoluene	10.0	11.2		ug/L		112	60 - 140
2-Hexanone	10.0	10.3		ug/L		103	60 - 140
4-Chlorotoluene	10.0	10.1		ug/L		101	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	10.2		ug/L		102	60 - 140
Acetone	10.0	ND		ug/L		98	60 - 140
Acrolein	20.0	16.5		ug/L		82	60 - 140
Acrylonitrile	10.0	11.2		ug/L		112	60 - 140
Benzene	10.0	10.3		ug/L		103	65 - 135
Bromobenzene	10.0	11.0		ug/L		110	60 - 140
Bromochloromethane	10.0	9.98		ug/L		100	60 - 140
Bromodichloromethane	10.0	10.3		ug/L		103	65 - 135
Bromoform	10.0	10.2		ug/L		102	70 - 130
Bromomethane	10.0	11.0		ug/L		110	15 - 185
Carbon disulfide	10.0	8.13		ug/L		81	60 - 140
Carbon tetrachloride	10.0	9.91		ug/L		99	70 - 130
Chlorobenzene	10.0	11.4		ug/L		114	65 - 135
Chloroethane	10.0	8.80		ug/L		88	40 - 160
Chloroform	10.0	9.78		ug/L		98	70 - 135
Chloromethane	10.0	10.7		ug/L		107	1 - 205
cis-1,2-Dichloroethene	10.0	9.61		ug/L		96	60 - 140
cis-1,3-Dichloropropene	10.0	9.81		ug/L		98	25 - 175
Cyclohexane	10.0	10.8		ug/L		108	60 - 140
Dibromochloromethane	10.0	10.2		ug/L		102	70 - 135
Dibromomethane	10.0	9.75		ug/L		98	60 - 140
Dichlorodifluoromethane	10.0	9.41		ug/L		94	60 - 140
Di-isopropyl ether (DIPE)	10.0	11.5		ug/L		115	60 - 140
Ethanol	100	121		ug/L		121	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-312441/1004
Matrix: Water
Analysis Batch: 312441

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	11.2		ug/L		112	60 - 140
Ethylbenzene	10.0	11.3		ug/L		113	60 - 140
Hexachloro-1,3-butadiene	10.0	11.0		ug/L		110	60 - 140
Isopropanol	50.0	ND		ug/L		80	60 - 140
Isopropylbenzene	10.0	11.8		ug/L		118	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	9.56		ug/L		96	60 - 140
Methylene Chloride	10.0	7.91		ug/L		79	60 - 140
Naphthalene	10.0	8.80		ug/L		88	60 - 140
n-Butylbenzene	10.0	10.3		ug/L		103	60 - 140
N-Propylbenzene	10.0	11.7		ug/L		117	60 - 140
o-Xylene	10.0	11.3		ug/L		113	60 - 140
m,p-Xylene	20.0	23.5		ug/L		118	60 - 140
p-Isopropyltoluene	10.0	9.81		ug/L		98	60 - 140
sec-Butylbenzene	10.0	10.5		ug/L		105	60 - 140
Styrene	10.0	11.3		ug/L		113	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	9.68		ug/L		97	60 - 140
tert-Butyl alcohol (TBA)	50.0	56.4		ug/L		113	60 - 140
tert-Butylbenzene	10.0	10.0		ug/L		100	60 - 140
Tetrachloroethene	10.0	12.2		ug/L		122	70 - 130
Tetrahydrofuran	10.0	8.70	J,DX	ug/L		87	60 - 140
Toluene	10.0	10.2		ug/L		102	70 - 130
trans-1,2-Dichloroethene	10.0	9.61		ug/L		96	70 - 130
trans-1,3-Dichloropropene	10.0	10.8		ug/L		108	50 - 150
Trichloroethene	10.0	10.1		ug/L		101	65 - 135
Trichlorofluoromethane	10.0	9.90		ug/L		99	50 - 150
Vinyl acetate	10.0	10.2		ug/L		102	60 - 140
Vinyl chloride	10.0	9.75		ug/L		97	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*98*		*60 - 140*
4-Bromofluorobenzene (Surr)	*107*		*60 - 140*
Dibromofluoromethane (Surr)	*91*		*60 - 140*
Toluene-d8 (Surr)	*100*		*60 - 140*

Lab Sample ID: LCSD 570-312441/5
Matrix: Water
Analysis Batch: 312441

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	9.95		ug/L		100	60 - 140	7	30
1,1,1-Trichloroethane	10.0	9.84		ug/L		98	70 - 130	7	36
1,1,2,2-Tetrachloroethane	10.0	8.88		ug/L		89	60 - 140	5	61
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.03		ug/L		90	60 - 140	3	30
1,1,2-Trichloroethane	10.0	9.84		ug/L		98	70 - 130	7	45
1,1-Dichloroethane	10.0	10.1		ug/L		101	70 - 130	8	40
1,1-Dichloroethene	10.0	9.30		ug/L		93	50 - 150	4	32
1,1-Dichloropropene	10.0	9.94		ug/L		99	60 - 140	2	30
1,2,3-Trichlorobenzene	10.0	9.87		ug/L		99	60 - 140	1	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-312441/5
Matrix: Water
Analysis Batch: 312441

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichloropropane			10.0	9.21		ug/L		92	60 - 140	9	30
1,2,4-Trichlorobenzene			10.0	10.1		ug/L		101	60 - 140	6	30
1,2,4-Trimethylbenzene			10.0	9.40		ug/L		94	60 - 140	0	30
1,2-Dibromo-3-Chloropropane			10.0	8.58		ug/L		86	60 - 140	3	30
1,2-Dibromoethane			10.0	9.61		ug/L		96	60 - 140	10	30
1,2-Dichloro-1,1,2-trifluoroethane			10.0	8.41		ug/L		84	60 - 140	3	30
1,2-Dichlorobenzene			10.0	10.3		ug/L		103	65 - 135	2	57
1,2-Dichloroethane			10.0	9.86		ug/L		99	70 - 130	2	49
1,2-Dichloropropane			10.0	10.4		ug/L		104	35 - 165	4	55
1,3,5-Trimethylbenzene			10.0	10.4		ug/L		104	60 - 140	6	30
1,3-Dichlorobenzene			10.0	10.4		ug/L		104	70 - 130	2	43
1,3-Dichloropropane			10.0	9.91		ug/L		99	60 - 140	10	30
1,4-Dichlorobenzene			10.0	10.4		ug/L		104	65 - 135	2	57
2,2-Dichloro-1,1,1-trifluoroethane			10.0	8.93	J,DX	ug/L		89	60 - 140	4	30
2,2-Dichloropropane			10.0	10.3		ug/L		103	60 - 140	8	30
2-Butanone (MEK)			10.0	8.71		ug/L		87	60 - 140	10	30
2-Chloroethyl vinyl ether			10.0	6.48		ug/L		65	1 - 225	12	71
2-Chlorotoluene			10.0	10.7		ug/L		107	60 - 140	4	30
2-Hexanone			10.0	8.24		ug/L		82	60 - 140	23	30
4-Chlorotoluene			10.0	10.3		ug/L		103	60 - 140	1	30
4-Methyl-2-pentanone (MIBK)			10.0	10.3		ug/L		103	60 - 140	1	30
Acetone			10.0	ND		ug/L		80	60 - 140	20	30
Acrolein			20.0	15.3		ug/L		76	60 - 140	8	60
Acrylonitrile			10.0	9.73		ug/L		97	60 - 140	14	60
Benzene			10.0	10.1		ug/L		101	65 - 135	2	61
Bromobenzene			10.0	10.5		ug/L		105	60 - 140	5	30
Bromochloromethane			10.0	9.47		ug/L		95	60 - 140	5	30
Bromodichloromethane			10.0	10.3		ug/L		103	65 - 135	0	56
Bromoform			10.0	10.0		ug/L		100	70 - 130	2	42
Bromomethane			10.0	10.6		ug/L		106	15 - 185	4	61
Carbon disulfide			10.0	8.08		ug/L		81	60 - 140	1	30
Carbon tetrachloride			10.0	9.53		ug/L		95	70 - 130	4	41
Chlorobenzene			10.0	10.7		ug/L		107	65 - 135	6	53
Chloroethane			10.0	8.86		ug/L		89	40 - 160	1	78
Chloroform			10.0	9.28		ug/L		93	70 - 135	5	30
Chloromethane			10.0	10.7		ug/L		107	1 - 205	0	60
cis-1,2-Dichloroethene			10.0	9.48		ug/L		95	60 - 140	1	30
cis-1,3-Dichloropropene			10.0	9.82		ug/L		98	25 - 175	0	58
Cyclohexane			10.0	10.3		ug/L		103	60 - 140	5	30
Dibromochloromethane			10.0	9.79		ug/L		98	70 - 135	4	50
Dibromomethane			10.0	9.09		ug/L		91	60 - 140	7	30
Dichlorodifluoromethane			10.0	9.23		ug/L		92	60 - 140	2	30
Di-isopropyl ether (DIPE)			10.0	11.0		ug/L		110	60 - 140	4	30
Ethanol			100	91.0	J,DX	ug/L		91	60 - 140	28	30
Ethyl-t-butyl ether (ETBE)			10.0	10.8		ug/L		108	60 - 140	4	30
Ethylbenzene			10.0	10.9		ug/L		109	60 - 140	3	63
Hexachloro-1,3-butadiene			10.0	10.5		ug/L		105	60 - 140	4	30
Isopropanol			50.0	ND		ug/L		64	60 - 140	22	30
Isopropylbenzene			10.0	10.9		ug/L		109	60 - 140	7	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-312441/5
Matrix: Water
Analysis Batch: 312441

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	9.03		ug/L		90	60 - 140	6	30
Methylene Chloride	10.0	8.89		ug/L		89	60 - 140	12	28
Naphthalene	10.0	9.22		ug/L		92	60 - 140	5	30
n-Butylbenzene	10.0	10.2		ug/L		102	60 - 140	1	30
N-Propylbenzene	10.0	11.1		ug/L		111	60 - 140	5	30
o-Xylene	10.0	10.6		ug/L		106	60 - 140	7	30
m,p-Xylene	20.0	22.6		ug/L		113	60 - 140	4	30
p-Isopropyltoluene	10.0	9.92		ug/L		99	60 - 140	1	30
sec-Butylbenzene	10.0	10.6		ug/L		106	60 - 140	1	30
Styrene	10.0	10.6		ug/L		106	60 - 140	6	30
Tert-amyl-methyl ether (TAME)	10.0	9.36		ug/L		94	60 - 140	3	30
tert-Butyl alcohol (TBA)	50.0	52.9		ug/L		106	60 - 140	6	30
tert-Butylbenzene	10.0	10.1		ug/L		101	60 - 140	0	30
Tetrachloroethene	10.0	11.3		ug/L		113	70 - 130	8	39
Tetrahydrofuran	10.0	9.00	J,DX	ug/L		90	60 - 140	3	30
Toluene	10.0	9.93		ug/L		99	70 - 130	2	41
trans-1,2-Dichloroethene	10.0	9.44		ug/L		94	70 - 130	2	45
trans-1,3-Dichloropropene	10.0	10.1		ug/L		101	50 - 150	7	86
Trichloroethene	10.0	9.83		ug/L		98	65 - 135	3	48
Trichlorofluoromethane	10.0	10.0		ug/L		100	50 - 150	1	84
Vinyl acetate	10.0	9.77		ug/L		98	60 - 140	4	30
Vinyl chloride	10.0	9.31		ug/L		93	5 - 195	5	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*60 - 140*
4-Bromofluorobenzene (Surr)	*103*		*60 - 140*
Dibromofluoromethane (Surr)	*89*		*60 - 140*
Toluene-d8 (Surr)	*98*		*60 - 140*

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-312115/7
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/16/23 11:57	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*97*		*67 - 133*		*03/16/23 11:57*	*1*

Lab Sample ID: LCS 570-312115/4
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	17.2		ug/L		86	75 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-312115/4
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dichlorobutane (Surr)	*89*		*67 - 133*

Lab Sample ID: LCSD 570-312115/5
Matrix: Water
Analysis Batch: 312115

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	18.6		ug/L		93	75 - 120	7	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Dichlorobutane (Surr)	*99*		*67 - 133*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-313228/1-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313228

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		03/21/23 06:13	03/23/23 12:27	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/21/23 06:13	03/23/23 12:27	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		03/21/23 06:13	03/23/23 12:27	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
2-Chlorophenol	ND		0.20	0.096	ug/L		03/21/23 06:13	03/23/23 12:27	1
2-Nitrophenol	ND		5.0	3.5	ug/L		03/21/23 06:13	03/23/23 12:27	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		03/21/23 06:13	03/23/23 12:27	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		03/21/23 06:13	03/23/23 12:27	1
4-Nitrophenol	ND		5.0	3.4	ug/L		03/21/23 06:13	03/23/23 12:27	1
Acenaphthene	ND		0.20	0.098	ug/L		03/21/23 06:13	03/23/23 12:27	1
Acenaphthylene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Anthracene	ND		0.20	0.084	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzidine	ND		5.0	2.7	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[b]fluoranthene	0.142	J,DX	0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-313228/1-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313228

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		03/21/23 06:13	03/23/23 12:27	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/21/23 06:13	03/23/23 12:27	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		03/21/23 06:13	03/23/23 12:27	1
Chrysene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		03/21/23 06:13	03/23/23 12:27	1
Diethyl phthalate	ND		2.0	0.18	ug/L		03/21/23 06:13	03/23/23 12:27	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		03/21/23 06:13	03/23/23 12:27	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		03/21/23 06:13	03/23/23 12:27	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		03/21/23 06:13	03/23/23 12:27	1
Fluoranthene	ND		0.20	0.10	ug/L		03/21/23 06:13	03/23/23 12:27	1
Fluorene	ND		0.20	0.095	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		03/21/23 06:13	03/23/23 12:27	1
Hexachloroethane	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		03/21/23 06:13	03/23/23 12:27	1
Isophorone	ND		0.20	0.099	ug/L		03/21/23 06:13	03/23/23 12:27	1
Naphthalene	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Nitrobenzene	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/21/23 06:13	03/23/23 12:27	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		03/21/23 06:13	03/23/23 12:27	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		03/21/23 06:13	03/23/23 12:27	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/21/23 06:13	03/23/23 12:27	1
Phenanthrene	ND		0.20	0.16	ug/L		03/21/23 06:13	03/23/23 12:27	1
Phenol	ND		1.0	0.52	ug/L		03/21/23 06:13	03/23/23 12:27	1
Pyrene	ND		0.20	0.086	ug/L		03/21/23 06:13	03/23/23 12:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*62*		*28 - 127*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
2-Fluorobiphenyl (Surr)	*49*		*31 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
2-Fluorophenol	*33*		*17 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
Nitrobenzene-d5	*56*		*27 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
Phenol-d6 (Surr)	*22*		*10 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*
p-Terphenyl-d14 (Surr)	*76*		*45 - 120*	*03/21/23 06:13*	*03/23/23 12:27*	*1*

Lab Sample ID: LCS 570-313228/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313228

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	7.92	LR	ug/L		40	57 - 130
1,2-Dichlorobenzene	20.0	8.74		ug/L		44	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	13.4		ug/L		67	60 - 115
1,3-Dichlorobenzene	20.0	8.24		ug/L		41	37 - 120
1,4-Dichlorobenzene	20.0	8.74		ug/L		44	39 - 120
2,4,6-Trichlorophenol	20.0	10.4		ug/L		52	52 - 129

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-313228/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313228

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dichlorophenol	20.0	10.3	LR	ug/L		52	53 - 122
2,4-Dimethylphenol	20.0	10.8		ug/L		54	42 - 120
2,4-Dinitrophenol	20.0	6.10		ug/L		31	1 - 173
2,4-Dinitrotoluene	20.0	14.2		ug/L		71	48 - 127
2,6-Dinitrotoluene	20.0	14.0		ug/L		70	68 - 137
2-Chloronaphthalene	20.0	10.3	LR	ug/L		52	65 - 120
2-Chlorophenol	20.0	10.4		ug/L		52	36 - 120
2-Nitrophenol	20.0	8.44	LR	ug/L		42	45 - 167
3,3'-Dichlorobenzidine	20.0	18.8		ug/L		94	8 - 213
4,6-Dinitro-2-methylphenol	20.0	8.77	LR	ug/L		44	53 - 130
4-Bromophenyl phenyl ether	20.0	13.3		ug/L		67	65 - 120
4-Chloro-3-methylphenol	20.0	11.9		ug/L		59	41 - 128
4-Chlorophenyl phenyl ether	20.0	11.8		ug/L		59	38 - 145
4-Nitrophenol	20.0	5.27		ug/L		26	13 - 129
Acenaphthene	20.0	11.2	LR	ug/L		56	60 - 132
Acenaphthylene	20.0	14.0		ug/L		70	54 - 126
Anthracene	20.0	16.5		ug/L		83	43 - 120
Benzidine	20.0	4.02	J,DX	ug/L		20	20 - 164
Benzo[a]anthracene	20.0	18.6		ug/L		93	42 - 133
Benzo[a]pyrene	20.0	18.7		ug/L		94	32 - 148
Benzo[b]fluoranthene	20.0	17.9		ug/L		89	42 - 140
Benzo[g,h,i]perylene	20.0	18.8		ug/L		94	1 - 195
Benzo[k]fluoranthene	20.0	19.4		ug/L		97	25 - 146
bis (2-chloroisopropyl) ether	20.0	11.4	LR	ug/L		57	63 - 139
Bis(2-chloroethoxy)methane	20.0	9.74		ug/L		49	49 - 165
Bis(2-chloroethyl)ether	20.0	11.1		ug/L		55	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	20.0		ug/L		100	29 - 137
Butyl benzyl phthalate	20.0	17.7		ug/L		89	1 - 140
Chrysene	20.0	17.5		ug/L		88	44 - 140
Dibenz(a,h)anthracene	20.0	17.6		ug/L		88	1 - 200
Diethyl phthalate	20.0	15.2		ug/L		76	1 - 120
Dimethyl phthalate	20.0	14.3		ug/L		71	1 - 120
Di-n-butyl phthalate	20.0	18.4		ug/L		92	8 - 120
Di-n-octyl phthalate	20.0	22.2		ug/L		111	19 - 132
Fluoranthene	20.0	17.0		ug/L		85	43 - 121
Fluorene	20.0	12.3	LR	ug/L		61	70 - 120
Hexachlorobenzene	20.0	14.1		ug/L		70	8 - 142
Hexachlorobutadiene	20.0	7.62		ug/L		38	38 - 120
Hexachlorocyclopentadiene	20.0	8.82		ug/L		44	43 - 145
Hexachloroethane	20.0	8.28	LR	ug/L		41	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	17.5		ug/L		88	1 - 151
Isophorone	20.0	11.1		ug/L		55	47 - 180
Naphthalene	20.0	8.44		ug/L		42	36 - 120
Nitrobenzene	20.0	9.94	LR	ug/L		50	54 - 158
N-Nitrosodimethylamine	20.0	7.21		ug/L		36	20 - 120
N-Nitrosodi-n-propylamine	20.0	12.2		ug/L		61	14 - 198
N-Nitrosodiphenylamine	20.0	16.2		ug/L		81	65 - 133
Pentachlorophenol	20.0	8.07		ug/L		40	38 - 152
Phenanthrene	20.0	14.7		ug/L		73	65 - 120

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-313228/2-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313228

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Phenol			20.0	4.60		ug/L		23	17 - 120		
Pyrene			20.0	17.5		ug/L		88	70 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*56*		*28 - 127*
2-Fluorobiphenyl (Surr)	*54*		*31 - 120*
2-Fluorophenol	*35*		*17 - 120*
Nitrobenzene-d5	*53*		*27 - 120*
Phenol-d6 (Surr)	*26*		*10 - 120*
p-Terphenyl-d14 (Surr)	*91*		*45 - 120*

Lab Sample ID: LCSD 570-313228/3-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313228

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene			20.0	9.00	LR	ug/L		45	57 - 130	13	30
1,2-Dichlorobenzene			20.0	9.79		ug/L		49	40 - 120	11	20
1,2-Diphenylhydrazine(as Azobenzene)			20.0	15.2		ug/L		76	60 - 115	13	30
1,3-Dichlorobenzene			20.0	9.33		ug/L		47	37 - 120	12	20
1,4-Dichlorobenzene			20.0	9.95		ug/L		50	39 - 120	13	20
2,4,6-Trichlorophenol			20.0	12.9		ug/L		64	52 - 129	21	35
2,4-Dichlorophenol			20.0	12.0		ug/L		60	53 - 122	15	30
2,4-Dimethylphenol			20.0	12.5		ug/L		62	42 - 120	15	35
2,4-Dinitrophenol			20.0	7.47		ug/L		37	1 - 173	20	79
2,4-Dinitrotoluene			20.0	13.4		ug/L		67	48 - 127	6	25
2,6-Dinitrotoluene			20.0	14.4		ug/L		72	68 - 137	3	29
2-Chloronaphthalene			20.0	12.5	LR BA	ug/L		62	65 - 120	19	15
2-Chlorophenol			20.0	12.3		ug/L		62	36 - 120	17	37
2-Nitrophenol			20.0	7.86	LR	ug/L		39	45 - 167	7	33
3,3'-Dichlorobenzidine			20.0	20.1		ug/L		101	8 - 213	7	65
4,6-Dinitro-2-methylphenol			20.0	9.32	LR	ug/L		47	53 - 130	6	122
4-Bromophenyl phenyl ether			20.0	14.8		ug/L		74	65 - 120	11	26
4-Chloro-3-methylphenol			20.0	14.1		ug/L		71	41 - 128	17	44
4-Chlorophenyl phenyl ether			20.0	14.1		ug/L		70	38 - 145	18	36
4-Nitrophenol			20.0	5.61		ug/L		28	13 - 129	6	79
Acenaphthene			20.0	13.7		ug/L		68	60 - 132	20	29
Acenaphthylene			20.0	16.3		ug/L		81	54 - 126	15	45
Anthracene			20.0	17.8		ug/L		89	43 - 120	8	40
Benzidine			20.0	4.48	J,DX	ug/L		22	20 - 164	11	30
Benzo[a]anthracene			20.0	19.7		ug/L		99	42 - 133	6	32
Benzo[a]pyrene			20.0	20.1		ug/L		100	32 - 148	7	43
Benzo[b]fluoranthene			20.0	18.7		ug/L		93	42 - 140	4	43
Benzo[g,h,i]perylene			20.0	18.8		ug/L		94	1 - 195	0	61
Benzo[k]fluoranthene			20.0	20.3		ug/L		102	25 - 146	5	38
bis (2-chloroisopropyl) ether			20.0	12.4	LR	ug/L		62	63 - 139	8	46
Bis(2-chloroethoxy)methane			20.0	11.5		ug/L		58	49 - 165	17	32
Bis(2-chloroethyl)ether			20.0	12.5		ug/L		62	43 - 126	12	65

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-313228/3-A
Matrix: Water
Analysis Batch: 314108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313228

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate	20.0	22.2		ug/L		111	29 - 137	10	50
Butyl benzyl phthalate	20.0	20.3		ug/L		101	1 - 140	13	36
Chrysene	20.0	18.3		ug/L		91	44 - 140	4	53
Dibenz(a,h)anthracene	20.0	18.1		ug/L		91	1 - 200	3	75
Diethyl phthalate	20.0	17.0		ug/L		85	1 - 120	11	60
Dimethyl phthalate	20.0	16.3		ug/L		82	1 - 120	13	110
Di-n-butyl phthalate	20.0	19.7		ug/L		99	8 - 120	7	28
Di-n-octyl phthalate	20.0	23.9		ug/L		119	19 - 132	7	42
Fluoranthene	20.0	17.7		ug/L		88	43 - 121	4	40
Fluorene	20.0	14.6		ug/L		73	70 - 120	17	23
Hexachlorobenzene	20.0	15.1		ug/L		76	8 - 142	7	33
Hexachlorobutadiene	20.0	8.69		ug/L		43	38 - 120	13	38
Hexachlorocyclopentadiene	20.0	10.6		ug/L		53	43 - 145	18	22
Hexachloroethane	20.0	8.90	LR	ug/L		44	55 - 120	7	32
Indeno[1,2,3-cd]pyrene	20.0	18.0		ug/L		90	1 - 151	3	60
Isophorone	20.0	12.8		ug/L		64	47 - 180	15	56
Naphthalene	20.0	9.65		ug/L		48	36 - 120	13	39
Nitrobenzene	20.0	10.8		ug/L		54	54 - 158	8	37
N-Nitrosodimethylamine	20.0	8.51		ug/L		43	20 - 120	17	21
N-Nitrosodi-n-propylamine	20.0	13.8		ug/L		69	14 - 198	12	52
N-Nitrosodiphenylamine	20.0	18.5		ug/L		92	65 - 133	13	20
Pentachlorophenol	20.0	9.04		ug/L		45	38 - 152	11	52
Phenanthrene	20.0	16.1		ug/L		81	65 - 120	9	24
Phenol	20.0	5.51		ug/L		28	17 - 120	18	39
Pyrene	20.0	17.7		ug/L		88	70 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*68*		*28 - 127*
2-Fluorobiphenyl (Surr)	*69*		*31 - 120*
2-Fluorophenol	*42*		*17 - 120*
Nitrobenzene-d5	*55*		*27 - 120*
Phenol-d6 (Surr)	*30*		*10 - 120*
p-Terphenyl-d14 (Surr)	*97*		*45 - 120*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-314097/5
Matrix: Water
Analysis Batch: 314097

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/23/23 12:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*119*		*20 - 144*		*03/23/23 12:15*	*1*

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCS 570-314097/3
Matrix: Water
Analysis Batch: 314097

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	2100		ug/L		109	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*120*		*20 - 144*

Lab Sample ID: LCSD 570-314097/4
Matrix: Water
Analysis Batch: 314097

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	2050		ug/L		107	71 - 120	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*120*		*20 - 144*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-313977/1-A
Matrix: Water
Analysis Batch: 314146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313977

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/22/23 22:01	03/23/23 17:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*93*		*53 - 151*	*03/22/23 22:01*	*03/23/23 17:17*	*1*

Lab Sample ID: LCS 570-313977/2-A
Matrix: Water
Analysis Batch: 314146

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313977

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			4.00	3.82		mg/L		95	65 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*93*		*53 - 151*

Lab Sample ID: LCSD 570-313977/3-A
Matrix: Water
Analysis Batch: 314146

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313977

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			4.00	3.93		mg/L		98	65 - 129	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*100*		*53 - 151*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-312386/5
Matrix: Water
Analysis Batch: 312386

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/17/23 02:56	1

Lab Sample ID: LCS 570-312386/6
Matrix: Water
Analysis Batch: 312386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	49.5		ug/L		99	95 - 107

Lab Sample ID: LCSD 570-312386/7
Matrix: Water
Analysis Batch: 312386

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	49.5		ug/L		99	95 - 107	0	20

Lab Sample ID: MRL 570-312386/20
Matrix: Water
Analysis Batch: 312386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	0.200	0.186	J,DX	ug/L		93	50 - 150

Lab Sample ID: MRL 570-312386/3
Matrix: Water
Analysis Batch: 312386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	0.200	0.187	J,DX	ug/L		93	50 - 150

Lab Sample ID: 570-131449-1 MS
Matrix: Water
Analysis Batch: 312386

Client Sample ID: EPBMC_20230316
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	0.024	J,DX	50.1	49.7		ug/L		99	85 - 121

Lab Sample ID: 570-131449-1 MSD
Matrix: Water
Analysis Batch: 312386

Client Sample ID: EPBMC_20230316
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.024	J,DX	50.1	49.5		ug/L		99	85 - 121	1	25

Lab Sample ID: MB 570-312399/1-A
Matrix: Water
Analysis Batch: 312386

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/17/23 07:17	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: LCS 570-312399/2-A
Matrix: Water
Analysis Batch: 312386

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	49.2		ug/L		98	95 - 107

Lab Sample ID: LCSD 570-312399/3-A
Matrix: Water
Analysis Batch: 312386

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	48.8		ug/L		98	95 - 107	1	20

Lab Sample ID: 570-131449-1 MS
Matrix: Water
Analysis Batch: 312386

Client Sample ID: EPBMC_20230316
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	0.027	J,DX	50.1	49.4		ug/L		99	85 - 121

Lab Sample ID: 570-131449-1 MSD
Matrix: Water
Analysis Batch: 312386

Client Sample ID: EPBMC_20230316
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.027	J,DX	50.1	49.5		ug/L		99	85 - 121	0	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-312052/5
Matrix: Water
Analysis Batch: 312052

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/16/23 07:14	1
Fluoride	ND		0.10	0.046	mg/L			03/16/23 07:14	1
Sulfate	ND		1.0	0.24	mg/L			03/16/23 07:14	1

Lab Sample ID: LCS 570-312052/6
Matrix: Water
Analysis Batch: 312052

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.2		mg/L		100	90 - 110
Fluoride	2.50	2.52		mg/L		101	90 - 110
Sulfate	50.0	49.1		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-312052/7
Matrix: Water
Analysis Batch: 312052

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	50.2		mg/L		100	90 - 110	0	15
Fluoride	2.50	2.53		mg/L		101	90 - 110	0	15

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 570-312052/7
Matrix: Water
Analysis Batch: 312052

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate			50.0	49.1		mg/L		98	90 - 110	0	15

Lab Sample ID: MB 570-312053/5
Matrix: Water
Analysis Batch: 312053

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/16/23 07:14	1
Nitrate as N	ND		0.10	0.020	mg/L			03/16/23 07:14	1

Lab Sample ID: LCS 570-312053/6
Matrix: Water
Analysis Batch: 312053

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N			2.50	2.44		mg/L		98	90 - 110
Nitrate as N			5.00	5.02		mg/L		100	90 - 110

Lab Sample ID: LCSD 570-312053/7
Matrix: Water
Analysis Batch: 312053

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N			2.50	2.45		mg/L		98	90 - 110	1	15
Nitrate as N			5.00	5.02		mg/L		100	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-312587/7
Matrix: Water
Analysis Batch: 312587

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/17/23 18:02	1

Lab Sample ID: LCS 570-312587/8
Matrix: Water
Analysis Batch: 312587

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate			25.0	24.9		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-312587/9
Matrix: Water
Analysis Batch: 312587

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.9		ug/L		99	85 - 115	0	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-312898/1-A
Matrix: Water
Analysis Batch: 313115

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 312898

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L		03/20/23 06:52	03/20/23 13:48	1

Lab Sample ID: LCS 570-312898/2-A
Matrix: Water
Analysis Batch: 313115

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 312898

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	476	J,DX	ug/L		95	85 - 115

Lab Sample ID: LCSD 570-312898/3-A
Matrix: Water
Analysis Batch: 313115

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 312898

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	467	J,DX	ug/L		93	85 - 115	2	20

Lab Sample ID: MB 570-312534/1-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			03/17/23 19:29	1

Lab Sample ID: LCS 570-312534/2-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	500	446	J,DX	ug/L		89	85 - 115

Lab Sample ID: LCSD 570-312534/3-A
Matrix: Water
Analysis Batch: 312749

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	500	428	J,DX	ug/L		86	85 - 115	4	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-312912/1-A
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		03/20/23 07:23	03/20/23 10:55	1
Silver	ND		1.0	0.23	ug/L		03/20/23 07:23	03/20/23 10:55	1
Arsenic	ND		1.0	0.16	ug/L		03/20/23 07:23	03/20/23 10:55	1
Barium	ND		1.0	0.17	ug/L		03/20/23 07:23	03/20/23 10:55	1
Beryllium	ND		0.50	0.26	ug/L		03/20/23 07:23	03/20/23 10:55	1
Cadmium	ND		1.0	0.13	ug/L		03/20/23 07:23	03/20/23 10:55	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-312912/1-A
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		2.0	0.14	ug/L		03/20/23 07:23	03/20/23 10:55	1
Cobalt	ND		1.0	0.14	ug/L		03/20/23 07:23	03/20/23 10:55	1
Copper	ND		2.0	0.32	ug/L		03/20/23 07:23	03/20/23 10:55	1
Iron	ND		20	3.7	ug/L		03/20/23 07:23	03/20/23 10:55	1
Manganese	ND		1.0	0.41	ug/L		03/20/23 07:23	03/20/23 10:55	1
Nickel	ND		2.0	0.17	ug/L		03/20/23 07:23	03/20/23 10:55	1
Lead	ND		1.0	0.12	ug/L		03/20/23 07:23	03/20/23 10:55	1
Antimony	ND		2.0	0.36	ug/L		03/20/23 07:23	03/20/23 10:55	1
Zinc	ND		20	2.8	ug/L		03/20/23 07:23	03/20/23 10:55	1
Selenium	ND		2.0	0.52	ug/L		03/20/23 07:23	03/20/23 10:55	1
Thallium	ND		1.0	0.11	ug/L		03/20/23 07:23	03/20/23 10:55	1

Lab Sample ID: LCS 570-312912/2-A
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	74.8		ug/L		94	85 - 115
Silver	80.0	76.3		ug/L		95	85 - 115
Arsenic	80.0	75.8		ug/L		95	85 - 115
Barium	80.0	75.8		ug/L		95	85 - 115
Beryllium	80.0	82.4		ug/L		103	85 - 115
Cadmium	80.0	76.5		ug/L		96	85 - 115
Chromium	80.0	75.4		ug/L		94	85 - 115
Cobalt	80.0	73.9		ug/L		92	85 - 115
Copper	80.0	73.2		ug/L		91	85 - 115
Iron	800	776		ug/L		97	85 - 115
Manganese	80.0	76.4		ug/L		96	85 - 115
Nickel	80.0	74.4		ug/L		93	85 - 115
Lead	80.0	70.6		ug/L		88	85 - 115
Antimony	80.0	74.9		ug/L		94	85 - 115
Zinc	80.0	73.6		ug/L		92	85 - 115
Selenium	80.0	76.1		ug/L		95	85 - 115
Thallium	80.0	76.5		ug/L		96	85 - 115

Lab Sample ID: LCSD 570-312912/3-A
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	76.3		ug/L		95	85 - 115	2	20
Silver	80.0	76.8		ug/L		96	85 - 115	1	20
Arsenic	80.0	77.3		ug/L		97	85 - 115	2	20
Barium	80.0	76.2		ug/L		95	85 - 115	1	20
Beryllium	80.0	84.1		ug/L		105	85 - 115	2	20
Cadmium	80.0	76.2		ug/L		95	85 - 115	0	20
Chromium	80.0	76.7		ug/L		96	85 - 115	2	20
Cobalt	80.0	75.6		ug/L		95	85 - 115	2	20
Copper	80.0	75.3		ug/L		94	85 - 115	3	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-312912/3-A
Matrix: Water
Analysis Batch: 312977

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 312912

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron			800	781		ug/L		98	85 - 115	1	20
Manganese			80.0	77.5		ug/L		97	85 - 115	1	20
Nickel			80.0	75.5		ug/L		94	85 - 115	1	20
Lead			80.0	72.7		ug/L		91	85 - 115	3	20
Antimony			80.0	78.2		ug/L		98	85 - 115	4	20
Zinc			80.0	75.5		ug/L		94	85 - 115	3	20
Selenium			80.0	75.8		ug/L		95	85 - 115	0	20
Thallium			80.0	76.9		ug/L		96	85 - 115	0	20

Lab Sample ID: MB 570-312519/1-A
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			03/17/23 11:16	1
Silver	ND		1.0	0.23	ug/L			03/17/23 11:16	1
Arsenic	ND		1.0	0.16	ug/L			03/17/23 11:16	1
Barium	ND		1.0	0.17	ug/L			03/17/23 11:16	1
Beryllium	ND		0.50	0.26	ug/L			03/17/23 11:16	1
Cadmium	ND		1.0	0.13	ug/L			03/17/23 11:16	1
Chromium	ND		2.0	0.14	ug/L			03/17/23 11:16	1
Cobalt	ND		1.0	0.14	ug/L			03/17/23 11:16	1
Copper	ND		2.0	0.32	ug/L			03/17/23 11:16	1
Iron	ND		20	3.7	ug/L			03/17/23 11:16	1
Manganese	ND		1.0	0.41	ug/L			03/17/23 11:16	1
Nickel	ND		2.0	0.17	ug/L			03/17/23 11:16	1
Lead	ND		1.0	0.12	ug/L			03/17/23 11:16	1
Antimony	ND		2.0	0.36	ug/L			03/17/23 11:16	1
Zinc	ND		20	2.8	ug/L			03/17/23 11:16	1
Selenium	ND		2.0	0.52	ug/L			03/17/23 11:16	1
Thallium	ND		1.0	0.11	ug/L			03/17/23 11:16	1

Lab Sample ID: LCS 570-312519/2-A
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum			80.0	78.3		ug/L		98	85 - 115
Silver			80.0	80.1		ug/L		100	85 - 115
Arsenic			80.0	79.2		ug/L		99	85 - 115
Barium			80.0	78.8		ug/L		99	85 - 115
Beryllium			80.0	81.8		ug/L		102	85 - 115
Cadmium			80.0	79.0		ug/L		99	85 - 115
Chromium			80.0	80.5		ug/L		101	85 - 115
Cobalt			80.0	79.3		ug/L		99	85 - 115
Copper			80.0	78.7		ug/L		98	85 - 115
Iron			800	800		ug/L		100	85 - 115
Manganese			80.0	81.8		ug/L		102	85 - 115
Nickel			80.0	78.6		ug/L		98	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-312519/2-A
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	80.0	75.2		ug/L		94	85 - 115
Antimony	80.0	80.3		ug/L		100	85 - 115
Zinc	80.0	77.0		ug/L		96	85 - 115
Selenium	80.0	79.5		ug/L		99	85 - 115
Thallium	80.0	78.5		ug/L		98	85 - 115

Lab Sample ID: LCSD 570-312519/3-A
Matrix: Water
Analysis Batch: 312599

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	78.5		ug/L		98	85 - 115	0	20
Silver	80.0	81.0		ug/L		101	85 - 115	1	20
Arsenic	80.0	79.8		ug/L		100	85 - 115	1	20
Barium	80.0	79.4		ug/L		99	85 - 115	1	20
Beryllium	80.0	80.2		ug/L		100	85 - 115	2	20
Cadmium	80.0	79.4		ug/L		99	85 - 115	0	20
Chromium	80.0	80.6		ug/L		101	85 - 115	0	20
Cobalt	80.0	79.4		ug/L		99	85 - 115	0	20
Copper	80.0	78.8		ug/L		98	85 - 115	0	20
Iron	800	815		ug/L		102	85 - 115	2	20
Manganese	80.0	81.4		ug/L		102	85 - 115	0	20
Nickel	80.0	78.4		ug/L		98	85 - 115	0	20
Lead	80.0	76.2		ug/L		95	85 - 115	1	20
Antimony	80.0	83.2		ug/L		104	85 - 115	4	20
Zinc	80.0	77.9		ug/L		97	85 - 115	1	20
Selenium	80.0	78.2		ug/L		98	85 - 115	2	20
Thallium	80.0	78.3		ug/L		98	85 - 115	0	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-313073/1-A
Matrix: Water
Analysis Batch: 313410

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 313073

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/20/23 13:49	03/21/23 12:10	1

Lab Sample ID: LCS 570-313073/2-A
Matrix: Water
Analysis Batch: 313410

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 313073

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	37.4		mg/L		93	78 - 114

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCSD 570-313073/3-A
Matrix: Water
Analysis Batch: 313410

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 313073

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	38.5		mg/L		96	78 - 114	3	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-315112/5-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315112

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		03/27/23 14:02	03/27/23 15:47	1

Lab Sample ID: LCS 570-315112/6-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315112

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.494		mg/L		99	90 - 110		

Lab Sample ID: LCSD 570-315112/7-A
Matrix: Water
Analysis Batch: 315123

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315112

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.500		mg/L		100	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-309190/11
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/27/23 12:56	1

Lab Sample ID: LCS 570-309190/12
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			250	259		ug/L		104	90 - 110		

Lab Sample ID: LCSD 570-309190/13
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	271		ug/L		109	90 - 110	5	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: MRL 570-309190/10
Matrix: Water
Analysis Batch: 309190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	5.38		ug/L		108	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-312592/3
Matrix: Water
Analysis Batch: 312592

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-313959/7
Matrix: Water
Analysis Batch: 313959

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/22/23 19:27	1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-313188/1
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/20/23 21:08	1

Lab Sample ID: LCS 570-313188/2
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1040		mg/L		104	84 - 108

Lab Sample ID: LCSD 570-313188/3
Matrix: Water
Analysis Batch: 313188

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1040		mg/L		104	84 - 108	0	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-313845/1
Matrix: Water
Analysis Batch: 313845

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/22/23 14:52	1

Lab Sample ID: LCS 570-313845/2
Matrix: Water
Analysis Batch: 313845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	95.0		mg/L		95	77 - 116

Lab Sample ID: LCSD 570-313845/3
Matrix: Water
Analysis Batch: 313845

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	96.0		mg/L		96	77 - 116	1	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCS 570-312571/2-A
Matrix: Water
Analysis Batch: 314247

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312571

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	196		mg/L		99	84.6 - 115.4

Lab Sample ID: USB 570-314247/2
Matrix: Water
Analysis Batch: 314247

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			03/17/23 12:13	1

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-316478/33
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			03/31/23 09:04	1

Lab Sample ID: LCS 570-316478/34
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon, Total Organic	5.03	4.95		mg/L		98	85 - 115

Method: SM 5310D - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 570-316478/35
Matrix: Water
Analysis Batch: 316478

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic			5.03	4.94		mg/L		98	85 - 115	0	20

Lab Sample ID: 570-131449-1 MS
Matrix: Water
Analysis Batch: 316478

Client Sample ID: EPBMC_20230316
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Carbon, Total Organic	8.9		20.1	28.4		mg/L		97	31 - 145		

Lab Sample ID: 570-131449-1 MSD
Matrix: Water
Analysis Batch: 316478

Client Sample ID: EPBMC_20230316
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic	8.9		20.1	28.7		mg/L		98	31 - 145	1	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-312366/5-A
Matrix: Water
Analysis Batch: 312365

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312366

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/16/23 19:30	03/16/23 20:46	1

Lab Sample ID: LCS 570-312366/6-A
Matrix: Water
Analysis Batch: 312365

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312366

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.433		mg/L		87	83 - 122		

Lab Sample ID: LCSD 570-312366/7-A
Matrix: Water
Analysis Batch: 312365

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 312366

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.433		mg/L		87	83 - 122	0	10

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-131449-1 DU
Matrix: Water
Analysis Batch: 313438

Client Sample ID: EPBMC_20230316
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay (less than 0.00391 mm)	16.37			15.55		%				5	20
Coarse Sand (0.5mm to 1mm)	ND			ND		%				NC	20
Fine Sand (0.125 to 0.25mm)	4.78			4.58		%				4	20
Gravel (greater than 2 mm)	ND			ND		%				NC	20

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Lab Sample ID: 570-131449-1 DU
Matrix: Water
Analysis Batch: 313438

Client Sample ID: EPBMC_20230316
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Medium Sand (0.25 to 0.5 mm)	ND			ND		%				NC	20
Silt (0.00391 to 0.0625mm)	66.82			65.97		%				1	20
Total Silt and Clay (0 to 0.0626mm)	83.19			81.52		%				2	20
Very Coarse Sand (1 to 2mm)	ND			ND		%				NC	20
Very Fine Sand (0.0625 to 0.125 mm)	12.03			13.90		%				14	20

GC/MS VOA

Analysis Batch: 312115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	8260B SIM	
MB 570-312115/7	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-312115/4	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-312115/5	Lab Control Sample Dup	Total/NA	Water	8260B SIM	

Analysis Batch: 312441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	624.1	
570-131449-2	TB-20230316-1	Total/NA	Water	624.1	
MB 570-312441/7	Method Blank	Total/NA	Water	624.1	
LCS 570-312441/1004	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-312441/5	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 313228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	625	
MB 570-313228/1-A	Method Blank	Total/NA	Water	625	
LCS 570-313228/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-313228/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 314108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	625.1 SIM	313228
MB 570-313228/1-A	Method Blank	Total/NA	Water	625.1 SIM	313228
LCS 570-313228/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	313228
LCSD 570-313228/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	313228

GC VOA

Analysis Batch: 314097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	8015B	
MB 570-314097/5	Method Blank	Total/NA	Water	8015B	
LCS 570-314097/3	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-314097/4	Lab Control Sample Dup	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 313977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	3510C	
MB 570-313977/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-313977/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-313977/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 314146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-313977/1-A	Method Blank	Total/NA	Water	8015B	313977
LCS 570-313977/2-A	Lab Control Sample	Total/NA	Water	8015B	313977
LCSD 570-313977/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	313977

GC Semi VOA

Analysis Batch: 314259

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	8015B	313977

HPLC/IC

Analysis Batch: 312052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	300.0	
570-131449-1 - DL	EPBMC_20230316	Total/NA	Water	300.0	
MB 570-312052/5	Method Blank	Total/NA	Water	300.0	
LCS 570-312052/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-312052/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 312053

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	300.0	
MB 570-312053/5	Method Blank	Total/NA	Water	300.0	
LCS 570-312053/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-312053/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 312386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	218.6	312399
570-131449-1	EPBMC_20230316	Total/NA	Water	218.6	
MB 570-312386/5	Method Blank	Total/NA	Water	218.6	
MB 570-312399/1-A	Method Blank	Dissolved	Water	218.6	312399
LCS 570-312386/6	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-312399/2-A	Lab Control Sample	Dissolved	Water	218.6	312399
LCSD 570-312386/7	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-312399/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	312399
MRL 570-312386/20	Lab Control Sample	Total/NA	Water	218.6	
MRL 570-312386/3	Lab Control Sample	Total/NA	Water	218.6	
570-131449-1 MS	EPBMC_20230316	Dissolved	Water	218.6	312399
570-131449-1 MS	EPBMC_20230316	Total/NA	Water	218.6	
570-131449-1 MSD	EPBMC_20230316	Dissolved	Water	218.6	312399
570-131449-1 MSD	EPBMC_20230316	Total/NA	Water	218.6	

Filtration Batch: 312399

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	Filtration	
MB 570-312399/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-312399/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312399/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-131449-1 MS	EPBMC_20230316	Dissolved	Water	Filtration	
570-131449-1 MSD	EPBMC_20230316	Dissolved	Water	Filtration	

Analysis Batch: 312587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	314.0	
MB 570-312587/7	Method Blank	Total/NA	Water	314.0	
LCS 570-312587/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-312587/9	Lab Control Sample Dup	Total/NA	Water	314.0	

HPLC/IC

Analysis Batch: 314475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	NO2NO3 Calc	

Metals

Analysis Batch: 312313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	SM 2340B	

Filtration Batch: 312519

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	Filtration	
MB 570-312519/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-312519/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312519/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Filtration Batch: 312534

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	Filtration	
MB 570-312534/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-312534/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312534/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 312599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	200.8	312519
MB 570-312519/1-A	Method Blank	Dissolved	Water	200.8	312519
LCS 570-312519/2-A	Lab Control Sample	Dissolved	Water	200.8	312519
LCSD 570-312519/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	312519

Analysis Batch: 312749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	200.7 Rev 4.4	312534
MB 570-312534/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	312534
LCS 570-312534/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	312534
LCSD 570-312534/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	312534

Analysis Batch: 312767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total Recoverable	Water	SM 2340B	

Prep Batch: 312898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total Recoverable	Water	200.7	
MB 570-312898/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-312898/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-312898/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	

Prep Batch: 312912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total Recoverable	Water	200.8	
MB 570-312912/1-A	Method Blank	Total Recoverable	Water	200.8	

Metals (Continued)

Prep Batch: 312912 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-312912/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-312912/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Analysis Batch: 312977

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-312912/1-A	Method Blank	Total Recoverable	Water	200.8	312912
LCS 570-312912/2-A	Lab Control Sample	Total Recoverable	Water	200.8	312912
LCSD 570-312912/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	312912

Analysis Batch: 313047

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total Recoverable	Water	200.8	312912
570-131449-1	EPBMC_20230316	Total Recoverable	Water	200.8	312912

Analysis Batch: 313115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-312898/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	312898
LCS 570-312898/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	312898
LCSD 570-312898/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	312898

Analysis Batch: 313196

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total Recoverable	Water	200.7 Rev 4.4	312898

General Chemistry

Analysis Batch: 309190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	Kelada 01	
MB 570-309190/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-309190/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-309190/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-309190/10	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 312365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	SM 5540C	312366
MB 570-312366/5-A	Method Blank	Total/NA	Water	SM 5540C	312366
LCS 570-312366/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	312366
LCSD 570-312366/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	312366

Prep Batch: 312366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	SM 5540C	
MB 570-312366/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-312366/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-312366/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Prep Batch: 312571

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	BOD Prep	

General Chemistry (Continued)

Prep Batch: 312571 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-312571/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	

Analysis Batch: 312592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	SM 2130B	
LCSSRM 570-312592/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 312636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	SM 2540F	

Prep Batch: 313073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	1664A	
MB 570-313073/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-313073/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-313073/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 313188

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	SM 2540C	
MB 570-313188/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-313188/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-313188/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 313410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	1664A	313073
MB 570-313073/1-A	Method Blank	Total/NA	Water	1664A	313073
LCS 570-313073/2-A	Lab Control Sample	Total/NA	Water	1664A	313073
LCSD 570-313073/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	313073

Analysis Batch: 313845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	SM 2540D	
MB 570-313845/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-313845/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-313845/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 313959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	SM 2510B	
MB 570-313959/7	Method Blank	Total/NA	Water	SM 2510B	

Analysis Batch: 314247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	SM 5210B	312571
USB 570-314247/2	Method Blank	Total/NA	Water	SM 5210B	
LCS 570-312571/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	312571

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

General Chemistry

Analysis Batch: 314522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	218.6 CR3	
570-131449-1	EPBMC_20230316	Total/NA	Water	218.6 CR3	

Prep Batch: 315112

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	Distill/Ammonia	
MB 570-315112/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-315112/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-315112/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 315123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	350.1	315112
MB 570-315112/5-A	Method Blank	Total/NA	Water	350.1	315112
LCS 570-315112/6-A	Lab Control Sample	Total/NA	Water	350.1	315112
LCSD 570-315112/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	315112

Analysis Batch: 316478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	SM 5310D	
MB 570-316478/33	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-316478/34	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-316478/35	Lab Control Sample Dup	Total/NA	Water	SM 5310D	
570-131449-1 MS	EPBMC_20230316	Total/NA	Water	SM 5310D	
570-131449-1 MSD	EPBMC_20230316	Total/NA	Water	SM 5310D	

Geotechnical

Analysis Batch: 313438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	D4464	
LCS 570-313438/6	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-313438/8	Lab Control Sample Dup	Total/NA	Water	D4464	
570-131449-1 DU	EPBMC_20230316	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Client Sample ID: EPBMC_20230316

Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	312441	03/17/23 14:34	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	312115	03/16/23 21:11	G6NI	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			1030.9 mL	2 mL	313228	03/22/23 05:11	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	314108	03/23/23 21:54	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	314097	03/23/23 18:47	P1R	EET CAL 4
	Instrument ID: GC73									
Total/NA	Prep	3510C			254.8 mL	2.5 mL	313977	03/22/23 22:01	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	314259	03/24/23 02:38	A1W	EET CAL 4
	Instrument ID: GC47									
Dissolved	Filtration	Filtration			100 mL	100 mL	312399	03/17/23 01:30	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	312386	03/17/23 07:50	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	218.6		1	4 mL	4 mL	312386	03/17/23 06:23	YO8L	EET CAL 4
	Instrument ID: IC17									
Total/NA	Analysis	300.0		2	4 mL	4 mL	312052	03/17/23 03:34	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0		2	4 mL	4 mL	312053	03/17/23 03:34	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0	DL	10	4 mL	4 mL	312052	03/17/23 03:52	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	314.0		1	4 mL	4 mL	312587	03/17/23 23:57	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			314475	03/24/23 10:42	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Dissolved	Filtration	Filtration			50 mL	50 mL	312534	03/17/23 10:56	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			312749	03/17/23 19:53	P1R	EET CAL 4
	Instrument ID: ICP10									
Total Recoverable	Prep	200.7			50 mL	50 mL	312898	03/20/23 06:52	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			313196	03/20/23 19:46	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	312519	03/17/23 10:23	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			312599	03/17/23 11:55	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	312912	03/20/23 07:23	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			313047	03/20/23 10:38	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	312912	03/20/23 07:23	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		5			313047	03/20/23 11:25	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Analysis	SM 2340B		1			312313	03/21/23 17:28	P1R	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Client Sample ID: EPBMC_20230316

Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	SM 2340B		1			312767	03/22/23 17:05	P1R	EET CAL 4
Total/NA	Prep	1664A			1006 mL	1000 mL	313073	03/20/23 13:49	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			313410	03/21/23 12:10	USUL	EET CAL 4
	Instrument ID: NO EQUIQ									
Dissolved	Analysis	218.6 CR3		1			314522	03/24/23 12:34	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	218.6 CR3		1			314522	03/24/23 12:34	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	315112	03/27/23 14:02	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	315123	03/27/23 16:20	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	309190	03/27/23 14:30	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			312592	03/17/23 13:41	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			313959	03/22/23 20:21	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	313188	03/20/23 21:08	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	400 mL	1000 mL	313845	03/22/23 14:52	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	312636	03/17/23 16:33	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	BOD Prep					312571	03/17/23 12:09	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	314247	03/17/23 12:38	U7UR	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	SM 5310D		4	40 mL	40 mL	316478	03/31/23 10:52	UAPD	EET CAL 4
	Instrument ID: TOC12									
Total/NA	Prep	SM 5540C			100 mL	100 mL	312366	03/16/23 19:30	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	312365	03/16/23 20:55	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	D4464		1			313438	03/21/23 20:17	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230316-1

Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	312441	03/17/23 14:12	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

1664A = EPA-821-98-002
ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131449-1	EPBMC_20230316	Water	03/16/23 09:15	03/16/23 18:00
570-131449-2	TB-20230316-1	Water	03/16/23 09:15	03/16/23 18:00

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210897.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131449-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/6/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water				X	X	X	X	8	See Attached Instructions
TB-20230316-2 (570-131449-3)	3/16/23	09:15 Pacific		Water							X	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/16/23 1558	EC		03/16/23 1604	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2c TUBE

Loc: 570
131449

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

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Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICK	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	___1___ of ___2___ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)		
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly		
EPBMC_20230316	3/16/23	0915	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-1	3/16/23	0915	TB	WM	2	N	N														x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5		

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

EDBFJUX

Field Readings

Meter Serial #

Time of Readings 0915

DO (mg/L) 5.33

pH 7.17

Temp (°C/F) 13.5

TRC (mg/L) 0.00

Checked by:

Date/Time: 3-16-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for ___6___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/16/23 1205	Received by: EC
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:

Date/Time: 3/16/23 1205
Date/Time: 03/16/23 1745
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/4/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICE	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBMC_20230316	3/16/23	0915	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-2	3/16/23	0915	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by: [signature]	Company: H&A	Date/Time: 3-16-23 1205	Receiv [signature] EC	Date/Time: 3/16/23 1205
Relinquished by: [signature]	Company: EC	Date/Time: 3/16/23 1745	Receiv [signature]	Date/Time: 03/16/23 1745
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

2.0/2.0 , 2.3/2.3 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131449-1

Login Number: 131449
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/4/2023 9:29:53 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131449-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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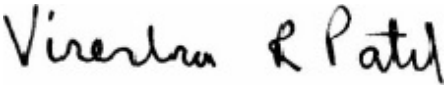
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-2

Qualifiers

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131449-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131449-2

Comments
No additional comments.

Receipt
The samples were received on 3/16/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0º C and 2.3º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-2

Client Sample ID: EPBMC_20230316

Lab Sample ID: 570-131449-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0054		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0032	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0054		0.00050	0.000079	ug/L			03/27/23 18:31	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBMC_20230316
Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0032	MB	0.00050	0.000079	ug/L			03/27/23 17:24	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-421566/15
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/27/23 13:43	1

Lab Sample ID: MB 580-421566/16
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/27/23 13:48	1

Lab Sample ID: MB 580-421566/17
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/27/23 13:52	1

Lab Sample ID: LCS 580-421566/23
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00465		ug/L		93	77 - 123		

Lab Sample ID: LCSD 580-421566/24
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00465		ug/L		93	77 - 123	0	24

Lab Sample ID: MB 580-420850/1-A
Matrix: Water
Analysis Batch: 421566

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000956	J,DX	0.00050	0.000079	ug/L			03/27/23 15:44	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-2

Metals

Filtration Batch: 420850

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	Filtration	
MB 580-420850/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 421566

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	1631E	420850
570-131449-1	EPBMC_20230316	Total/NA	Water	1631E	
MB 580-420850/1-A	Method Blank	Dissolved	Water	1631E	420850
MB 580-421566/15	Method Blank	Total/NA	Water	1631E	
MB 580-421566/16	Method Blank	Total/NA	Water	1631E	
MB 580-421566/17	Method Blank	Total/NA	Water	1631E	
LCS 580-421566/23	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-421566/24	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
j ro/ectSite: goeinF BBLRIBMA and g3 j

Job ID: 570-121994-P

Client Sample ID: EPBMC_20230316

Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Liltration	Liltration			P50 mR	P50 mR	9P0E50	02SP0SP2 11:PE	DM3	TT6 BTA
Dissolved	Analysis	1C21T		1			9P15CO	02SP7SP2 17:P9	CWu	TT6 BTA
	Instr8ment ID:	PC00-2								
6otalSNA	Analysis	1C21T		1			9P15CO	02SP7SP2 1E:21	CWu	TT6 BTA
	Instr8ment ID:	PC00-2								

Laboratory References:

TT6 BTA = T8rofins Beattle, 5755 Eth Btreet Tast, 6acoma, u A 4E9P9, 6TR(P52)4PP-P210

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-2

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

i et Ha y &et Ad r ech, . PlH, j
/ hoS, aBg rat : Fot nHL ggRMlgEr &Hc F6 /

Job ID: 570-13122C-l

Method	Method Description	Protocol	Laboratory
1w31u	6 t h, vhAPMo(Mt Vt e)i Tr RgN	u/ r	uumgur
Rmeh&aoH	g&= Uet Rmeh&aoH	poHt	uumgur

Protocol References:

u/ r f s g uHVmoH= t Ha&e/ hoat , aoHr Lt H, A
poHt f poHt

Laboratory References:

uumgur f uvho8HWgt &aet P5755 9a gaht t au &WaPm&, o= &P4 r C92l 2PmuM)l 53NCl l -l 310

uvho8HWi &eWnt H, t

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131449-1	EPBMC_20230316	Water	03/16/23 09:15	03/16/23 18:00

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210897.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131449-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/6/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230316-2 (570-131449-3)	3/16/23	09:15 Pacific		Water						X	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/16/23 1558	EC		03/16/23 1604	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2c TV2F5

Loc: 570
131449

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICK	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	___1___ of ___2___ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)		
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly		
EPBMC_20230316	3/16/23	0915	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-1	3/16/23	0915	TB	WM	2	N	N														x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5		

EDBFJUX

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings

Meter Serial #

Time of Readings: 0915

DO (mg/L): 5.33

pH: 7.17

Temp (°C/(F)): 53.5

TRC (mg/L): 0.00

Checked by:

Date/Time: 3-16-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for ___6___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/16/23 1205	Received by: EC	Date/Time: 3/16/23 1205
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Received by:	Date/Time: 03/16/23 1745
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICE	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBMC_20230316	3/16/23	0915	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-2	3/16/23	0915	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H&A	Date/Time: 3-16-23 1205	Receiv	Date/Time: 3/16/23 1205
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Receiv	Date/Time: 03/16/23 1745
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.0/2.0 , 2.3/2.3 SCII

SAP COC 2019/2020 VERSION 3

4/4/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211022.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-131449-2
Address: 5755 8th Street East, ,	Due Date Requested: 4/3/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements: 6368 5239 1415

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/17/23 9:21	EC		3/18/23 0930	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: IR9: 3.1/3.4 c/uR

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131449-2

Login Number: 131449
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131449-2

Login Number: 131449
List Number: 3
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/20/23 11:20 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 9:59:42 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131449-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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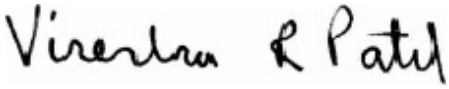
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131449-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131449-3

Comments
No additional comments.

Receipt
The samples were received on 3/16/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-3

Method	Method Description	Protocol	Laboratory
Subcontract	Quant-Tray - E. Coli - level 4 required	None	Enthalpy

Protocol References:

None = None

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131449-1	EPBMC_20230316	Water	03/16/23 09:15	03/16/23 18:00

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 481729
Report Level: IV
Report Date: 03/30/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Project: BOEING NPDES SSFL - Boeing SSFl ISRA and BMP - NEW 57014595

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	Lab Job #: Project No: Location: Date Received:	481729 BOEING NPDES SSFL Boeing SSFI ISRA and BMP - NEW 57014595 03/16/23

Sample ID	Lab ID	Collected	Matrix
EPBMC_20230316 (570-131449-1)	481729-001	03/16/23 09:15	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number: 481729 Project No: BOEING NPDES SSFL Location: Boeing SSFI ISRA and BMP - NEW 57014595 Date Received: 03/16/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/16/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

481729 4/5/02

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210895.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-131449-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 3/30/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 3/16/23 1657	Company: EC	Received by: [signature]	Date/Time: 3-16-23 1657	Company: EA
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Yes No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: EuroFins

Project: Boeing SSFL ISRA and BMP - New

Date Received: 3/16/23

Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 4.5 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 0.8 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✓
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?	✓		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 3-16-23

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #:	9W4- _8	**Project#:**	ME BlmD(mGF Bb(bbug
Client:	Bf S sdC(0 t LCcrdcr (Nf Ced	**Location:**	Mi r Cln(bbuL(lbp A(t dR(MP G()(mBa (7- 2TT

Field ID:	BGMP 03_2_1214 (57- 2)414998)4/	**Batch#:**	12887-	**Analyzed:**	21:4- :_1(4_6_W
Lab ID:	9W4- _8)224	**Sampled:**	21:4 :_1(28647	**Prep:**	
Matrix:	a t e S	**Received:**	21:4 :_1	**Analysis:**	bP (8__1M.
Diln Fac:	4T222	**Prepared:**	21:4 :_1(4 67	**Analyst:**	bP N

481729-001 Analyte	Result	RL	Units
Coliform, E. Coli	**100**	4T2	P Gm:422l L

gr nr dR

RL: p r oi SdCln(gC Ce

1 of 1

Page 15 of 20

v2

4/9/2023

8 of 9

SM 9223 B-b, Quanti-Tray

Prep Analyst: PS Prep Date/Time: 3/16/23 1656 QC Batch ID: 309957 Batch Page 1 of 1

Read Analyst: PS Read Date/Time 3/17/23

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: HU430 Pipette Lot #: A104193/A104222/A104170

Monthly Quanti-tray Sealer Check: Did it Pass? ☑Yes ☐No Date of last check*: 3/1/23 Bottle Lot #: DU006U Comparator Lot #: HU148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 35.3°C 1729 Incubator Out, Temp/Time: 34.7°C 1228

Fecal Coliform: Water Bath ID: 1 Water Bath In, Temp/Time: 44.6°C 1729 Water Bath Out, Temp/Time: 44.5°C 1228

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		481735-002	1x	1	0	1.0	1.0	0	0	<1	<1	0	0	<1	<1	MB-01
		481733-001	↓	1	0	1.0	1.0	0	0	<1	<1	0	0	<1	<1	↓ 02
		481726-001	↓	48	23	313.0	310	0	0	<1	<1					SS-01
		481734-001	↓	43	6	105.0	100	1	0	1.0	1.0					HV-01
		481729-001	↓	49	48	>2419.6	>2400	42	6	98.8	100					EP-01
		↓ 001	10x	49	39	1046.2	10000	10	1	12.1	120					↓
		001	100x	39	3	76.7	7700	0	0	<1	<100					
Quality Control		**Culture ID**														
Positive +/+ (E. Coli)		3/12/23		49	48	>2419.6	>2400	49	48	>2419.6	>2400	49	48	>2419.6	>2400	
Positive +/- (K. Pneumonia)		↓		49	48	>2419.6	>2400	0	0	<1	<1	49	48	>2419.6	>2400	
Negative -/- (P. Aeruginosa)				0	0	<1	<1	0	0	<1	<1	0	0	<1	<1	

JA 3/19/23

JA 3/19/23

Data Entered By: JA 3/19/23 Data Reviewed By:

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210897.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131449-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/6/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water				X	X	X	X	8	See Attached Instructions
TB-20230316-2 (570-131449-3)	3/16/23	09:15 Pacific		Water							X	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/16/23 1558	EC		03/16/23 1604	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2c TUBE

Loc: 570
131449

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICK	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)		
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly		
EPBMC_20230316	3/16/23	0915	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-1	3/16/23	0915	TB	WM	2	N	N														x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5		

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

EDBFJUX

Field Readings

Meter Serial #

Time of Readings: 0915

DO (mg/L): 5.33

pH: 7.17

Temp (°C/F): 53.5

TRC (mg/L): 0.00

Checked by:

Date/Time: 3-16-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/16/23 1205	Received by: EC
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:

Date/Time: 3/16/23 1205
Date/Time: 03/16/23 1745
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/9/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICE	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBMC_20230316	3/16/23	0915	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-2	3/16/23	0915	TB	WM	2	N	N				X																
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H&A	Date/Time: 3-16-23 1205	Receiv	Date/Time: 3/16/23 1205
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Receiv	Date/Time: 03/16/23 1745
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.0/2.0 , 2.3/2.3 SCII

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131449-3

Login Number: 131449
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/7/2023 7:44:48 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131449-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

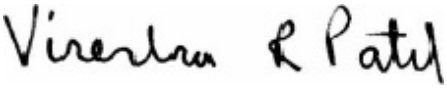
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-4

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131449-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131449-4

Comments
No additional comments.

Receipt
The samples were received on 3/16/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0º C and 2.3º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: EPBMC_20230316 (570-131449-1), (CCV 320-665899/15), (LCS 320-665270/2-A), (LCSD 320-665270/3-A) and (MB 320-665270/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-4

Client Sample ID: EPBMC_20230316 — Lab Sample ID: 570-131449-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	0.0000019	J,DX MB q	0.000049	0.000000087	ug/L	1		1613B	Total/NA
OCDD	0.000018	J,DX MB	0.000097	0.0000013	ug/L	1		1613B	Total/NA
Total HpCDD	0.0000045	J,DX MB q	0.000049	0.000000087	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBMC_W0VW80316
Date Colle8ted: 03/16/W3 04:15
Date Re8eived: 03/16/W3 1y:00

Lab Sample ID: 570-131224-1
Matrix: c ater

Analzte	Result	f uali.ier	RL	EDL	Qnit	D	Prepared	AnalzUed	Dil Fa8
2,3,7,8-TCDD	ND		0.0000097	0.00000019	ug/L		04/03/23 14:30	04/07/23 07:43	1
2,3,7,8-TCDF	ND		0.0000097	0.00000018	ug/L		04/03/23 14:30	04/07/23 07:43	1
1,2,3,7,8-PeCDD	ND		0.000049	0.00000057	ug/L		04/03/23 14:30	04/07/23 07:43	1
1,2,3,7,8-PeCDF	ND		0.000049	0.00000014	ug/L		04/03/23 14:30	04/07/23 07:43	1
2,3,4,7,8-PeCDF	ND		0.000049	0.00000017	ug/L		04/03/23 14:30	04/07/23 07:43	1
1,2,3,4,7,8-HxCDD	ND		0.000049	0.00000039	ug/L		04/03/23 14:30	04/07/23 07:43	1
1,2,3,6,7,8-HxCDD	ND		0.000049	0.00000037	ug/L		04/03/23 14:30	04/07/23 07:43	1
1,2,3,7,8,9-HxCDD	ND		0.000049	0.00000035	ug/L		04/03/23 14:30	04/07/23 07:43	1
1,2,3,4,7,8-HxCDF	ND		0.000049	0.00000022	ug/L		04/03/23 14:30	04/07/23 07:43	1
1,2,3,6,7,8-HxCDF	ND		0.000049	0.00000020	ug/L		04/03/23 14:30	04/07/23 07:43	1
1,2,3,7,8,9-HxCDF	ND		0.000049	0.00000021	ug/L		04/03/23 14:30	04/07/23 07:43	1
2,3,4,6,7,8-HxCDF	ND		0.000049	0.00000019	ug/L		04/03/23 14:30	04/07/23 07:43	1
1XW3X2X6X7Xy-HpCDD	**0.J000014**	**, XD9 MB q**	0.000049	0.00000087	ug/L		04/03/23 14:30	04/07/23 07:43	1
1,2,3,4,6,7,8-HpCDF	ND		0.000049	0.00000040	ug/L		04/03/23 14:30	04/07/23 07:43	1
1,2,3,4,7,8,9-HpCDF	ND		0.000049	0.00000043	ug/L		04/03/23 14:30	04/07/23 07:43	1
OCDD	**0.J0001y**	**, XD9 MB**	0.000097	0.00000013	ug/L		04/03/23 14:30	04/07/23 07:43	1
OCDF	ND		0.000097	0.00000041	ug/L		04/03/23 14:30	04/07/23 07:43	1
Total TCDD	ND		0.0000097	0.00000019	ug/L		04/03/23 14:30	04/07/23 07:43	1
Total TCDF	ND		0.0000097	0.00000018	ug/L		04/03/23 14:30	04/07/23 07:43	1
Total PeCDD	ND		0.000049	0.00000057	ug/L		04/03/23 14:30	04/07/23 07:43	1
Total PeCDF	ND		0.000049	0.00000014	ug/L		04/03/23 14:30	04/07/23 07:43	1
Total HxCDD	ND		0.000049	0.00000035	ug/L		04/03/23 14:30	04/07/23 07:43	1
Total HxCDF	ND		0.000049	0.00000019	ug/L		04/03/23 14:30	04/07/23 07:43	1
Total HpCDD	**0.J000025**	**, XD9 MB q**	0.000049	0.00000087	ug/L		04/03/23 14:30	04/07/23 07:43	1
Total HpCDF	ND		0.000049	0.00000040	ug/L		04/03/23 14:30	04/07/23 07:43	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*05*		*20 - 156*	*46/43/23 16:34*	*46/47/23 47:63*	*1*
13C-2,3,7,8-TCDF	*02*		*26 - 159*	*46/43/23 16:34*	*46/47/23 47:63*	*1*
13C-1,2,3,7,8-PeCDD	*00*		*20 - 181*	*46/43/23 16:34*	*46/47/23 47:63*	*1*
13C-1,2,3,7,8-PeCDF	*01*		*26 - 180*	*46/43/23 16:34*	*46/47/23 47:63*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBMC_W0W30316
Date Colle8ted: 03/16/W3 04:15
Date Re8eived: 03/16/W3 1y:00

Lab Sample ID: 570-131224-1
Matrix: c ater

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,6,7,8-PeCDF	04		21 - 178	46/43/23 16:34	46/47/23 47:63	1
13C-1,2,3,6,7,8-HxCDD	60		32 - 161	46/43/23 16:34	46/47/23 47:63	1
13C-1,2,3,5,7,8-HxCDD	02		28 - 134	46/43/23 16:34	46/47/23 47:63	1
13C-1,2,3,6,7,8-HxCDF	63		25 - 102	46/43/23 16:34	46/47/23 47:63	1
13C-1,2,3,5,7,8-HxCDF	65		25 - 123	46/43/23 16:34	46/47/23 47:63	1
13C-1,2,3,7,8,9-HxCDF	04		29 - 167	46/43/23 16:34	46/47/23 47:63	1
13C-2,3,6,5,7,8-HxCDF	69		28 - 135	46/43/23 16:34	46/47/23 47:63	1
13C-1,2,3,6,5,7,8-HpCDD	05		23 - 164	46/43/23 16:34	46/47/23 47:63	1
13C-1,2,3,6,5,7,8-HpCDF	66		28 - 163	46/43/23 16:34	46/47/23 47:63	1
13C-1,2,3,6,7,8,9-HpCDF	04		25 - 138	46/43/23 16:34	46/47/23 47:63	1
13C-OCDD	01		17 - 107	46/43/23 16:34	46/47/23 47:63	1
13C-OCDF	69		17 - 107	46/43/23 16:34	46/47/23 47:63	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	59		30 - 197	46/43/23 16:34	46/47/23 47:63	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-131449-1	EPBMC_20230316	69
MB 320-665270/1-A	Method Blank	91

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-665270/2-A	Lab Control Sample	93
LCSD 320-665270/3-A	Lab Control Sample Dup	94

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-131449-1	EPBMC_20230316	56	52	55	51	50	45	52	43
MB 320-665270/1-A	Method Blank	79	73	80	73	74	74	76	70

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-131449-1	EPBMC_20230316	46	50	49	56	44	50	51	49
MB 320-665270/1-A	Method Blank	71	76	73	78	63	78	71	67

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-665270/2-A	Lab Control Sample	70	63	77	68	68	72	76	70
LCSD 320-665270/3-A	Lab Control Sample Dup	77	73	79	73	72	72	77	72

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-665270/2-A	Lab Control Sample	70	70	71	79	65	76	76	71
LCSD 320-665270/3-A	Lab Control Sample Dup	73	76	74	83	66	76	77	73

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131449-4
Project/Site: Boeing SSFL ISRA and BMP

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-665270/1-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665270

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000013	ug/L		04/03/23 14:30	04/07/23 00:29	1
2,3,7,8-TCDF	ND		0.000010	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000045	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000014	ug/L		04/03/23 14:30	04/07/23 00:29	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000015	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,7,8-HxCDD	0.00000149	J,DX q	0.000050	0.00000025	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000026	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000023	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000017	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000016	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,6,7,8-HpCDD	0.000000942	J,DX q	0.000050	0.00000031	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,6,7,8-HpCDF	0.00000151	J,DX	0.000050	0.00000087	ug/L		04/03/23 14:30	04/07/23 00:29	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.00000090	ug/L		04/03/23 14:30	04/07/23 00:29	1
OCDD	0.00000452	J,DX	0.00010	0.00000043	ug/L		04/03/23 14:30	04/07/23 00:29	1
OCDF	ND		0.00010	0.00000080	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total TCDD	0.00000632	J,DX q	0.000010	0.00000013	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total TCDF	ND		0.000010	0.00000018	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total PeCDD	ND		0.000050	0.00000045	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total PeCDF	ND		0.000050	0.00000014	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HxCDD	0.00000149	J,DX q	0.000050	0.00000023	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HxCDF	ND		0.000050	0.00000016	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HpCDD	0.000000942	J,DX q	0.000050	0.00000031	ug/L		04/03/23 14:30	04/07/23 00:29	1
Total HpCDF	0.00000151	J,DX	0.000050	0.00000087	ug/L		04/03/23 14:30	04/07/23 00:29	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*29 - 154*	*04/03/23 14:30*	*04/07/23 00:26*	*1*
13C-2,3,7,8-TCDF	*73*		*24 - 156*	*04/03/23 14:30*	*04/07/23 00:26*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*29 - 181*	*04/03/23 14:30*	*04/07/23 00:26*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-665270/1-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665270

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	73		24 - 189	04/03/23 14:30	04/07/23 00:26	1
13C-2,3,4,7,8-PeCDF	74		21 - 178	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,7,8-HxCDD	74		32 - 141	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,5,7,8-HxCDD	75		28 - 130	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,7,8-HxCDF	70		25 - 192	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,5,7,8-HxCDF	71		25 - 123	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,7,8,6-HxCDF	75		26 - 147	04/03/23 14:30	04/07/23 00:26	1
13C-2,3,4,5,7,8-HxCDF	73		28 - 135	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,5,7,8-HpCDD	78		23 - 140	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,5,7,8-HpCDF	53		28 - 143	04/03/23 14:30	04/07/23 00:26	1
13C-1,2,3,4,7,8,6-HpCDF	78		25 - 138	04/03/23 14:30	04/07/23 00:26	1
13C-OCDD	71		17 - 197	04/03/23 14:30	04/07/23 00:26	1
13C-OCDF	57		17 - 197	04/03/23 14:30	04/07/23 00:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	61		39 - 167	04/03/23 14:30	04/07/23 00:26	1

Lab Sample ID: LCS 320-665270/2-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665270

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000175		ug/L		87	67 - 158		
2,3,7,8-TCDF			0.000200	0.000177		ug/L		89	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000815		ug/L		82	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000802		ug/L		80	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000805		ug/L		81	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000807		ug/L		81	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.000822		ug/L		82	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000816		ug/L		82	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000807		ug/L		81	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000844		ug/L		84	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000798		ug/L		80	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000797		ug/L		80	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000846		ug/L		85	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000837		ug/L		84	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000792		ug/L		79	78 - 138		
OCDD			0.00200	0.00165		ug/L		82	78 - 144		
OCDF			0.00200	0.00166		ug/L		83	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	70		20 - 179
13C-2,3,7,8-TCDF	53		22 - 192
13C-1,2,3,7,8-PeCDD	77		21 - 227
13C-1,2,3,7,8-PeCDF	58		21 - 162
13C-2,3,4,7,8-PeCDF	58		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 163
13C-1,2,3,5,7,8-HxCDD	75		29 - 153

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-665270/2-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665270

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	70		16 - 202
13C-1,2,3,5,7,8-HxCDF	70		21 - 196
13C-1,2,3,7,8,6-HxCDF	70		17 - 209
13C-2,3,4,5,7,8-HxCDF	71		22 - 175
13C-1,2,3,4,5,7,8-HpCDD	76		25 - 155
13C-1,2,3,4,5,7,8-HpCDF	59		21 - 198
13C-1,2,3,4,7,8,6-HpCDF	75		20 - 185
13C-OCDD	75		13 - 166
13C-OCDF	71		13 - 166

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	63		31 - 161

Lab Sample ID: LCSD 320-665270/3-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665270

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000180		ug/L		90	67 - 158	3	50
2,3,7,8-TCDF			0.000200	0.000178		ug/L		89	75 - 158	0	50
1,2,3,7,8-PeCDD			0.00100	0.000905		ug/L		91	70 - 142	10	50
1,2,3,7,8-PeCDF			0.00100	0.000867		ug/L		87	80 - 134	8	50
2,3,4,7,8-PeCDF			0.00100	0.000872		ug/L		87	68 - 160	8	50
1,2,3,4,7,8-HxCDD			0.00100	0.000903		ug/L		90	70 - 164	11	50
1,2,3,6,7,8-HxCDD			0.00100	0.000911		ug/L		91	76 - 134	10	50
1,2,3,7,8,9-HxCDD			0.00100	0.000919		ug/L		92	64 - 162	12	50
1,2,3,4,7,8-HxCDF			0.00100	0.000875		ug/L		88	72 - 134	8	50
1,2,3,6,7,8-HxCDF			0.00100	0.000870		ug/L		87	84 - 130	3	50
1,2,3,7,8,9-HxCDF			0.00100	0.000853		ug/L		85	78 - 130	7	50
2,3,4,6,7,8-HxCDF			0.00100	0.000868		ug/L		87	70 - 156	9	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000836		ug/L		84	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000937		ug/L		94	82 - 122	11	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000894		ug/L		89	78 - 138	12	50
OCDD			0.00200	0.00186		ug/L		93	78 - 144	12	50
OCDF			0.00200	0.00187		ug/L		94	63 - 170	12	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	77		20 - 179
13C-2,3,7,8-TCDF	73		22 - 192
13C-1,2,3,7,8-PeCDD	76		21 - 227
13C-1,2,3,7,8-PeCDF	73		21 - 162
13C-2,3,4,7,8-PeCDF	72		13 - 328
13C-1,2,3,4,7,8-HxCDD	72		21 - 163
13C-1,2,3,5,7,8-HxCDD	77		29 - 153
13C-1,2,3,4,7,8-HxCDF	72		16 - 202
13C-1,2,3,5,7,8-HxCDF	73		21 - 196
13C-1,2,3,7,8,6-HxCDF	75		17 - 209
13C-2,3,4,5,7,8-HxCDF	74		22 - 175

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-665270/3-A
Matrix: Water
Analysis Batch: 665899

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665270

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,5,7,8-HpCDD	83		25 - 155
13C-1,2,3,4,5,7,8-HpCDF	55		21 - 198
13C-1,2,3,4,7,8,6-HpCDF	75		20 - 185
13C-OCDD	77		13 - 166
13C-OCDF	73		13 - 166

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	64		31 - 161

Client: Haley & Aldrich, Inc.
Job ID: 570-131449-4
Project/Site: Boeing SSFL ISRA and BMP

Specialty Organics

Prep Batch: 665270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	1613B	
MB 320-665270/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-665270/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-665270/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 665899

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	1613B	665270
MB 320-665270/1-A	Method Blank	Total/NA	Water	1613B	665270
LCS 320-665270/2-A	Lab Control Sample	Total/NA	Water	1613B	665270
LCSD 320-665270/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	665270

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-4

Client Sample ID: EPBMC_20230316

Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1028.2 mL	20.0 uL	665270	04/03/23 14:30	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	665899	04/07/23 07:43	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-4

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-4

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131449-1	EPBMC_20230316	Water	03/16/23 09:15	03/16/23 18:00

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210897.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131449-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/6/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230316-2 (570-131449-3)	3/16/23	09:15 Pacific		Water						X	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/16/23 1558	EC		03/16/23 1604	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2c TUBE

Loc: 570
131449

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICK	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)		
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly		
EPBMC_20230316	3/16/23	0915	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-1	3/16/23	0915	TB	WM	2	N	N														x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5		

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

EDBFJUX

Field Readings

Meter Serial #

Time of Readings: 0915

DO (mg/L): 5.33

pH: 7.17

Temp (°C/F): 53.5

TRC (mg/L): 0.00

Checked by:

Date/Time: 3-16-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/16/23 1205	Received by: EC
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:

Date/Time: 3/16/23 1205
Date/Time: 03/16/23 1745
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/7/2023

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICE	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBMC_20230316	3/16/23	0915	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-2	3/16/23	0915	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by: [signature]	Company: H&A	Date/Time: 3-16-23 1205	Receiv [signature] EC	Date/Time: 3/16/23 1205
Relinquished by: [signature]	Company: EC	Date/Time: 3/16/23 1745	Receiv [signature]	Date/Time: 03/16/23 1745
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

2.0/2.0 , 2.3/2.3 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211010.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-131449-4
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/3/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/17/23 747	EEC		3/18/23 - 916	EETSAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131449-4

Login Number: 131449
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131449-4

Login Number: 131449
List Number: 2
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 03/18/23 12:13 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 6/8/2023 12:08:19 PM Revision 1

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131449-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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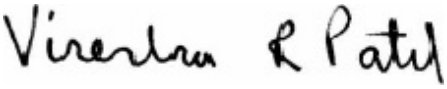
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
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Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131449-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131449-5

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 4/29/2023. The report (revision 1) is being revised due to: The clients office requested the full EPA 608.3 list to be reported..

Receipt
The samples were received on 3/16/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods EPA 608 - Pesticides/PCBs - PP list, VOCs-2CVE only (E624), Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-5

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs-2CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131449-1	EPBMC_20230316	Water	03/16/23 09:15	03/16/23 18:00
570-131449-3	TB-20230316-2	Water	03/16/23 09:15	03/16/23 18:00

Work Orders:	3C16136	**Report Date:**	6/02/2023
		Received Date:	3/16/2023
Project:	570-131449-5	**Turnaround Time:**	Normal
		Phones:	(949) 261-1022
		Fax:	(949) 260-3297
Attn:	Virendra Patel	**P.O. #:**	570-131449-5
Client:	Eurofins Calscience - Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	**Billing Code:**	

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/16/23 with the Chain-of-Custody document. The samples were received in good condition, at 5.3 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: EPBMC_202230316 (570-131449-5) — Sampled: 03/16/23 9:15 by Client

3C16136-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C1882 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/22/23 09:09				**Analyst:** RJG
4,4´-DDD	ND	0.0027	0.050	ug/l	1	04/18/23	
4,4´-DDE	ND	0.0018	0.050	ug/l	1	04/18/23	
4,4´-DDT	ND	0.0028	0.050	ug/l	1	04/18/23	
Aldrin	ND	0.0010	0.050	ug/l	1	04/18/23	
alpha-BHC	ND	0.0011	0.050	ug/l	1	04/18/23	
Aroclor 1016	ND	0.10	1.0	ug/l	1	04/18/23	
Aroclor 1221	ND	0.10	1.0	ug/l	1	04/18/23	
Aroclor 1232	ND	0.10	1.0	ug/l	1	04/18/23	
Aroclor 1242	ND	0.10	1.0	ug/l	1	04/18/23	
Aroclor 1248	ND	0.10	1.0	ug/l	1	04/18/23	
Aroclor 1254	ND	0.10	1.0	ug/l	1	04/18/23	
Aroclor 1260	ND	0.10	1.0	ug/l	1	04/18/23	
beta-BHC	ND	0.0015	0.050	ug/l	1	04/18/23	
Chlordane (tech)	ND	0.043	0.50	ug/l	1	04/18/23	
delta-BHC	ND	0.0019	0.050	ug/l	1	04/18/23	
Dieldrin	ND	0.0017	0.050	ug/l	1	04/18/23	
Endosulfan I	ND	0.0019	0.050	ug/l	1	04/18/23	Q-ME
Endosulfan II	ND	0.0019	0.050	ug/l	1	04/18/23	
Endosulfan sulfate	ND	0.0013	0.050	ug/l	1	04/18/23	
Endrin	ND	0.0017	0.050	ug/l	1	04/18/23	

Sample Results

(Continued)

Sample: EPBMC_202230316 (570-131449-5)
3C16136-01 (Water)

Sampled: 03/16/23 9:15 by Client
(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C1882 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/22/23 09:09				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.050	ug/l	1	04/18/23	
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l	1	04/18/23	
Heptachlor	ND	0.0023	0.050	ug/l	1	04/18/23	
Heptachlor epoxide	ND	0.0018	0.050	ug/l	1	04/18/23	
Methoxychlor	ND	0.0038	0.050	ug/l	1	04/18/23	
Toxaphene	ND	0.25	2.0	ug/l	1	04/18/23	
Surrogate(s)							
Decachlorobiphenyl	*72%*		*33-133*	*Conc: 0.0796*		*04/18/23*	
Tetrachloro-meta-xylene	*60%*		*32-130*	*Conc: 0.0659*		*04/18/23*	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C1882-BLK1)					**Prepared: 03/22/23 Analyzed: 04/18/23**						
4,4´-DDD	ND	0.0027	0.050	ug/l							
4,4´-DDE	ND	0.0018	0.050	ug/l							
4,4´-DDT	ND	0.0028	0.050	ug/l							
Aldrin	ND	0.0010	0.050	ug/l							
alpha-BHC	ND	0.0011	0.050	ug/l							
Aroclor 1016	ND	0.029	1.0	ug/l							
Aroclor 1221	ND	0.060	1.0	ug/l							
Aroclor 1232	ND	0.083	1.0	ug/l							
Aroclor 1242	ND	0.095	1.0	ug/l							
Aroclor 1248	ND	0.083	1.0	ug/l							
Aroclor 1254	ND	0.040	1.0	ug/l							
Aroclor 1260	ND	0.055	1.0	ug/l							
beta-BHC	ND	0.0015	0.050	ug/l							
Chlordane (tech)	ND	0.043	0.50	ug/l							
delta-BHC	ND	0.0019	0.050	ug/l							
Dieldrin	ND	0.0017	0.050	ug/l							
Endosulfan I	ND	0.0019	0.050	ug/l							
Endosulfan II	ND	0.0019	0.050	ug/l							
Endosulfan sulfate	ND	0.0013	0.050	ug/l							
Endrin	ND	0.0017	0.050	ug/l							
Endrin aldehyde	ND	0.0019	0.050	ug/l							
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l							
Heptachlor	ND	0.0023	0.050	ug/l							
Heptachlor epoxide	ND	0.0018	0.050	ug/l							
Methoxychlor	ND	0.0038	0.050	ug/l							
Toxaphene	ND	0.085	2.0	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.0973*			*ug/l*	*0.100*		*97*	*33-133*			
Tetrachloro-meta-xylene	*0.0616*			*ug/l*	*0.100*		*62*	*32-130*			
LCS (W3C1882-BS1)					**Prepared: 03/22/23 Analyzed: 04/18/23**						
4,4´-DDD	0.161	0.0027	0.050	ug/l	0.200		80	48-130			
4,4´-DDE	0.149	0.0018	0.050	ug/l	0.200		75	54-130			
4,4´-DDT	0.168	0.0028	0.050	ug/l	0.200		84	46-137			
Aldrin	0.138	0.0010	0.050	ug/l	0.200		69	54-130			
alpha-BHC	0.149	0.0011	0.050	ug/l	0.200		74	49-130			
beta-BHC	0.141	0.0015	0.050	ug/l	0.200		71	39-130			
delta-BHC	0.155	0.0019	0.050	ug/l	0.200		77	51-130			
Dieldrin	0.136	0.0017	0.050	ug/l	0.200		68	58-130			
Endosulfan I	0.0924	0.0019	0.050	ug/l	0.200		46	57-141			Q-ME
Endosulfan II	0.104	0.0019	0.050	ug/l	0.200		52	22-171			
Endosulfan sulfate	0.149	0.0013	0.050	ug/l	0.200		75	38-132			
Endrin	0.159	0.0017	0.050	ug/l	0.200		80	51-130			
Endrin aldehyde	0.149	0.0019	0.050	ug/l	0.200		74	18-130			

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Quality Control Results

(Continued)

Chlorinated Pesticides and/or PCBs by GC/ECD (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
LCS (W3C1882-BS1)					**Prepared: 03/22/23**	**Analyzed: 04/18/23**					
gamma-BHC (Lindane)	0.145	0.0015	0.050	ug/l	0.200		72	43-130			
Heptachlor	0.147	0.0023	0.050	ug/l	0.200		73	43-130			
Heptachlor epoxide	0.155	0.0018	0.050	ug/l	0.200		78	57-132			
Methoxychlor	0.202	0.0038	0.050	ug/l	0.200		101	50-130			
Surrogate(s)											
Decachlorobiphenyl	*0.103*			*ug/l*	*0.100*		*103*	*33-133*			
Tetrachloro-meta-xylene	*0.0646*			*ug/l*	*0.100*		*65*	*32-130*			
Matrix Spike (W3C1882-MS1)	**Source: 3C15121-01**				**Prepared: 03/22/23**	**Analyzed: 04/18/23**					
4,4´-DDD	0.179	0.0027	0.050	ug/l	0.195	*ND*	92	31-141			
4,4´-DDE	0.157	0.0018	0.050	ug/l	0.195	*ND*	81	30-145			
4,4´-DDT	0.196	0.0028	0.050	ug/l	0.195	*ND*	101	25-160			
Aldrin	0.141	0.0010	0.050	ug/l	0.195	*ND*	73	42-140			
alpha-BHC	0.154	0.0011	0.050	ug/l	0.195	*ND*	79	37-140			
beta-BHC	0.145	0.0015	0.050	ug/l	0.195	*ND*	75	17-147			
delta-BHC	0.162	0.0019	0.050	ug/l	0.195	*ND*	83	19-140			
Dieldrin	0.142	0.0017	0.050	ug/l	0.195	*ND*	73	36-146			
Endosulfan I	0.0966	0.0019	0.050	ug/l	0.195	*ND*	50	45-153			
Endosulfan II	0.113	0.0019	0.050	ug/l	0.195	*ND*	58	17-202			
Endosulfan sulfate	0.166	0.0013	0.050	ug/l	0.195	*ND*	85	26-144			
Endrin	0.173	0.0017	0.050	ug/l	0.195	*ND*	89	30-147			
Endrin aldehyde	0.154	0.0019	0.050	ug/l	0.195	*ND*	79	11-140			
gamma-BHC (Lindane)	0.154	0.0015	0.050	ug/l	0.195	*ND*	79	32-140			
Heptachlor	0.160	0.0023	0.050	ug/l	0.195	*ND*	82	34-140			
Heptachlor epoxide	0.165	0.0018	0.050	ug/l	0.195	*ND*	85	37-142			
Methoxychlor	0.235	0.0038	0.050	ug/l	0.195	*ND*	121	50-140			
Surrogate(s)											
Decachlorobiphenyl	*0.110*			*ug/l*	*0.0973*		*113*	*33-133*			
Tetrachloro-meta-xylene	*0.0673*			*ug/l*	*0.0973*		*69*	*32-130*			
Matrix Spike Dup (W3C1882-MSD1)	**Source: 3C15121-01**				**Prepared: 03/22/23**	**Analyzed: 04/18/23**					
4,4´-DDD	0.158	0.0027	0.050	ug/l	0.196	*ND*	81	31-141	12	30	
4,4´-DDE	0.145	0.0018	0.050	ug/l	0.196	*ND*	74	30-145	7	30	
4,4´-DDT	0.162	0.0028	0.050	ug/l	0.196	*ND*	82	25-160	19	30	
Aldrin	0.135	0.0010	0.050	ug/l	0.196	*ND*	69	42-140	5	30	
alpha-BHC	0.142	0.0011	0.050	ug/l	0.196	*ND*	72	37-140	8	30	
beta-BHC	0.133	0.0015	0.050	ug/l	0.196	*ND*	68	17-147	9	30	
delta-BHC	0.149	0.0019	0.050	ug/l	0.196	*ND*	76	19-140	8	30	
Dieldrin	0.133	0.0017	0.050	ug/l	0.196	*ND*	68	36-146	7	30	
Endosulfan I	0.0902	0.0019	0.050	ug/l	0.196	*ND*	46	45-153	7	30	
Endosulfan II	0.103	0.0019	0.050	ug/l	0.196	*ND*	53	17-202	9	30	
Endosulfan sulfate	0.148	0.0013	0.050	ug/l	0.196	*ND*	76	26-144	11	30	
Endrin	0.159	0.0017	0.050	ug/l	0.196	*ND*	81	30-147	8	30	
Endrin aldehyde	0.138	0.0019	0.050	ug/l	0.196	*ND*	70	11-140	11	30	
gamma-BHC (Lindane)	0.143	0.0015	0.050	ug/l	0.196	*ND*	73	32-140	8	30	

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Quality Control Results

(Continued)

Chlorinated Pesticides and/or PCBs by GC/ECD (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Matrix Spike Dup (W3C1882-MSD1)	**Source: 3C15121-01**				**Prepared: 03/22/23**	**Analyzed: 04/18/23**					
Heptachlor	0.145	0.0023	0.050	ug/l	0.196	*ND*	74	34-140	10	30	
Heptachlor epoxide	0.153	0.0018	0.050	ug/l	0.196	*ND*	78	37-142	7	30	
Methoxychlor	0.196	0.0038	0.050	ug/l	0.196	*ND*	100	50-140	19	30	
Surrogate(s)											
Decachlorobiphenyl	*0.0980*			*ug/l*	*0.0980*		*100*	*33-133*			
Tetrachloro-meta-xylene	*0.0624*			*ug/l*	*0.0980*		*64*	*32-130*			

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Notes and Definitions

Item	Definition
Q-ME	Acceptable QC with marginal exceedance
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference
Source	Sample that was matrix spiked or duplicated.

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

3C16136

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3C16136

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210897.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131449-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/6/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230316-2 (570-131449-3)	3/16/23	09:15 Pacific		Water						X	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/16/23 1558	EC		03/16/23 1604	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2c T0278

ICOC No:
570-210897

Containers

Count	Container Type	Preservative
5	Amber Glass 1 liter - unpreserved	None
5	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (EPA 608 - Pesticides/PCBs - PP list)	Level IV package, MDL, EQUIS 5C
1	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	525.2- 24 hour extraction for Diaznon and Chyloriphrous- level IV package needed.
1	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV package, MDL, EQUIS 5C
1, 3	SUBCONTRACT	SUB (VOCs-2CVE only (E624))	Level IV package, MDL, EQUIS 5C

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: **3C16136**
WKO Logged by: Jerico Bolotano
Samples Checked by: Jerico Bolotano

Date/Time Received: 03/16/23 @ 16:04
# of Samples: 02
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
		☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	5.3°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	Wet			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
		☐	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot# 2071882
	Free Chlorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot# 061221E
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot# / pH Reading:
	pH adjusted for O&G	☐	☐	☐	Acid Lot# / Amt added:
	Project Manager notified?	☐	☐	☐	

PM Comments

Sample Receipt Checklist Prepared by:
Signature: Jerico Bolotano Date: 03/19/23

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210897.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131449-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/6/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water				X	X	X	X	8	See Attached Instructions
TB-20230316-2 (570-131449-3)	3/16/23	09:15 Pacific		Water							X	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/16/23 1558	EC		03/16/23 1604	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2c TV278

Loc: 570
131449

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICK	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)		
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly		
EPBMC_20230316	3/16/23	0915	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-1	3/16/23	0915	TB	WM	2	N	N														x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5		

EDBFJUX

Field Readings	
Meter Serial #	
Time of Readings	0915
DO (mg/L)	5.33
pH	7.17
Temp (°C/F)	73.5
TRC (mg/L)	0.00
Checked by:	
Date/Time:	3-16-2023/1040

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/16/23 1205	Received by: EC
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:

Date/Time: 3/16/23 1205
Date/Time: 03/16/23 1745
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICE	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM232OB (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM232OB (Hardness))	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBMC_20230316	3/16/23	0915	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-2	3/16/23	0915	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H&A	Date/Time: 3-16-23 1205	Receiv	Date/Time: 3/16/23 1205
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Receiv	Date/Time: 03/16/23 1745
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.0/2.0 , 2.3/2.3 SCII

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131449-5

Login Number: 131449
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 11:45:31 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131449-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

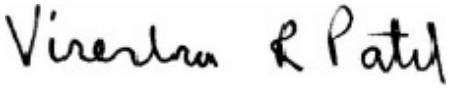
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/9/2023 11:45:31 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Sample Summary 7
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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131449-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131449-6

Comments
No additional comments.

Receipt
The samples were received on 3/16/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
/ roSectBite: FoeinL ggRMIgEA and FW/

Job ID: 570-12199P-j

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-12199P-1	_/ FWC34042021j	6 ater	02B3j B42 0P:15	02B3j B42 18:00

aquatic bioassay & consulting laboratories, inc

March 31, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	EPBMC_20230316
DATE RECEIVED:	16 March - 2023
ABC LAB. NO.:	CSE0323.209

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = -0.60 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Report Date: 31 Mar-23 12:25 (p 1 of 1)
Test Code/ID: CSE0323.209 / 16-8970-1043

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	18-2341-4586	Test Type:	Reproduction-Survival (7d)	Analyst:			
Start Date:	16 Mar-23 09:15	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water		
Ending Date:	23 Mar-23 14:47	Species:	Ceriodaphnia dubia	Brine:	Not Applicable		
Test Length:	7d 6h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO	Age:	<24
Sample ID:	08-0658-6271	Code:	CSE0323.209	Project:	129095-020-001-06		
Sample Date:	16 Mar-23 09:15	Material:	Sample Water	Source:	Bioassay Report		
Receipt Date:	16 Mar-23 13:35	CAS (PC):		Station:	EPBMC_20230316		
Sample Age:	--- (5.3 °C)	Client:	Eurofins Calscience				

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
01-2741-7846	Reproduction	Equal Variance t Two-Sample Test	0.5580	100% passed reproduction	1
06-2090-1976	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
01-2741-7846	Reproduction	Control Resp	25	15	<<	Yes	Passes Criteria
06-2090-1976	Reproduction	Control Resp	25	15	<<	Yes	Passes Criteria
01-2741-7846	Reproduction	PMSD	0.06889	0.13	0.47	Yes	Below Criteria

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	25	23.26	26.74	19	32	0.8303	3.713	14.85%	0.00%
100		20	25.15	23.9	26.4	19	30	0.595	2.661	10.58%	-0.60%

Reproduction Detail

MD5: DAE49406D6EFBB73549FEA49FC419090

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	20	22	25	29	30	19	26	32
		31	25	25	28	27	21	27	23	22	24
100		24	27	25	19	23	27	28	30	27	24
		25	24	27	22	30	23	24	26	24	24

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	01-2741-7846	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	30 Mar-23 14:27	Analysis:	Parametric-Two Sample	Status Level:	1
Edit Date:	30 Mar-23 14:26	MD5 Hash:	DAE49406D6EFBB73549FEA49FC419090	Editor ID:	002-375-739-9
Batch ID:	18-2341-4586	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	16 Mar-23 09:15	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	23 Mar-23 14:47	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 6h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	08-0658-6271	Code:	CSE0323.209	Project:	129095-020-001-06
Sample Date:	16 Mar-23 09:15	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	16 Mar-23 13:35	CAS (PC):		Station:	EPBMC_20230316
Sample Age:	--- (5.3 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result	PMSD
Untransformed	C > T	100% passed reproduction endpoint	6.89%

Equal Variance t Two-Sample Test

Control	vs	Conc-%	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		100	38	-0.1468	1.686	1.722	CDF	0.5580	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	25	15	<<	Yes	Passes Criteria
PMSD	0.06889	0.13	0.47	Yes	Below Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.225	0.225	1	0.02156	0.8840	Non-Significant Effect
Error	396.55	10.4355	38			
Total	396.775		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	2.474	7.353	0.1241	Equal Variances
	Mod Levene Equality of Variance Test	2.433	7.353	0.1271	Equal Variances
	Variance Ratio F Test	1.947	3.432	0.1554	Equal Variances
Distribution	Anderson-Darling A2 Test	0.3491	3.878	0.4788	Normal Distribution
	D'Agostino Kurtosis Test	0.358	2.576	0.7203	Normal Distribution
	D'Agostino Skewness Test	0.5945	2.576	0.5522	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.4816	9.21	0.7860	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1	0.1617	0.3804	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9788	0.9236	0.6439	Normal Distribution

Reproduction Summary

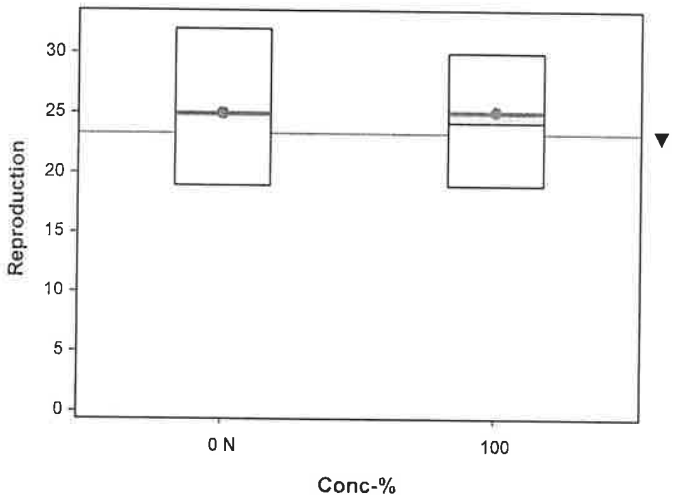
Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	25	23.26	26.74	25	19	32	0.8303	14.85%	0.00%
100		20	25.15	23.9	26.4	24.25	19	30	0.595	10.58%	-0.60%

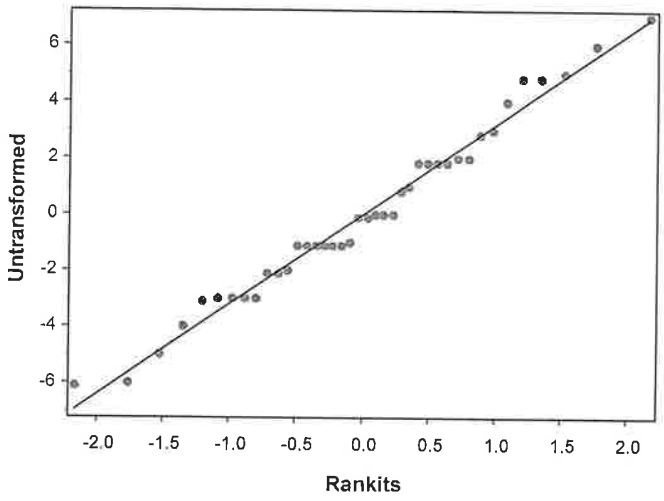
Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	20	22	25	29	30	19	26	32
		31	25	25	28	27	21	27	23	22	24
100		24	27	25	19	23	27	28	30	27	24
		25	24	27	22	30	23	24	26	24	24

Analysis ID:	01-2741-7846	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	30 Mar-23 14:27	**Analysis:**	Parametric-Two Sample	**Status Level:**	1
Edit Date:	30 Mar-23 14:26	**MD5 Hash:**	DAE49406D6EFBB73549FEA49FC419090	**Editor ID:**	002-375-739-9

Graphics





Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	06-2090-1976	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	31 Mar-23 12:23	Analysis:	Parametric Bioequivalence-Two Sample	Status Level:	1
Edit Date:	30 Mar-23 14:26	MD5 Hash:	DAE49406D6EFBB73549FEA49FC419090	Editor ID:	002-375-739-9
Batch ID:	18-2341-4586	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	16 Mar-23 09:15	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	23 Mar-23 14:47	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 6h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	08-0658-6271	Code:	CSE0323.209	Project:	129095-020-001-06
Sample Date:	16 Mar-23 09:15	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	16 Mar-23 13:35	CAS (PC):		Station:	EPBMC_20230316
Sample Age:	--- (5.3 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	37	7.43	0.8514	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	25	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.225	0.225	1	0.02156	0.8840	Non-Significant Effect
Error	396.55	10.4355	38			
Total	396.775		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	2.474	7.353	0.1241	Equal Variances
	Mod Levene Equality of Variance Test	2.433	7.353	0.1271	Equal Variances
	Variance Ratio F Test	1.947	3.432	0.1554	Equal Variances
Distribution	Anderson-Darling A2 Test	0.3491	3.878	0.4788	Normal Distribution
	D'Agostino Kurtosis Test	0.358	2.576	0.7203	Normal Distribution
	D'Agostino Skewness Test	0.5945	2.576	0.5522	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.4816	9.21	0.7860	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1	0.1617	0.3804	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9788	0.9236	0.6439	Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	25	23.26	26.74	25	19	32	0.8303	14.85%	0.00%
100		20	25.15	23.9	26.4	24.25	19	30	0.595	10.58%	-0.60%

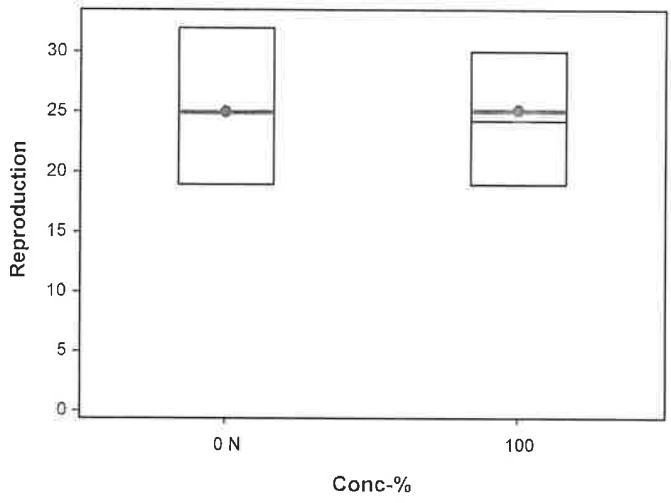
Reproduction Detail

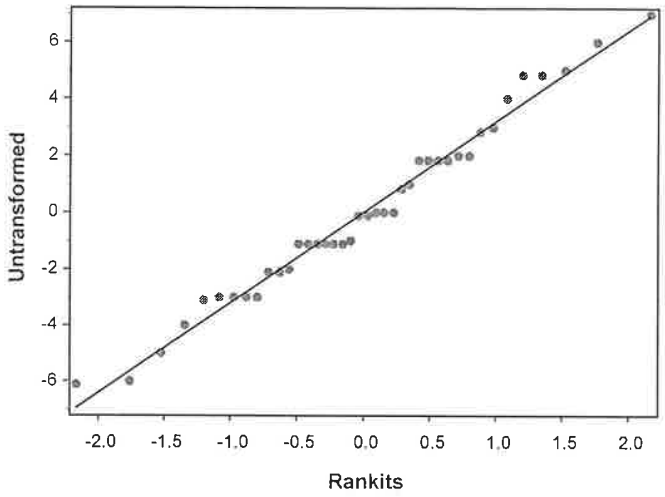
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	20	22	25	29	30	19	26	32
		31	25	25	28	27	21	27	23	22	24
100		24	27	25	19	23	27	28	30	27	24
		25	24	27	22	30	23	24	26	24	24

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	06-2090-1976	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	31 Mar-23 12:23	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	30 Mar-23 14:26	**MD5 Hash:**	DAE49406D6EFBB73549FEA49FC419090	**Editor ID:**	002-375-739-9

Graphics





CETIS Measurement Report

Report Date: 31 Mar-23 12:25 (p 1 of 1)
Test Code/ID: CSE0323.209 / 16-8970-1043

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	18-2341-4586	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	16 Mar-23 09:15	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	23 Mar-23 14:47	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 6h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	08-0658-6271	**Code:**	CSE0323.209	**Project:**	129095-020-001-06
Sample Date:	16 Mar-23 09:15	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	16 Mar-23 13:35	**CAS (PC):**		**Station:**	EPBMC_20230316
Sample Age:	--- (5.3 °C)	**Client:**	Eurofins Calscience		

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60	60	60	60	60	0	0	0.00%	0
100		8	232	232	232	232	232	0	0	0.00%	0
Overall		16	146	98.67	193.3	60	232	22.21	88.82	60.84%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	370.6	364.6	376.7	362	387	0.9062	7.249	1.96%	0
100		8	1582	1574	1591	1561	1589	1.269	10.15	0.64%	0
Overall		16	976.4	643	1310	362	1589	156.4	625.7	64.08%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.9	7.745	8.055	7.6	8.2	0.02315	0.1852	2.34%	0
100		8	7.863	7.819	7.906	7.8	7.9	0.006468	0.05175	0.66%	0
Overall		16	7.881	7.811	7.952	7.6	8.2	0.03319	0.1328	1.68%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
100		8	486	486	486	486	486	0	0	0.00%	0
Overall		16	283	171.3	394.7	80	486	52.41	209.7	74.08%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.963	7.9	8.025	7.8	8	0.0093	0.0744	0.93%	0
100		8	7.863	7.774	7.951	7.6	7.9	0.01326	0.1061	1.35%	0
Overall		16	7.913	7.858	7.967	7.6	8	0.02562	0.1025	1.30%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24	24	24	24	24	0	0	0.00%	0
Overall		16	24	24	24	24	24	0	0	0.00%	0 (0%)

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA *	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBMC_20230316	3/16/23	0915	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-2	3/16/23	0915	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Temp. deg. C = 5.3 °C

Chlorine (mg/L) = <0.1

NH3 (mg/L) = <0.1

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

* Hand-delivered to ABC with this copy of COC

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H&A	Date/Time: 3/16/23 1335	Received by:	Date/Time: 3/16/23 1335
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 7 March - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 15.00 ug/l
EC50 = 20.00 ug/l

ENDPOINT: REPRODUCTION

NOEC = 10.00 ug/l

IC25 = 14.63 ug/l
IC50 = 19.75 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	04-0989-8037	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	07 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Mar-23 14:53	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	01-9737-1339	**Code:**	CER030723	**Project:**	REF TOX
Sample Date:	07 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
12-3601-0837	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test	✓	10	30	17.32	---	1
18-1287-1922	Reproduction	Dunnett Multiple Comparison Test	✓	10	30	17.32	10.0%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
06-1569-8175	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	13	13	13	1
				EC20	14	14	14	
				EC25	15	15	15	
				EC40	18	18	18	
				EC50	20	20	20	
07-2699-2510	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	12.58	11.21	13	1
			✓	IC20	13.61	12.31	14	
			✓	IC25	14.63	13.42	15	
			✓	IC40	17.7	16.73	18	
			✓	IC50	19.75	18.94	20	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
06-1569-8175	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
12-3601-0837	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
07-2699-2510	Reproduction	Control Resp	22.9	15	<<	Yes	Passes Criteria
18-1287-1922	Reproduction	Control Resp	22.9	15	<<	Yes	Passes Criteria
18-1287-1922	Reproduction	PMSD	0.1001	0.13	0.47	Yes	Below Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	22.9	21.57	24.23	20	26	0.5859	1.853	8.09%	0.00%
3		10	22.5	20.26	24.74	18	27	0.9916	3.136	13.94%	1.75%
5		10	22.3	20.95	23.65	20	25	0.5972	1.889	8.47%	2.62%
10		10	22.4	20.61	24.19	19	28	0.7916	2.503	11.18%	2.18%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail

MD5: E68F14682D021D024F00396964E3E9BD

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail

MD5: 2815D12133967AE436D4FC557F35CDBA

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	18-1287-1922	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	2815D12133967AE436D4FC557F35CDBA	**Editor ID:**	007-730-798-8
Batch ID:	04-0989-8037	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	07 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Mar-23 14:53	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	01-9737-1339	**Code:**	CER030723	**Project:**	REF TOX
Sample Date:	07 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	10	30	17.32	---	2.292	10.01%

Dunnett Multiple Comparison Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	MSD	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	0.3722	2.133	2.292	CDF	0.5995	Non-Significant Effect
		5	18	0.5583	2.133	2.292	CDF	0.5168	Non-Significant Effect
		10	18	0.4652	2.133	2.292	CDF	0.5584	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	22.9	15	<<	Yes	Passes Criteria
PMSD	0.1001	0.13	0.47	Yes	Below Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	2.075	0.691667	3	0.1198	0.9479	Non-Significant Effect
Error	207.9	5.775	36			
Total	209.975		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	3.337	11.34	0.3425	Equal Variances
	Levene Equality of Variance Test	1.545	4.377	0.2195	Equal Variances
	Mod Levene Equality of Variance Test	1.103	4.377	0.3604	Equal Variances
Distribution	Anderson-Darling A2 Test	0.2615	3.878	0.7332	Normal Distribution
	D'Agostino Kurtosis Test	0.1221	2.576	0.9028	Normal Distribution
	D'Agostino Skewness Test	0.9793	2.576	0.3274	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	0.974	9.21	0.6145	Normal Distribution
	Kolmogorov-Smirnov D Test	0.08088	0.1617	0.7382	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9833	0.9236	0.8103	Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	22.9	21.57	24.23	22.25	20	26	0.5859	8.09%	0.00%
3		10	22.5	20.26	24.74	22	18	27	0.9916	13.94%	1.75%
5		10	22.3	20.95	23.65	22.6	20	25	0.5972	8.47%	2.62%
10		10	22.4	20.61	24.19	22.75	19	28	0.7916	11.18%	2.18%
30		10	0	0	0	0	0	0	0	---	100.00%
50		10	0	0	0	0	0	0	0	---	100.00%

Ceriodaphnia 7-d Survival and Reproduction Test

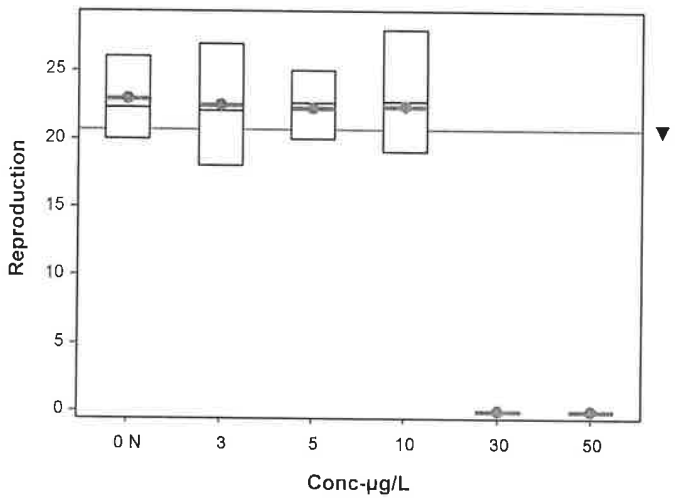
Aquatic Bioassay & Consulting Labs, Inc.

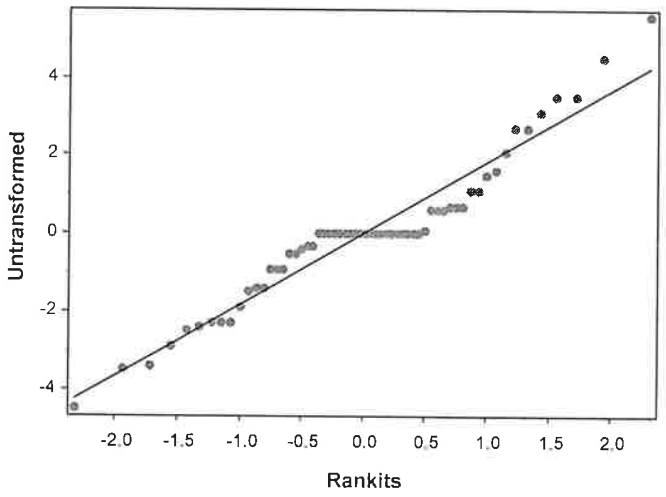
Analysis ID:	18-1287-1922	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Parametric-Control vs Treatments	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	2815D12133967AE436D4FC557F35CDBA	**Editor ID:**	007-730-798-8

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Graphics





CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	06-1569-8175	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	22 Mar-23 7:40	MD5 Hash:	E68F14682D021D024F00396964E3E9BD	Editor ID:	007-730-798-8
Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	13	13	13
EC20	14	14	14
EC25	15	15	15
EC40	18	18	18
EC50	20	20	20

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣA/ΣB	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	---	100.00%	0/10	0.0000	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

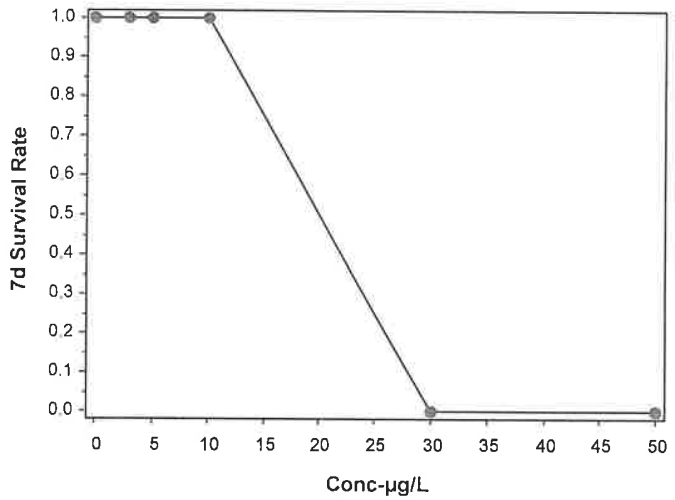
7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	06-1569-8175	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	007-730-798-8

Graphics



Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-2699-2510	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	22 Mar-23 7:40	MD5 Hash:	2815D12133967AE436D4FC557F35CDBA	Editor ID:	007-730-798-8
Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	401085	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	22.9	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	12.58	11.21	13
IC20	13.61	12.31	14
IC25	14.63	13.42	15
IC40	17.7	16.73	18
IC50	19.75	18.94	20

Reproduction Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	22.9	22.25	20	26	8.09%	0.00%	22.9	0.00%
3		10	22.5	22	18	27	13.94%	1.75%	22.5	1.75%
5		10	22.3	22.6	20	25	8.47%	2.62%	22.35	2.40%
10		10	22.4	22.75	19	28	11.18%	2.18%	22.35	2.40%
30		10	0	0	0	0	---	100.00%	0	100.00%
50		10	0	0	0	0	---	100.00%	0	100.00%

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	22	22	25	26	24	24	22	20	21	23
3		27	26	24	26	22	22	19	20	18	21
5		23	23	25	22	20	20	20	23	25	22
10		23	20	24	22	28	23	21	23	19	21
30		0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	07-2699-2510	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	2815D12133967AE436D4FC557F35CDBA	**Editor ID:**	007-730-798-8

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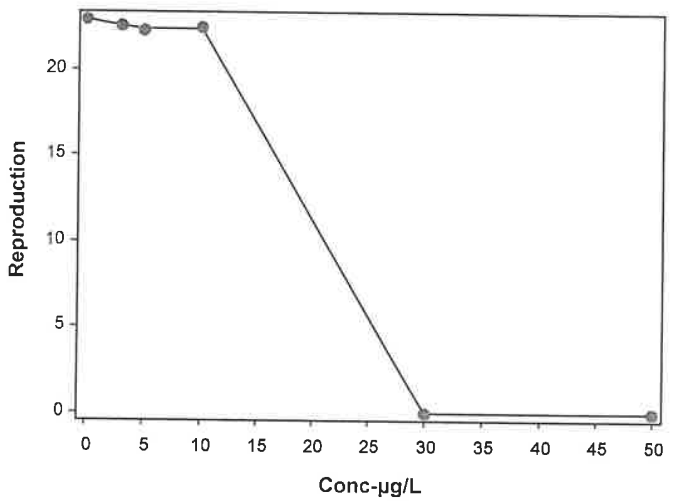


CETIS Analytical Report

Report Date: 22 Mar-23 13:33 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-3601-0837	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	22 Mar-23 7:40	MD5 Hash:	E68F14682D021D024F00396964E3E9BD	Editor ID:	007-730-798-8
Batch ID:	04-0989-8037	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	07 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	14 Mar-23 14:53	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d 0h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	01-9737-1339	Code:	CER030723	Project:	REF TOX
Sample Date:	07 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0000	Exact	2.7E-05	Significant Effect
		50*	0.0000	Exact	2.7E-05	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		0	10	10	0.0000	1.0000	100.00%
50		0	10	10	0.0000	1.0000	100.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%
50		10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	---	100.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Ceriodaphnia 7-d Survival and Reproduction Test

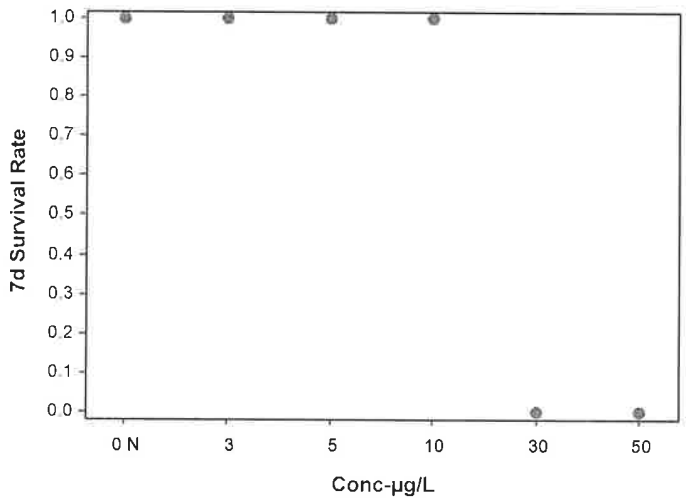
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	12-3601-0837	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	22 Mar-23 7:44	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	22 Mar-23 7:40	**MD5 Hash:**	E68F14682D021D024F00396964E3E9BD	**Editor ID:**	007-730-798-8

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1
50		0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Report Date: 22 Mar-23 13:34 (p 1 of 2)
Test Code/ID: CER030723 / 11-8200-9593

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	04-0989-8037	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	07 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	14 Mar-23 14:53	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d 0h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	01-9737-1339	**Code:**	CER030723	**Project:**	REF TOX
Sample Date:	07 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	63	63	63	63	63	0	0	0.00%	0
50		4	62	62	62	62	62	0	0	0.00%	0
Overall		12	62.67	62.35	62.98	62	63	0.1421	0.4924	0.79%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	373.5	370.6	376.4	369	379	0.4278	3.423	0.92%	0
3		8	369.2	366.6	371.9	362	373	0.3939	3.151	0.85%	0
5		8	367.2	364.7	369.8	360	369	0.3824	3.059	0.83%	0
10		8	366.6	363.9	369.4	359	369	0.4115	3.292	0.90%	0
30		6	363.7	360.1	367.3	357	367	0.5741	3.445	0.95%	0
50		3	361	352	370	357	364	1.202	3.606	1.00%	0
Overall		41	367.8	366.3	369.3	357	379	0.7447	4.769	1.30%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.763	7.495	8.03	7	8	0.04005	0.3204	4.13%	0
3		8	7.738	7.506	7.969	7.1	8	0.03468	0.2774	3.59%	0
5		8	7.712	7.454	7.971	7	8	0.03864	0.3091	4.01%	0
10		8	7.738	7.477	7.998	7	8	0.03892	0.3114	4.02%	0
30		6	7.8	7.706	7.894	7.7	7.9	0.01491	0.08944	1.15%	0
50		3	7.8	7.552	8.048	7.7	7.9	0.03333	0.1	1.28%	0
Overall		41	7.751	7.669	7.833	7	8	0.04059	0.2599	3.35%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	96	96	96	96	96	0	0	0.00%	0
50		4	99	99	99	99	99	0	0	0.00%	0
Overall		12	97	96.06	97.94	96	99	0.4264	1.477	1.52%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8	8	8	8	8	0	0	0.00%	0
3		8	8	8	8	8	8	0	0	0.00%	0
5		8	8	8	8	8	8	0	0	0.00%	0
10		8	7.975	7.936	8.014	7.9	8	0.005786	0.04629	0.58%	0
30		6	7.95	7.893	8.007	7.9	8	0.009127	0.05476	0.69%	0
50		3	7.967	7.823	8.11	7.9	8	0.01924	0.05773	0.72%	0
Overall		41	7.985	7.974	7.997	7.9	8	0.005589	0.03578	0.45%	0 (0%)

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		6	24	24	24	24	24	0	0	0.00%	0
50		3	24	24	24	24	24	0	0	0.00%	0
Overall		41	24	24	24	24	24	0	0	0.00%	0 (0%)

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210897.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131449-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/6/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water				X	X	X	X	8	See Attached Instructions
TB-20230316-2 (570-131449-3)	3/16/23	09:15 Pacific		Water							X	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/16/23 1558	EC		03/16/23 1604	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2c TV2F5

Loc: 570
131449

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICK	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	___1___ of ___2___ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)		
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly		
EPBMC_20230316	3/16/23	0915	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-1	3/16/23	0915	TB	WM	2	N	N														x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5		

EDBFJUX

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings	
Meter Serial #	
Time of Readings	0915
DO (mg/L)	5.33
pH	7.17
Temp (°C/F)	53.5
TRC (mg/L)	0.00
Checked by:	
Date/Time:	3-16-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for ___6___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/16/23 1205	Received by: EC
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:

Received by: EC — Date/Time: 3/16/23 1205
Received by: — Date/Time: 03/16/23 1745
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/9/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICE	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBMC_20230316	3/16/23	0915	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-2	3/16/23	0915	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H&A	Date/Time: 3-16-23 1205	Receiv	Date/Time: 3/16/23 1205
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Receiv	Date/Time: 03/16/23 1745
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

2.0/2.0 , 2.3/2.3 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131449-6

Login Number: 131449
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:42:50 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131449-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

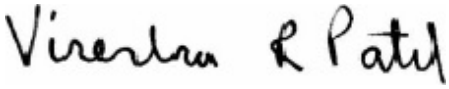
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Sample Summary 7
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-7

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131449-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131449-7

Comments
No additional comments.

Receipt
The samples were received on 3/16/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0º C and 2.3º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2 - "Wastewater" matrix: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-7

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131449-1	EPBMC_20230316	Water	03/16/23 09:15	03/16/23 18:00

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322307100
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/18/2023
Analyzed: 03/30/2023

Proj: 570-211014.1/ 570-131449-7/ 57014595/ Boeing SSFL ISRA and BMP - NEW

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS				
					Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
							MFL (million fibers per liter)		
EPBMC_20230316 (570-131449-1) 322307100-0001	3/20/2023 12:00 PM	0.10	1288	0.2580	≥ 0.5 µm	None Detected	ND	50.00	<50.00	0.00 - 180.00
					> 10 µm only	None Detected	ND	50.00	<50.00	0.00 - 180.00

Collection Date/Time: *03/16/2023 09:15 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Feng Liang (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 03/30/2023 18:17:59

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

#322307100

Chain of Custody Record

eurofins | Environment Testing

4/9/2023

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211014.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131449-7
Address: 520 Mission Street, ,	Due Date Requested: 3/30/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						1, 1 C
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	03/17/23 7:55	EC	Sara Martinez (Fx) Sara Martinez	3.18.23 11:25	LA Testing
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

OrderID: 322307100

#322307100

4/9/2023

ICOC No:
570-211014

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Level IV package needed. Screen as Wastewater matrix

Page 2 of 14

OrderID: 322307100

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210897.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131449-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/6/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water				X	X	X	X	8	See Attached Instructions
TB-20230316-2 (570-131449-3)	3/16/23	09:15 Pacific		Water							X	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/16/23 1558	EC		03/16/23 1604	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2c TV2F5

Loc: 570
131449

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICK	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	___1___ of ___2___ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBMC_20230316	3/16/23	0915	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x		
																										EDBFJUX
																										Field Readings
																										Meter Serial #
TB_20230316-1	3/16/23	0915	TB	WM	2	N	N														x					Time of Readings 0915
																										DO (mg/L) 5.33
																										pH 7.17
																										Temp (°C/F) 23.5
																										TRC (mg/L) 0.00
																										Checked by:
																										Date/Time: 3-16-2023/1040
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for ___6___ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/16/23 1205	Received by: EC	Date/Time: 3/16/23 1205
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Received by:	Date/Time: 03/16/23 1745
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/9/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICE	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBMC_20230316	3/16/23	0915	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-2	3/16/23	0915	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H&A	Date/Time: 3-16-23 1205	Receiv	Date/Time: 3/16/23 1205
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Receiv	Date/Time: 03/16/23 1745
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.0/2.0 , 2.3/2.3 SCII

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131449-7

Login Number: 131449
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/25/2023 10:17:21 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-131449-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

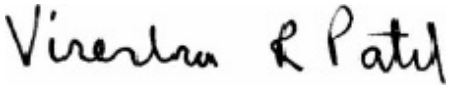
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
4/25/2023 10:17:21 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Certification Summary 37
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131449-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131449-8

Comments
No additional comments.

Receipt
The samples were received on 3/16/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.0º C and 2.3º C.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 606931
The matrix spike (MS) recoveries for Gross Alpha were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.
(570-131459-Q-1-G MS)

Method 900.0: Gross Alpha and Gross Beta batch 606931
The detection goal was not met for the sample duplicate. However the purpose of the DUP is to demonstrate batch precision. The precision was within control limits demonstrating no adverse effect from the discrepancy.

(570-131459-Q-1-I DU)

Method 900.0: Gross Alpha and Gross Beta batch 606931
The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass: EPBMC_20230316 (570-131449-1). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 606931
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230316 (570-131449-1), (LCS 160-606931/2-A), (LCSB 160-606931/3-A), (MB 160-606931/1-A), (570-131459-Q-1-F), (570-131459-Q-1-I DU), (570-131459-Q-1-G MS) and (570-131459-Q-1-H MSBT)

Method 901.1: Gamma Prep Batch 160-604735
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227

Job ID: 570-131449-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBMC_20230316 (570-131449-1), (570-129084-R-1-F) and (570-129084-R-1-H DU)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBMC_20230316 (570-131449-1), (570-131073-AT-1-B) and (570-131073-AT-1-C DU)

Methods 903.0, 9315: Radium-226 batch 605215
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230316 (570-131449-1), (LCS 160-605215/2-A), (LCSD 160-605215/3-A) and (MB 160-605215/1-A)

Method 903.0: Radium-226 batch 605061

Job ID: 570-131449-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230316 (570-131449-1), (LCS 160-605061/2-A), (MB 160-605061/1-A), (660-127969-B-7-A) and (660-127969-D-7-A DU)

Method 904.0: Radium-228 batch 605065
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: EPBMC_20230316 (570-131449-1). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 605065
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230316 (570-131449-1), (LCS 160-605065/2-A), (MB 160-605065/1-A), (660-127969-B-7-B) and (660-127969-D-7-B DU)

Methods 904.0, 9320: Radium-228 batch 605216
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230316 (570-131449-1), (LCS 160-605216/2-A), (LCSD 160-605216/3-A) and (MB 160-605216/1-A)

Method 904.0: Radium 228 batch 605065
The method blank (MB) has activity above the MDC and RL. The following associated samples are below the reporting limit for the contaminant therefore, re-analysis is not required. The data have been reported.

(MB 160-605065/1-A)

Method 904.0: Radium-228 batch 608035
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: EPBMC_20230316 (570-131449-1). Analytical results are reported with the detection limit achieved.

Method 904.0: Radium-228 batch 608035
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.EPBMC_20230316 (570-131449-1), (LCS 160-608035/2-A), (LCSD 160-608035/3-A) and (MB 160-608035/1-A)

Method 905: Strontium-90 batch 605090
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230316 (570-131449-1), (LCS 160-605090/2-A), (MB 160-605090/1-A), (380-41106-B-1-A) and (380-41106-C-1-A DU)

Method 905: Strontium-90 batch 606565
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230316 (570-131449-1), (LCS 160-606565/2-A), (LCSD 160-606565/3-A) and (MB 160-606565/1-A)

Method 906.0: Tritium 607088
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPBMC_20230316 (570-131449-1), (LCS 160-607088/2-A), (MB 160-607088/1-A), (160-49538-A-1-A), (160-49538-A-1-C DU), (570-131459-R-1-B) and (570-131459-R-1-C MS)

Job ID: 570-131449-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method A-01-R: Isotopic Uranium batch 605729
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230316 (570-131449-1), (LCS 160-605729/2-A), (MB 160-605729/1-A) and (570-131449-AX-1-C DU)

Method A-01-R: Isotopic Uranium batch 606930
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230316 (570-131449-1), (LCS 160-606930/2-A), (MB 160-606930/1-A), (570-131940-R-1-E) and (570-131940-R-1-F DU)

Method ExtChrom: Uranium Prep Batch 160-605729:
The following samples were prepared at a reduced aliquot due to discoloration: EPBMC_20230316 (570-131449-1) and (570-131449-AX-1-A DU).

Method ExtChrom: Uranium Prep Batch 160-606930:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBMC_20230316 (570-131449-1).

Method LSC_Dist_Susp:

Method PrecSep_0:

Method PrecSep_0: Radium 228 Prep Batch 160-605216

The following sample was prepared at a reduced aliquot due to Matrix: EPBMC_20230316 (570-131449-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep_0: Radium-228 Prep Batch 160-608035

The following sample was prepared at a reduced aliquot due to Matrix: EPBMC_20230316 (570-131449-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-21:

Method PrecSep-21: Radium 226 Prep Batch 160-605215

The following sample was prepared at a reduced aliquot due to Matrix: EPBMC_20230316 (570-131449-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium 90 Prep Batch 160-605090

The following sample was prepared at a reduced aliquot due to Matrix: EPBMC_20230316 (570-131449-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7: Strontium-90 Prep Batch 606565

The following sample was prepared at a reduced aliquot due to Matrix: EPBMC_20230316 (570-131449-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 570-131449-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Client Sample ID: EPBMC_20230316

Lab Sample ID: 570-131449-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	17.W	G	10.5	10.7	3.00	15.2	pCi/L	04/11/23 15:16	04/14/23 05:22	1
Gross Beta	1W3	G	4.76	5.03	4.00	6.04	pCi/L	04/11/23 15:16	04/14/23 05:22	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	5.47	U G	5.19	5.23	3.00	8.14	pCi/L	04/11/23 15:16	04/14/23 05:22	1
Gross Beta	1.74	U	1.86	1.87	4.00	2.95	pCi/L	04/11/23 15:16	04/14/23 05:22	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: EPA 901.1 - Cesium 127 & Other Gamma Emitters (GS)

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-6.72	U	12.2	12.2	20.0	14.1	pCi/L	03/22/23 16:26	03/30/23 09:28	1
Potassium-40	52.3	U	93.2	93.4		98.4	pCi/L	03/22/23 16:26	03/30/23 09:28	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: EPA 901.1 - Cesium 127 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-2.79	U	8.41	8.41	20.0	9.38	pCi/L	03/28/23 16:33	04/12/23 12:02	1
Potassium-40	26.1	U	70.7	70.8		97.9	pCi/L	03/28/23 16:33	04/12/23 12:02	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: EPA 902.0 - Radium-33W(GFPC)

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-33W	0.709		0.328	0.334	1.00	0.311	pCi/L	03/27/23 09:46	04/19/23 15:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*78.1*		*30 - 110*	*03/27/23 09:46*	*04/19/23 15:08*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: EPA 902.0 - Radium-33W(GFPC) - Dissolved

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.124	U	0.212	0.213	1.00	0.371	pCi/L	03/28/23 09:34	04/19/23 09:54	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*30 - 110*	*03/28/23 09:34*	*04/19/23 09:54*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: EPA 904.0 - Radium-338 (GFPC)

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.08	U G	0.850	0.856	1.00	1.30	pCi/L	04/19/23 09:46	04/24/23 13:44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69.0*		*30 - 110*	*04/19/23 09:46*	*04/24/23 13:44*	*1*
Y Carrier	*81.1*		*30 - 110*	*04/19/23 09:46*	*04/24/23 13:44*	*1*

Method: EPA 904.0 - Radium-338 (GFPC) - Dissolved

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.228	U	0.440	0.441	1.00	0.758	pCi/L	03/28/23 09:54	04/18/23 12:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.8*		*30 - 110*	*03/28/23 09:54*	*04/18/23 12:22*	*1*
Y Carrier	*89.7*		*30 - 110*	*03/28/23 09:54*	*04/18/23 12:22*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.226	U	0.726	0.726	3.00	1.37	pCi/L	03/27/23 13:47	04/10/23 16:39	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*89.2*		*30 - 110*	*03/27/23 13:47*	*04/10/23 16:39*	*1*
Y Carrier	*59.1*		*30 - 110*	*03/27/23 13:47*	*04/10/23 16:39*	*1*

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.514	U	0.401	0.403	3.00	0.626	pCi/L	04/07/23 11:12	04/17/23 19:08	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.1*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:08*	*1*
Y Carrier	*77.4*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:08*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: EPA 90W0 - Tritium, Total (LSC)

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	52.3	U	145	145	500	255	pCi/L	04/12/23 10:37	04/13/23 06:17	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	4.58		1.46	1.48	1.00	0.715	pCi/L	04/11/23 15:09	04/13/23 16:13	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBMC63032021W
Date Collected: 02/1W32 09:15
Date Received: 02/1W32 18:00

Lab Sample ID: 570-121449-1
Matri_: x ater

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	**4.05**		0.791	0.827	1.00	0.337	pCi/L	03/30/23 16:34	04/03/23 20:58	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-131449-1	EPBMC_20230316	78.1
LCS 160-605061/2-A	Lab Control Sample	96.6
LCS 160-605215/2-A	Lab Control Sample	94.8
LCSD 160-605215/3-A	Lab Control Sample Dup	91.0
MB 160-605061/1-A	Method Blank	95.6
MB 160-605215/1-A	Method Blank	94.3

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
		Ba
Lab Sample ID	Client Sample ID	(30-110)
570-131449-1	EPBMC_20230316	91.8

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131449-1	EPBMC_20230316	69.0	81.1
LCS 160-605216/2-A	Lab Control Sample	94.8	81.9
LCS 160-608035/2-A	Lab Control Sample	86.2	86.0
LCSD 160-605216/3-A	Lab Control Sample Dup	91.0	80.7
LCSD 160-608035/3-A	Lab Control Sample Dup	83.0	85.2
MB 160-605216/1-A	Method Blank	94.3	79.3
MB 160-608035/1-A	Method Blank	87.2	83.4

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Ba	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131449-1	EPBMC_20230316	91.8	89.7

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131449-8
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131449-1	EPBMC_20230316	89.2	59.1
LCS 160-605090/2-A	Lab Control Sample	83.8	75.9
LCS 160-606565/2-A	Lab Control Sample	86.3	77.0
LCSD 160-606565/3-A	Lab Control Sample Dup	85.1	69.9
MB 160-605090/1-A	Method Blank	83.0	70.3
MB 160-606565/1-A	Method Blank	86.6	81.9

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-131449-1	EPBMC_20230316	87.1	77.4

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-605729/2-A	Lab Control Sample	38.1
LCS 160-606930/2-A	Lab Control Sample	90.3
MB 160-605729/1-A	Method Blank	46.2
MB 160-606930/1-A	Method Blank	83.9

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-131449-1 DU	EPBMC_20230316	82.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-606931/1-A
Matrix: Water
Analysis Batch: 607421

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606931

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.01986	U	0.378	0.378	3.00	0.779	pCi/L	04/11/23 15:16	04/14/23 20:19	1
Gross Beta	1.580		0.602	0.622	4.00	0.817	pCi/L	04/11/23 15:16	04/14/23 20:19	1

Lab Sample ID: LCS 160-606931/2-A
Matrix: Water
Analysis Batch: 607345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606931

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	58.50		8.40	3.00	1.90	pCi/L	116	75 - 125

Lab Sample ID: LCSB 160-606931/3-A
Matrix: Water
Analysis Batch: 607345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606931

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	72.78		7.81	4.00	0.856	pCi/L	99	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-604735/1-A
Matrix: Water
Analysis Batch: 605378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 604735

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	5.575	U	11.5	11.5	20.0	14.5	pCi/L	03/22/23 16:26	03/29/23 21:25	1
Potassium-40	-139.9	U	180	180		285	pCi/L	03/22/23 16:26	03/29/23 21:25	1

Lab Sample ID: LCS 160-604735/2-A
Matrix: Water
Analysis Batch: 605376

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 604735

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	135500		16100		443	pCi/L	100	75 - 125
Cesium-137	40800	42170		5030	20.0	105	pCi/L	103	75 - 125
Cobalt-60	17800	18660		2230		54.8	pCi/L	105	75 - 125

Lab Sample ID: MB 160-605283/1-A
Matrix: Water
Analysis Batch: 607160

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605283

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.793	U	6.67	6.68	20.0	7.49	pCi/L	03/28/23 16:33	04/12/23 04:01	1
Potassium-40	27.15	U	82.6	82.7		106	pCi/L	03/28/23 16:33	04/12/23 04:01	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-605283/2-A
Matrix: Water
Analysis Batch: 607188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605283

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	139700		16600		562	pCi/L	103	75 - 125
Cesium-137	40800	39690		4740	20.0	156	pCi/L	97	75 - 125
Cobalt-60	17700	17220		2060		78.1	pCi/L	97	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-605061/1-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605061

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02180	U	0.101	0.101	1.00	0.194	pCi/L	03/27/23 09:46	04/19/23 15:04	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*985*		*30 - 110*	*03/27/23 09:47*	*04/19/23 18:04*	*1*

Lab Sample ID: LCS 160-605061/2-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605061

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	10.17		1.15	1.00	0.150	pCi/L	90	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*975*		*30 - 110*

Lab Sample ID: MB 160-605215/1-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605215

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.03007	U	0.106	0.106	1.00	0.240	pCi/L	03/28/23 09:34	04/19/23 09:48	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*945*		*30 - 110*	*03/28/23 09:34*	*04/19/23 09:48*	*1*

Lab Sample ID: LCS 160-605215/2-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605215

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	9.998		1.22	1.00	0.220	pCi/L	88	75 - 125

Method: 903.0 - Radium-226 (GFPC) (Continued)

Lab Sample ID: LCS 160-605215/2-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605215

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	945		30 - 110

Lab Sample ID: LCSD 160-605215/3-A
Matrix: Water
Analysis Batch: 608037

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 605215

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-226			11.3	11.18		1.34	1.00	0.181	pCi/L	99	75 - 125	0.46	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	915		30 - 110

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-605216/1-A
Matrix: Water
Analysis Batch: 607902

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605216

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4303	U	0.335	0.337	1.00	0.514	pCi/L	03/28/23 09:54	04/18/23 12:06	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	945		30 - 110	03/28/23 09:54	04/18/23 12:07	1
Y Carrier	695		30 - 110	03/28/23 09:54	04/18/23 12:07	1

Lab Sample ID: LCS 160-605216/2-A
Matrix: Water
Analysis Batch: 607905

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605216

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.02	6.901		1.03	1.00	0.456	pCi/L	86	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	945		30 - 110
Y Carrier	159		30 - 110

Lab Sample ID: LCSD 160-605216/3-A
Matrix: Water
Analysis Batch: 607905

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 605216

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.02	6.127		0.972	1.00	0.531	pCi/L	76	75 - 125	0.39	1

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCSD 160-605216/3-A
Matrix: Water
Analysis Batch: 607905

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 605216

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	91.0		30 - 110
Y Carrier	105		30 - 110

Lab Sample ID: MB 160-608035/1-A
Matrix: Water
Analysis Batch: 608494

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608035

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1085	U	0.265	0.265	1.00	0.471	pCi/L	04/19/23 09:46	04/24/23 13:42	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	85.7		30 - 110	04/19/23 09:47	04/24/23 13:42	1
Y Carrier	83.4		30 - 110	04/19/23 09:47	04/24/23 13:42	1

Lab Sample ID: LCS 160-608035/2-A
Matrix: Water
Analysis Batch: 608494

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608035

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.01	7.118		1.06	1.00	0.536	pCi/L	89	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	87.5		30 - 110
Y Carrier	87.0		30 - 110

Lab Sample ID: LCSD 160-608035/3-A
Matrix: Water
Analysis Batch: 608494

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 608035

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Radium-228			8.01	8.343		1.19	1.00	0.481	pCi/L	104	75 - 125	0.54	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	89.0		30 - 110
Y Carrier	85.7		30 - 110

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-605090/1-A
Matrix: Water
Analysis Batch: 606669

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605090

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.09802	U	0.194	0.194	3.00	0.333	pCi/L	03/27/23 13:47	04/10/23 16:12	1

Method: 905 - Strontium-90 (GFPC) (Continued)

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	. 35 0		30 - 110	032 62 3 13:46	042102 3 17:1/	1
Y Carrier	605 3		30 - 110	032 62 3 13:46	042102 3 17:1/	1

Lab Sample ID: LCS 160-605090/2-A
Matrix: Water
Analysis Batch: 606671

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605090

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.184		0.800	3.00	0.317	pCi/L	98	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	. 35		30 - 110
Y Carrier	685 9		30 - 110

Lab Sample ID: MB 160-606565/1-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606565

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1675	U	0.204	0.204	3.00	0.337	pCi/L	04/07/23 11:12	04/17/23 19:03	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Sr Carrier	. 75 7		30 - 110	042062 3 11:1/	042162 3 19:03	1
Y Carrier	. 15 9		30 - 110	042062 3 11:1/	042162 3 19:03	1

Lab Sample ID: LCS 160-606565/2-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.570		0.853	3.00	0.305	pCi/L	103	75 - 125		

Carrier	LCS %Yield	LCS Qualifier	Limits
Sr Carrier	. 75 3		30 - 110
Y Carrier	665 0		30 - 110

Lab Sample ID: LCSD 160-606565/3-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.34	7.501		0.887	3.00	0.401	pCi/L	102	75 - 125	0.04	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Sr Carrier	. 85 1		30 - 110
Y Carrier	795 9		30 - 110

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-607088/1-A
Matrix: Water
Analysis Batch: 607810

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607088

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	18.47	U	132	132	500	235	pCi/L	04/12/23 10:37	04/13/23 04:24	1

Lab Sample ID: LCS 160-607088/2-A
Matrix: Water
Analysis Batch: 607810

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607088

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2090	1964		338	500	239	pCi/L	94	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-605729/1-A
Matrix: Water
Analysis Batch: 605912

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605729

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.1686	U	0.206	0.207	1.00	0.300	pCi/L	03/30/23 16:34	04/03/23 20:56	1

Lab Sample ID: LCS 160-605729/2-A
Matrix: Water
Analysis Batch: 605927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605729

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Uranium-234	12.7	13.57		1.98	1.00	0.356	pCi/L	107	75 - 125
Uranium-238	13.0	13.66		1.99	1.00	0.311	pCi/L	105	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-/ 3/	*3. 5*		*30 - 110*

Lab Sample ID: MB 160-606930/1-A
Matrix: Water
Analysis Batch: 607234

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606930

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.09977	U	0.1021	0.1023	1.00	0.128	pCi/L	04/11/23 15:09	04/13/23 16:11	1

Lab Sample ID: LCS 160-606930/2-A
Matrix: Water
Analysis Batch: 607236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606930

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Uranium-234	12.7	12.83		1.51	1.00	0.123	pCi/L	101	75 - 125
Uranium-238	13.0	14.23		1.63	1.00	0.0649	pCi/L	109	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-606930/2-A
Matrix: Water
Analysis Batch: 607236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606930

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-/ 3/	*90*		*30 - 110*

Lab Sample ID: 570-131449-1 DU
Matrix: Water
Analysis Batch: 606001

Client Sample ID: EPBMC_20230316
Prep Type: Dissolved
Prep Batch: 605729

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	4.05			4.632		0.890	1.00	0.268	pCi/L			0.34	1

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Prep Batch: 604735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	Fill_Geo-0	
MB 160-604735/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-604735/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Filtration Batch: 604832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	Filtration	
570-131449-1	EPBMC_20230316	Dissolved	Water	Filtration	
570-131449-1	EPBMC_20230316	Dissolved	Water	Filtration	
570-131449-1	EPBMC_20230316	Dissolved	Water	Filtration	
570-131449-1 DU	EPBMC_20230316	Dissolved	Water	Filtration	

Prep Batch: 605061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	PrecSep-21	
MB 160-605061/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-605061/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 605090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	PrecSep-7	
MB 160-605090/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-605090/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 605215

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	PrecSep-21	604832
MB 160-605215/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-605215/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-605215/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 605216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	PrecSep_0	604832
MB 160-605216/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-605216/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-605216/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	Fill_Geo-0	604832
MB 160-605283/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605283/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	ExtChrom	604832
MB 160-605729/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-605729/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-131449-1 DU	EPBMC_20230316	Dissolved	Water	ExtChrom	604832

Rad

Prep Batch: 606565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	PrecSep-7	604832
MB 160-606565/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-606565/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-606565/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 606930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	ExtChrom	
MB 160-606930/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-606930/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 606931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Dissolved	Water	Evaporation	604832
570-131449-1	EPBMC_20230316	Total/NA	Water	Evaporation	
MB 160-606931/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-606931/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-606931/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 607088

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	LSC_Dist_Susp	
MB 160-607088/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-607088/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Prep Batch: 608035

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131449-1	EPBMC_20230316	Total/NA	Water	PrecSep_0	
MB 160-608035/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-608035/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-608035/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Client Sample ID: EPBMC_20230316

Date Collected: 03/16/23 09:15
Date Received: 03/16/23 18:00

Lab Sample ID: 570-131449-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	Evaporation			64.105 mL	1.0 g	606931	04/11/23 15:16	MST	EET SL
Dissolved	Analysis	900.0		1			607424	04/14/23 05:22	SCB	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			35.215 mL	1.0 g	606931	04/11/23 15:16	MST	EET SL
Total/NA	Analysis	900.0		1			607424	04/14/23 05:22	SCB	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Dissolved	Analysis	901.1		1			607160	04/12/23 12:02	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	604735	03/22/23 16:26	SEH	EET SL
Total/NA	Analysis	901.1		1			605601	03/30/23 09:28	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	PrecSep-21			755.00 mL	1.0 g	605215	03/28/23 09:34	DJP	EET SL
Dissolved	Analysis	903.0		1			608038	04/19/23 09:54	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	PrecSep-21			497.90 mL	1.0 g	605061	03/27/23 09:46	DJP	EET SL
Total/NA	Analysis	903.0		1	1.0 mL	1.0 mL	608038	04/19/23 15:08	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	PrecSep_0			755.00 mL	1.0 g	605216	03/28/23 09:54	DJP	EET SL
Dissolved	Analysis	904.0		1	1.0 mL	1.0 mL	607903	04/18/23 12:22	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep_0			498.44 mL	1.0 g	608035	04/19/23 09:46	KAC	EET SL
Total/NA	Analysis	904.0		1			608494	04/24/23 13:44	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	PrecSep-7			494.48 mL	1.0 g	606565	04/07/23 11:12	DJP	EET SL
Dissolved	Analysis	905		1			607842	04/17/23 19:08	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			256.31 mL	1.0 g	605090	03/27/23 13:47	DJP	EET SL
Total/NA	Analysis	905		1			606668	04/10/23 16:39	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			101.08 mL	1.0 g	607088	04/12/23 10:37	SEH	EET SL
Total/NA	Analysis	906.0		1			607810	04/13/23 06:17	REV	EET SL
	Instrument ID: LSCAQUA									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	604832	03/23/23 16:04	SAC	EET SL
Dissolved	Prep	ExtChrom			305.9 mL	1.0 mL	605729	03/30/23 16:34	CMM	EET SL
Dissolved	Analysis	A-01-R		1			605994	04/03/23 20:58	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			102.11 mL	1.0 mL	606930	04/11/23 15:09	MAL	EET SL
Total/NA	Analysis	A-01-R		1			607398	04/13/23 16:13	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-131449-8
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-131449-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131449-1	EPBMC_20230316	Water	03/16/23 09:15	03/16/23 18:00

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-210897.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131449-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/6/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (VOCs-2CVE only (E624))	Total Number of containers	Special Instructions/Note:
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water				X	X	X	X	8	See Attached Instructions
TB-20230316-2 (570-131449-3)	3/16/23	09:15 Pacific		Water							X	2	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/16/23 1558	EC		03/16/23 1604	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.2c TV2F8

Loc: 570
131449

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICK	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)		
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly		
EPBMC_20230316	3/16/23	0915	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-1	3/16/23	0915	TB	WM	2	N	N														x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5		

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

EDBFJUX

Field Readings

Meter Serial #

Time of Readings: 0915

DO (mg/L): 5.33

pH: 7.17

Temp (°C/F): 53.5

TRC (mg/L): 0.00

Checked by:

Date/Time: 3-16-2023/1040

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H&A	Date/Time: 3/16/23 1205	Received by: EC
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Received by:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:

Date/Time: 3/16/23 1205
Date/Time: 03/16/23 1745
Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/25/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: MARK DOMINICE	Date: 3-16-2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
EPBMC_20230316	3/16/23	0915	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230316-2	3/16/23	0915	TB	WM	2	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H&A	Date/Time: 3-16-23 1205	Receiv	Date/Time: 3/16/23 1205
Relinquished by:	Company: EC	Date/Time: 3/16/23 1745	Receiv	Date/Time: 03/16/23 1745
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.0/2.0 , 2.3/2.3 SCII

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211012.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-131449-8
Address: 13715 Rider Trail North,	Due Date Requested: 4/18/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha Only- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_20230316 (570-131449-1)	3/16/23	09:15 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	9	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by: FEDEX	Date/Time: 03/17/23 7:51	Company: EC	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: Briana Gonzalez	Date/Time: 3/21/23 0930	Company: ETSSTL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/25/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131449-8

Login Number: 131449
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-131449-8

Login Number: 131449
List Number: 4
Creator: Sharkey-Gonzalez, Briana L

List Source: Eurofins St. Louis
List Creation: 03/21/23 02:24 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-132013-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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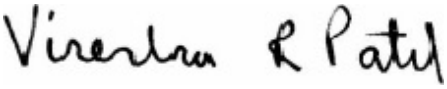
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-1

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc. Job ID: 570-132013-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132013-1

Comments
No additional comments.

Receipt
The samples were received on 3/21/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6º C and 1.9º C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

HPLC/IC
Method 300.0: The native sample, matrix spike, and matrix spike duplicate (MS/MSD) associated with analytical batch 570-314843 were performed at the same dilution. Due to the additional level of analyte present in the spiked samples, the concentration of Sulfate in the MS/MSD was above the instrument calibration range. The data have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-314038 and analytical batch 570-314160 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPSW001IE01_20230321 (570-132013-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: The sample duplicate (DUP) precision for analytical batch 570-314596 was outside control limits. Sample non-homogeneity is suspected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-1

Client Sample ID: EPSW001IE01_20230321

Lab Sample ID: 570-132013-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	4.7		1.0	0.24	mg/L	1		300.0	Total/NA
Arsenic	0.84	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Copper	1.4	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	360	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	11		1.0	0.41	ug/L	1		200.8	Total Recoverable
Lead	0.77	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Zinc	9.6	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Arsenic	0.59	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	0.86	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	41	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	2.7	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Zinc	5.3	J,DX BU	20	2.8	ug/L	1		200.8	Dissolved
Total Suspended Solids	12		1.0	0.83	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPS9_001IE01820230321
Date Colle_ted: 034214 23 11:00
Date Re_eived: 034224 23 17:10

Lab Sample ID: 570-132013-1
MatriW 9 ater

Analyte	Result	z ualiUer	RL	MDL	Fnit	D	Prepared	Analyved	Dil / a_
SulLate	c.7		1.0	0.24	mg/L			03/27/23 12:39	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-1

Method: EPA 200.Q- Metals fICP4MSB- (otal Re_oxerable

Client Sample ID: EPS9 001IE01820230321
Date Colle_ted: 034214 23 11:00
Date Re_eived: 034224 23 17:10

Lab Sample ID: 570-132013-1
MatriW 9 ater

Analyte	Result	z ualiUer	RL	MDL	Fnit	D	Prepared	Analyved	Dil / a_
Arseni_	**0.Qc**	**) ,DT**	1.0	0.16	ug/L		03/23/23 07:42	03/23/23 11:24	1
Cadmium	ND		1.0	0.13	ug/L		03/23/23 07:42	03/23/23 11:24	1
Copper	**1.c**	**) ,DT**	2.0	0.32	ug/L		03/23/23 07:42	03/23/23 11:24	1
Iron	**360**	**MJ**	20	3.7	ug/L		03/23/23 07:42	03/23/23 11:24	1
Manganese	**11**		1.0	0.41	ug/L		03/23/23 07:42	03/23/23 11:24	1
Lead	**0.77**	**) ,DT**	1.0	0.12	ug/L		03/23/23 07:42	03/23/23 11:24	1
Zin_	**X.6**	**) ,DT**	20	2.8	ug/L		03/23/23 07:42	03/23/23 11:24	1
Selenium	ND		2.0	0.52	ug/L		03/23/23 07:42	03/23/23 11:24	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-1

Method: EPA 200.Q- Metals fICP4MSB- Dissolxed

Client Sample ID: EPS9 001IE01820230321
Date Colle_ted: 034214 23 11:00
Date Re_eixed: 034224 23 17:10

Lab Sample ID: 570-132013-1
MatriW 9 ater

Analyte	Result	z ualiUer	RL	MDL	F nit	D	Prepared	Analyved	Dil / a_
Arseni_	**0.5X**	**) ,DT J F**	1.0	0.16	ug/L			03/22/23 14:07	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/22/23 14:07	1
Copper	**0.Q6**	**) ,DT J F**	2.0	0.32	ug/L			03/22/23 14:07	1
Iron	**c1**	**J F**	20	3.7	ug/L			03/22/23 14:07	1
Manganese	**2.7**	**J F**	1.0	0.41	ug/L			03/22/23 14:07	1
Lead	ND	BU	1.0	0.12	ug/L			03/22/23 14:07	1
Zin_	**5.3**	**) ,DT J F**	20	2.8	ug/L			03/22/23 14:07	1
Selenium	ND	BU	2.0	0.52	ug/L			03/22/23 14:07	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-1

General Chemistry

Client Sample ID: EPS9 001IE01820230321
Date Colle_ted: 034214 23 11:00
Date Re_eived: 034224 23 17:10

Lab Sample ID: 570-132013-1
MatriW 9 ater

Analyte	Result	z ualiUer	RL	MDL	Fnit	D	Prepared	Analyved	Dil / a_
(otal Suspended Solids fSM 25c0DB	12		1.0	0.83	mg/L			03/24/23 16:00	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-314843/5
Matrix: Water
Analysis Batch: 314843

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			03/27/23 04:25	1

Lab Sample ID: LCS 570-314843/6
Matrix: Water
Analysis Batch: 314843

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	47.6		mg/L		95	90 - 110

Lab Sample ID: LCSD 570-314843/7
Matrix: Water
Analysis Batch: 314843

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	50.0	47.8		mg/L		96	90 - 110	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-314038/1-A
Matrix: Water
Analysis Batch: 314166

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 314038

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L		03/23/23 07:42	03/23/23 11:20	1
Cadmium	ND		1.0	0.13	ug/L		03/23/23 07:42	03/23/23 11:20	1
Copper	ND		2.0	0.32	ug/L		03/23/23 07:42	03/23/23 11:20	1
Iron	3.83	J,DX	20	3.7	ug/L		03/23/23 07:42	03/23/23 11:20	1
Manganese	ND		1.0	0.41	ug/L		03/23/23 07:42	03/23/23 11:20	1
Lead	ND		1.0	0.12	ug/L		03/23/23 07:42	03/23/23 11:20	1
Zinc	ND		20	2.8	ug/L		03/23/23 07:42	03/23/23 11:20	1
Selenium	ND		2.0	0.52	ug/L		03/23/23 07:42	03/23/23 11:20	1

Lab Sample ID: LCS 570-314038/2-A
Matrix: Water
Analysis Batch: 314166

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 314038

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	79.2		ug/L		99	85 - 115
Cadmium	80.0	79.6		ug/L		99	85 - 115
Copper	80.0	78.9		ug/L		99	85 - 115
Iron	800	806		ug/L		101	85 - 115
Manganese	80.0	79.0		ug/L		99	85 - 115
Lead	80.0	81.5		ug/L		102	85 - 115
Zinc	80.0	77.6		ug/L		97	85 - 115
Selenium	80.0	78.4		ug/L		98	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-314038/3-A
Matrix: Water
Analysis Batch: 314166

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 314038

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			80.0	79.7		ug/L		100	85 - 115	1	20
Cadmium			80.0	80.2		ug/L		100	85 - 115	1	20
Copper			80.0	78.5		ug/L		98	85 - 115	1	20
Iron			800	804		ug/L		101	85 - 115	0	20
Manganese			80.0	79.3		ug/L		99	85 - 115	0	20
Lead			80.0	81.5		ug/L		102	85 - 115	0	20
Zinc			80.0	78.8		ug/L		98	85 - 115	2	20
Selenium			80.0	77.7		ug/L		97	85 - 115	1	20

Lab Sample ID: MB 570-313762/1-A
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L			03/22/23 13:05	1
Cadmium	ND		1.0	0.13	ug/L			03/22/23 13:05	1
Copper	ND		2.0	0.32	ug/L			03/22/23 13:05	1
Iron	ND		20	3.7	ug/L			03/22/23 13:05	1
Manganese	ND		1.0	0.41	ug/L			03/22/23 13:05	1
Lead	ND		1.0	0.12	ug/L			03/22/23 13:05	1
Zinc	ND		20	2.8	ug/L			03/22/23 13:05	1
Selenium	ND		2.0	0.52	ug/L			03/22/23 13:05	1

Lab Sample ID: LCS 570-313762/2-A
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic			80.0	80.7		ug/L		101	85 - 115		
Cadmium			80.0	81.1		ug/L		101	85 - 115		
Copper			80.0	77.1		ug/L		96	85 - 115		
Iron			800	798		ug/L		100	85 - 115		
Manganese			80.0	79.4		ug/L		99	85 - 115		
Lead			80.0	77.2		ug/L		96	85 - 115		
Zinc			80.0	79.2		ug/L		99	85 - 115		
Selenium			80.0	77.1		ug/L		96	85 - 115		

Lab Sample ID: LCSD 570-313762/3-A
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			80.0	81.0		ug/L		101	85 - 115	0	20
Cadmium			80.0	81.7		ug/L		102	85 - 115	1	20
Copper			80.0	78.9		ug/L		99	85 - 115	2	20
Iron			800	801		ug/L		100	85 - 115	0	20
Manganese			80.0	80.9		ug/L		101	85 - 115	2	20
Lead			80.0	77.3		ug/L		97	85 - 115	0	20
Zinc			80.0	78.8		ug/L		98	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-313762/3-A
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Selenium			80.0	76.9		ug/L		96	85 - 115	0	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-314596/1
Matrix: Water
Analysis Batch: 314596

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/24/23 15:59	1

Lab Sample ID: LCS 570-314596/2
Matrix: Water
Analysis Batch: 314596

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	94.0		mg/L		94	77 - 116		

Lab Sample ID: LCSD 570-314596/3
Matrix: Water
Analysis Batch: 314596

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.0		mg/L		96	77 - 116	2	10

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-1

HPLC/IC

Analysis Batch: 314843

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132013-1	EPSW001IE01_20230321	Total/NA	Water	300.0	
MB 570-314843/5	Method Blank	Total/NA	Water	300.0	
LCS 570-314843/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-314843/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Metals

Filtration Batch: 313762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132013-1	EPSW001IE01_20230321	Dissolved	Water	Filtration	
MB 570-313762/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-313762/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-313762/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 313835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-313762/1-A	Method Blank	Dissolved	Water	200.8	313762
LCS 570-313762/2-A	Lab Control Sample	Dissolved	Water	200.8	313762
LCSD 570-313762/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	313762

Analysis Batch: 313836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132013-1	EPSW001IE01_20230321	Dissolved	Water	200.8	313762

Prep Batch: 314038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132013-1	EPSW001IE01_20230321	Total Recoverable	Water	200.8	
MB 570-314038/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-314038/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-314038/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Analysis Batch: 314160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132013-1	EPSW001IE01_20230321	Total Recoverable	Water	200.8	314038

Analysis Batch: 314166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-314038/1-A	Method Blank	Total Recoverable	Water	200.8	314038
LCS 570-314038/2-A	Lab Control Sample	Total Recoverable	Water	200.8	314038
LCSD 570-314038/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	314038

General Chemistry

Analysis Batch: 314596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132013-1	EPSW001IE01_20230321	Total/NA	Water	SM 2540D	
MB 570-314596/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-314596/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-314596/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_20230321
Lab Sample ID: 570-132013-1
Date Collected: 03/21/23 11:00
Matrix: Water
Date Received: 03/22/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	314843	03/27/23 12:39	UIP1	EET CAL 4
	Instrument ID: IC7									
Dissolved	Filtration	Filtration			50 mL	50 mL	313762	03/22/23 13:40	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			313836	03/22/23 14:07	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	314038	03/23/23 07:42	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			314160	03/23/23 11:24	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	314596	03/24/23 16:00	UWCT	EET CAL 4
	Instrument ID: BAL71									

Laboratory References:
EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124012-1
6ro3ectP ite: / oeinS j j Bg lj F A and / L 6 - RMs

Laboratory: Eurofins Calscience

All accreditationf R2certiNcationf held by thif laboratory are lif ted. Rot all accreditationf R2certiNcationf are applicable to thif report.

Authority	Program	Identification Number	Expiration Date
Arizona	j tate	AZ0820	11-1u-42
CaliN0rnia	gof AnSelef Co9nty j anitation Dif trictf	1010Q	07-21-42
CaliN0rnia	j CAv L D gA6	17gA0Q1Q	11-20-42
CaliN0rnia	j tate	2084	07-21-4O
ReEada	j tate	CA00111	08-01-42
UreSon	RMgA6	O175	04-04-4O
mj DA	mj Bederal 6roSraWf	6220-44-0005Q	05-4O-42
s af hinSton	j tate	CQ1u-18	10-11-42

M9roNhf Calf cience

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132013-1	EPSW001IE01_20230321	Water	03/21/23 11:00	03/22/23 17:10

Loc: 570
132013

all metals to be analyzed using Method 200.8

570-132013 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Eurofins Calscience, Inc.

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▫ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number : 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.:
H&A P O #	▫ 1 day			

Chad Johnson

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method ~~200.7~~ Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method ~~200.7~~: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fil half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230321	3-21-23	1100	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ▫ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company: J&A	Date/Time: 3-21-23 1300	Received by:	EC	Date/Time: 3/21/23 1320
Relinquished by:	Company: EC	Date/Time: 3/21/23 1710	Received by:		Date/Time: 3/21/23 0710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 1.6/1.6 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

4/4/2023

SAP COC 2019/2020 VERSION 3

Loc: 570
132013

570-132013 Chain of Custody

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▫ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number : 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.:
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230321	3-21-23	1100	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ▫ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

	Company	Date/Time			Date/Time
Relinquished by:	J&A	3-21-23 1300	Received by:	EC	3/21/23 1320
Relinquished by:	EC	3/21/23 1710	Received by:		3/21/23 0710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 1.6/1.6 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132013-1

Login Number: 132013
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/4/2023 9:37:16 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-132013-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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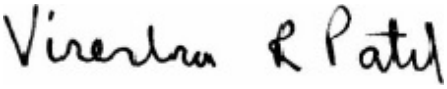
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-2

Qualifiers

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132013-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132013-2

Comments
No additional comments.

Receipt
The samples were received on 3/21/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6º C and 1.9º C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-2

Client Sample ID: EPSW001IE01_20230321

Lab Sample ID: 570-132013-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.011	MB	0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0099	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPSW001IE01_20230321
Lab Sample ID: 570-132013-1
Date Collected: 03/21/23 11:00
Matrix: Water
Date Received: 03/22/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.011	MB	0.00050	0.000079	ug/L			03/28/23 19:27	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPSW001IE01_20230321
Lab Sample ID: 570-132013-1
Date Collected: 03/21/23 11:00
Matrix: Water
Date Received: 03/22/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0099	MB	0.00050	0.000079	ug/L			03/28/23 19:36	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-4916/ 5293
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000813	J,DX	0.00050	0.000079	ug/L			03/28/23 14:27	1

Lab Sample ID: MB 580-4916/ 5294
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/28/23 14:31	1

Lab Sample ID: MB 580-4916/ 5295
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/28/23 14:35	1

Lab Sample ID: LCS 580-4916/ 5296
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00500	0.00466		ug/L		93	77 - 123

Lab Sample ID: LCSD 580-4916/ 5297
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00500	0.00473		ug/L		95	77 - 123	2	24

Lab Sample ID: MB 580-491366/21-A
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/28/23 18:37	1

QC Association Summary

8 Client HCay & Adrchler, Job ID: 570-129012-9
. dbPrrj/ Ini : Soi leB / / gF I/ L & HeA SR. - MNE

Metals

Filtration Batch: 421366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129012-1	N. / E 001IN01W90920291	Dl__oC3i A	E Hri d	gl0dHnoe	
RS 540-s912vvj1-&	Ri ncoA SCHe6	Dl__oC3i A	E Hri d	gl0dHnoe	

Analysis Batch: 421695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129012-1	N. / E 001IN01W90920291	Dl__oC3i A	E Hri d	1v21N	s912vv
570-129012-1	N. / E 001IN01W90920291	korHCjM&	E Hri d	1v21N	
RS 540-s912vvj1-&	Ri ncoA SCHe6	Dl__oC3i A	E Hri d	1v21N	s912vv
RS 540-s91vT5j92	Ri ncoA SCHe6	korHCjM&	E Hri d	1v21N	
RS 540-s91vT5j9s	Ri ncoA SCHe6	korHCjM&	E Hri d	1v21N	
RS 540-s91vT5j95	Ri ncoA SCHe6	korHCjM&	E Hri d	1v21N	
F8 / 540-s91vT5j9v	FHb 8 oendbC/ HmpC	korHCjM&	E Hri d	1v21N	
F8 / D 540-s91vT5j97	FHb 8 oendbC/ HmpC Dup	korHCjM&	E Hri d	1v21N	

Nudbfle_ 8 HCrli eri

Page 10 of 18 4/4/2023

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-2

Client Sample ID: EPSW001IE01_20230321
Date Collected: 03/21/23 11:00
Date Received: 03/22/23 17:10

Lab Sample ID: 570-132013-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	421366	03/24/23 14:10	DRM	EET SEA
Dissolved	Analysis	1631E		1			421695	03/28/23 19:36	D1C	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			421695	03/28/23 19:27	D1C	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132013-1	EPSW001IE01_20230321	Water	03/21/23 11:00	03/22/23 17:10

Loc: 570
132013

570-132013 Chain of Custody

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

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Eurofins Calscience, Inc.

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▫ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number : 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.:
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230321	3-21-23	1100	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ▫ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

	Company	Date/Time			Date/Time
Relinquished by:	J&A	3-21-23 1300	Received by:	EC	3/21/23 1320
Relinquished by:	EC	3/21/23 1710	Received by:		3/21/23 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 1.6/1.6 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212072.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-132013-2
Address: 5755 8th Street East,	Due Date Requested: 4/7/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
EPSW001IE01_20230321 (570-132013-1)	3/21/23	11:00 Pacific		Water				X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements: 6368 9239 4080

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/23/23 9:30	EC		3/24/23 9:40	EPT-S
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: NA | Sm Red Ice | Cooler Temperature(s) °C and Other Remarks: 0.1 | 0.4 | 0.4

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132013-2

Login Number: 132013
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132013-2

Login Number: 132013
List Number: 3
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/24/23 02:07 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/14/2023 4:57:03 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-132013-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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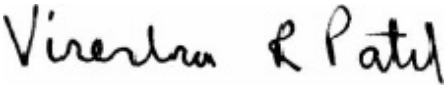
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-132013-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132013-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132013-3

Receipt
The sample was received on 3/22/2023 5:10 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6°C and 1.9°C

Receipt Exceptions
The Field Sampler was not listed on the Chain of Custody.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument 12D5 exceeded this criteria: (CCV 320-667328/2), (LCS 320-666115/2-A), (LCSD 320-666115/3-A) and (MB 320-666115/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument 12D5 exceeded this criteria: EPSW001IE01_20230321 (570-132013-1) and (CCV 320-667636/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-3

Client Sample ID: EPSW001IE01_20230321

Lab Sample ID: 570-132013-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000023	J,DX MB q	0.000048	0.00000073	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000021	J,DX MB	0.000048	0.00000069	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000011	J,DX MB q	0.000048	0.00000063	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.00000069	J,DX MB	0.000048	0.00000044	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.00000044	J,DX	0.000048	0.00000040	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000031	J,DX MB	0.000048	0.0000022	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000039	J,DX MB	0.000048	0.0000011	ug/L	1		1613B	Total/NA
OCDD	0.00014	MB	0.000096	0.0000029	ug/L	1		1613B	Total/NA
OCDF	0.0000089	J,DX MB	0.000096	0.00000054	ug/L	1		1613B	Total/NA
Total TCDD	0.00000088	J,DX MB	0.0000096	0.00000050	ug/L	1		1613B	Total/NA
Total HxCDD	0.000010	J,DX MB q	0.000048	0.00000068	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000020	J,DX MB	0.000048	0.00000046	ug/L	1		1613B	Total/NA
Total HpCDD	0.000049	J,DX MB	0.000048	0.0000022	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000085	J,DX MB q	0.000048	0.0000012	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPS9 001IE01820230321
Lab Sample ID: 570-132013-1
Date Collected: 03/21/23 11:00
Matrix: Water
Date Received: 03/22/23 17:10

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000096	0.00000050	ug/L		04/07/23 06:53	04/14/23 03:13	1
2,3,7,8-TCDF	ND		0.0000096	0.00000024	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000054	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,7,8-PeCDF	ND		0.000048	0.00000038	ug/L		04/07/23 06:53	04/14/23 03:13	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000045	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,4,6,7,8-HpCDD	0.0000023	J B M	0.000048	0.00000073	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,4,6,7,8-HpCDF	0.0000021	J B M	0.000048	0.00000069	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,4,7,8,9-HpCDF	0.0000011	J B M	0.000048	0.00000063	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,4,6,7,8-HpCDF	0.00000046	J B M	0.000048	0.00000044	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,6,7,8-HxCDD	ND		0.000048	0.00000041	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,7,8,9-HxCDD	ND		0.000048	0.00000059	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,6,7,8-HxCDF	0.00000030	J	0.000048	0.00000040	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,7,8,9-HxCDF	ND		0.000048	0.00000022	ug/L		04/07/23 06:53	04/14/23 03:13	1
2,3,4,6,7,8-HxCDF	0.00000031	J B M	0.000048	0.00000022	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,4,7,8-HxCDD	0.00000046	J B M	0.000048	0.00000022	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,4,7,8-HxCDF	0.00000046	J B M	0.000048	0.00000011	ug/L		04/07/23 06:53	04/14/23 03:13	1
1,2,3,4,7,8,9-HpCDF	ND		0.000048	0.00000014	ug/L		04/07/23 06:53	04/14/23 03:13	1
OCDD	0.0001	B M	0.000096	0.00000029	ug/L		04/07/23 06:53	04/14/23 03:13	1
OCDF	0.00000X4	J B M	0.000096	0.00000054	ug/L		04/07/23 06:53	04/14/23 03:13	1
Total TCDD	0.00000XX	J B M	0.0000096	0.00000050	ug/L		04/07/23 06:53	04/14/23 03:13	1
Total TCDF	ND		0.0000096	0.00000024	ug/L		04/07/23 06:53	04/14/23 03:13	1
Total PeCDD	ND		0.000048	0.00000054	ug/L		04/07/23 06:53	04/14/23 03:13	1
Total PeCDF	ND		0.000048	0.00000045	ug/L		04/07/23 06:53	04/14/23 03:13	1
Total HxCDD	0.000010	J B M	0.000048	0.00000068	ug/L		04/07/23 06:53	04/14/23 03:13	1
Total HxCDF	0.0000020	J B M	0.000048	0.00000046	ug/L		04/07/23 06:53	04/14/23 03:13	1
Total HpCDD	0.0000, q	B M	0.000048	0.0000022	ug/L		04/07/23 06:53	04/14/23 03:13	1
Total HpCDF	0.00000X5	J B M	0.000048	0.0000012	ug/L		04/07/23 06:53	04/14/23 03:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*20 - 156*	*46/47/23 45:03*	*46/16/23 43:13*	*1*
13C-2,3,7,8-TCDF	*51*		*26 - 159*	*46/47/23 45:03*	*46/16/23 43:13*	*1*
13C-1,2,3,7,8-PeCDD	*71*		*20 - 181*	*46/47/23 45:03*	*46/16/23 43:13*	*1*
13C-1,2,3,7,8-PeCDF	*55*		*26 - 180*	*46/47/23 45:03*	*46/16/23 43:13*	*1*
13C-2,3,6,7,8-PeCDF	*50*		*21 - 178*	*46/47/23 45:03*	*46/16/23 43:13*	*1*
13C-1,2,3,6,7,8-HxCDD	*56*		*32 - 161*	*46/47/23 45:03*	*46/16/23 43:13*	*1*
13C-1,2,3,5,7,8-HxCDD	*81*		*28 - 134*	*46/47/23 45:03*	*46/16/23 43:13*	*1*
13C-1,2,3,6,7,8-HxCDF	*07*		*25 - 102*	*46/47/23 45:03*	*46/16/23 43:13*	*1*
13C-1,2,3,5,7,8-HxCDF	*70*		*25 - 123*	*46/47/23 45:03*	*46/16/23 43:13*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPS9_001IE01820230321
Lab Sample ID: 570-132013-1
Date Collected: 03/21/23 11:00
Matrix: Water
Date Received: 03/22/23 17:10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8,9-HxCDF	58		29 - 167	46/47/23 45:03	46/16/23 43:13	1
13C-2,3,6,5,7,8-HxCDF	76		28 - 135	46/47/23 45:03	46/16/23 43:13	1
13C-1,2,3,6,5,7,8-HpCDD	76		23 - 164	46/47/23 45:03	46/16/23 43:13	1
13C-1,2,3,6,5,7,8-HpCDF	50		28 - 163	46/47/23 45:03	46/16/23 43:13	1
13C-1,2,3,6,7,8,9-HpCDF	57		25 - 138	46/47/23 45:03	46/16/23 43:13	1
13C-OCDD	54		17 - 107	46/47/23 45:03	46/16/23 43:13	1
13C-OCDF	07		17 - 107	46/47/23 45:03	46/16/23 43:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	81		30 - 197	46/47/23 45:03	46/16/23 43:13	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	37TCDD (35-197)							
570-132013-1	EPSW001IE01_20230321	81							
MB 320-666115/1-A	Method Blank	85							

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	37TCDD (31-191)							
LCS 320-666115/2-A	Lab Control Sample	85							
LCSD 320-666115/3-A	Lab Control Sample Dup	86							

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Job ID: 570-132013-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-132013-1	EPSW001IE01_20230321	71	61	71	66	65	64	81	57
MB 320-666115/1-A	Method Blank	66	58	65	59	57	59	69	51

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-132013-1	EPSW001IE01_20230321	75	68	74	74	65	67	60	57
MB 320-666115/1-A	Method Blank	65	62	68	66	58	60	56	54

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-666115/2-A	Lab Control Sample	65	57	66	63	61	58	73	51
LCSD 320-666115/3-A	Lab Control Sample Dup	66	63	69	68	65	54	66	44

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-666115/2-A	Lab Control Sample	69	60	68	65	59	59	51	52
LCSD 320-666115/3-A	Lab Control Sample Dup	60	63	66	68	58	63	61	59

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-666115/1-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 666115

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.0000010	ug/L		04/07/23 06:53	04/13/23 02:14	1
2,3,7,8-TCDF	ND		0.000010	0.0000006 4	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,7,8-PeCDD	ND		0.000050	0.0000008 6	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,7,8-PeCDF	0.00000111	J,DX q	0.000050	0.0000005 0	ug/L		04/07/23 06:53	04/13/23 02:14	1
2,3,4,7,8-PeCDF	ND		0.000050	0.0000006 1	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,4,7,8-HxCDD	0.00000259	J,DX q	0.000050	0.0000008 4	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,6,7,8-HxCDD	0.00000163	J,DX q	0.000050	0.0000007 6	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,7,8,9-HxCDD	0.00000167	J,DX	0.000050	0.0000007 1	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,4,7,8-HxCDF	0.00000131	J,DX	0.000050	0.0000006 8	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.0000006 2	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.0000008 7	ug/L		04/07/23 06:53	04/13/23 02:14	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.0000005 9	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,4,6,7,8-HpCDD	0.00000411	J,DX	0.000050	0.0000009 4	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,4,6,7,8-HpCDF	0.00000227	J,DX q	0.000050	0.0000007 9	ug/L		04/07/23 06:53	04/13/23 02:14	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.0000009 9	ug/L		04/07/23 06:53	04/13/23 02:14	1
OCDD	0.0000401	J,DX	0.00010	0.0000011	ug/L		04/07/23 06:53	04/13/23 02:14	1
OCDF	0.00000736	J,DX q	0.00010	0.0000012	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total TCDD	0.00000181	J,DX	0.000010	0.0000010	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total TCDF	ND		0.000010	0.0000006 4	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total PeCDD	ND		0.000050	0.0000008 6	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total PeCDF	0.00000172	J,DX q	0.000050	0.0000005 6	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total HxCDD	0.00000589	J,DX q	0.000050	0.0000007 7	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total HxCDF	0.00000131	J,DX	0.000050	0.0000006 9	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total HpCDD	0.00000669	J,DX q	0.000050	0.0000009 4	ug/L		04/07/23 06:53	04/13/23 02:14	1
Total HpCDF	0.00000227	J,DX q	0.000050	0.0000008 9	ug/L		04/07/23 06:53	04/13/23 02:14	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*00*		*25 - 106*	*46/47/23 40:53*	*46/13/23 42:16*	*1*
13C-2,3,7,8-TCDF	*58*		*26 - 109*	*46/47/23 40:53*	*46/13/23 42:16*	*1*
13C-1,2,3,7,8-PeCDD	*05*		*25 - 181*	*46/47/23 40:53*	*46/13/23 42:16*	*1*
13C-1,2,3,7,8-PeCDF	*59*		*26 - 185*	*46/47/23 40:53*	*46/13/23 42:16*	*1*
13C-2,3,6,7,8-PeCDF	*57*		*21 - 178*	*46/47/23 40:53*	*46/13/23 42:16*	*1*
13C-1,2,3,6,7,8-HxCDD	*59*		*32 - 161*	*46/47/23 40:53*	*46/13/23 42:16*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-666115/1-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 666115

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,0,7,8-HxCDD	09		28 - 134	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,6,7,8-HxCDF	51		20 - 152	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,0,7,8-HxCDF	05		20 - 123	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,7,8,9-HxCDF	02		29 - 167	46/47/23 40:53	46/13/23 42:16	1
13C-2,3,6,0,7,8-HxCDF	08		28 - 130	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,6,0,7,8-HpCDD	00		23 - 164	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,6,0,7,8-HpCDF	58		28 - 163	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,6,7,8,9-HpCDF	04		20 - 138	46/47/23 40:53	46/13/23 42:16	1
13C-OCDD	50		17 - 157	46/47/23 40:53	46/13/23 42:16	1
13C-OCDF	56		17 - 157	46/47/23 40:53	46/13/23 42:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	85		35 - 197	46/47/23 40:53	46/13/23 42:16	1

Lab Sample ID: LCS 320-666115/2-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 666115

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000176		ug/L		88	67 - 158
2,3,7,8-TCDF	0.000200	0.000187		ug/L		93	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000866		ug/L		87	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000857		ug/L		86	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000877		ug/L		88	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000825		ug/L		82	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000894		ug/L		89	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000888		ug/L		89	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000810		ug/L		81	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000844		ug/L		84	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000856		ug/L		86	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000843		ug/L		84	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000844		ug/L		84	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000893		ug/L		89	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000850		ug/L		85	78 - 138
OCDD	0.00200	0.00182		ug/L		91	78 - 144
OCDF	0.00200	0.00178		ug/L		89	63 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	05		24 - 175
13C-2,3,7,8-TCDF	57		22 - 152
13C-1,2,3,7,8-PeCDD	00		21 - 227
13C-1,2,3,7,8-PeCDF	03		21 - 192
13C-2,3,6,7,8-PeCDF	01		13 - 328
13C-1,2,3,6,7,8-HxCDD	58		21 - 193
13C-1,2,3,0,7,8-HxCDD	73		25 - 103
13C-1,2,3,6,7,8-HxCDF	51		19 - 242
13C-1,2,3,0,7,8-HxCDF	09		21 - 159
13C-1,2,3,7,8,9-HxCDF	04		17 - 245

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-666115/2-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 666115

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,6,0,7,8-HxCDF	08		22 - 170
13C-1,2,3,6,0,7,8-HpCDD	05		20 - 100
13C-1,2,3,6,0,7,8-HpCDF	59		21 - 158
13C-1,2,3,6,7,8,9-HpCDF	59		24 - 180
13C-OCDD	51		13 - 199
13C-OCDF	52		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl6-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-666115/3-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 666115

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000194		ug/L		97	67 - 158	10	50
2,3,7,8-TCDF			0.000200	0.000206		ug/L		103	75 - 158	10	50
1,2,3,7,8-PeCDD			0.00100	0.000924		ug/L		92	70 - 142	7	50
1,2,3,7,8-PeCDF			0.00100	0.000943		ug/L		94	80 - 134	10	50
2,3,4,7,8-PeCDF			0.00100	0.000969		ug/L		97	68 - 160	10	50
1,2,3,4,7,8-HxCDD			0.00100	0.000839		ug/L		84	70 - 164	2	50
1,2,3,6,7,8-HxCDD			0.00100	0.000920		ug/L		92	76 - 134	3	50
1,2,3,7,8,9-HxCDD			0.00100	0.000974		ug/L		97	64 - 162	9	50
1,2,3,4,7,8-HxCDF			0.00100	0.000857		ug/L		86	72 - 134	6	50
1,2,3,6,7,8-HxCDF			0.00100	0.000857		ug/L		86	84 - 130	2	50
1,2,3,7,8,9-HxCDF			0.00100	0.000841		ug/L		84	78 - 130	2	50
2,3,4,6,7,8-HxCDF			0.00100	0.000863		ug/L		86	70 - 156	2	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000839		ug/L		84	70 - 140	1	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000906		ug/L		91	82 - 122	1	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000876		ug/L		88	78 - 138	3	50
OCDD			0.00200	0.00179		ug/L		89	78 - 144	2	50
OCDF			0.00200	0.00177		ug/L		89	63 - 170	0	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	00		24 - 175
13C-2,3,7,8-TCDF	03		22 - 152
13C-1,2,3,7,8-PeCDD	09		21 - 227
13C-1,2,3,7,8-PeCDF	08		21 - 192
13C-2,3,6,7,8-PeCDF	05		13 - 328
13C-1,2,3,6,7,8-HxCDD	56		21 - 193
13C-1,2,3,0,7,8-HxCDD	00		25 - 103
13C-1,2,3,6,7,8-HxCDF	66		19 - 242
13C-1,2,3,0,7,8-HxCDF	04		21 - 159
13C-1,2,3,7,8,9-HxCDF	03		17 - 245
13C-2,3,6,0,7,8-HxCDF	00		22 - 170
13C-1,2,3,6,0,7,8-HpCDD	08		20 - 100
13C-1,2,3,6,0,7,8-HpCDF	58		21 - 158
13C-1,2,3,6,7,8,9-HpCDF	03		24 - 180

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-666115/3-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 666115

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-OCDD	01		13 - 199
13C-OCDF	59		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl6-2,3,7,8-TCDD	80		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-3

Specialty Organics

Prep Batch: 666115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132013-1	EPSW001IE01_20230321	Total/NA	Water	1613B	
MB 320-666115/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-666115/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-666115/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 667328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-666115/1-A	Method Blank	Total/NA	Water	1613B	666115
LCS 320-666115/2-A	Lab Control Sample	Total/NA	Water	1613B	666115
LCSD 320-666115/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	666115

Analysis Batch: 667636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132013-1	EPSW001IE01_20230321	Total/NA	Water	1613B	666115

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_20230321
Lab Sample ID: 570-132013-1

Date Collected: 03/21/23 11:00
Matrix: Water
Date Received: 03/22/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1039.7 mL	20.0 uL	666115	04/07/23 06:53	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	667636	04/14/23 03:13	DB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	06-01-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-3

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132013-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132013-1	EPSW001IE01_20230321	Water	03/21/23 11:00	03/22/23 17:10

Loc: 570
132013

570-132013 Chain of Custody

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▫ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number : 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.:
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230321	3-21-23	1100	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ▫ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company: J&A	Date/Time: 3-21-23 1300	Received by:		EC	Date/Time: 3/21/23 1320
Relinquished by:	Company: EC	Date/Time: 3/21/23 1710	Received by:			Date/Time: 3/21/23 0710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:			Date/Time:

1.9/1.9 1.6/1.6 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212690.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-132013-3
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/7/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230321 (570-132013-1)	3/21/23	11:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification Unconfirmed	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)* ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 03/24/23 1500	Company: EC	Received by:	Date/Time: 3.25.23 0910	Company: ETSL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.9 C

Ver: 06/08/2021

4/14/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129012-2

Login Number: 132013
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129012-2

Login Number: 132013
List Number: 4
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 03/25/23 10:43 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-132013-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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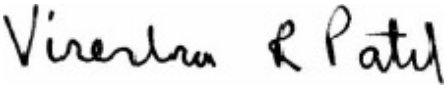
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132013-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132013-4

Comments
No additional comments.

Receipt
The samples were received on 3/21/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.6º C and 1.9º C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

RAD
Methods 900.0, 9310: Gross Alpha Beta prep batch 160-607836:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. EPSW001IE01_20230321 (570-132013-1), (LCS 160-607836/2-A), (LCSB 160-607836/3-A), (MB 160-607836/1-A), (570-132013-J-1-F DU), (570-132013-J-1-D MS) and (570-132013-J-1-E MSBT)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Job ID: 570-132013-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

EPSW001IE01_20230321 (570-132013-1), (570-131073-AT-1-B) and (570-131073-AT-1-C DU)

Method 901.1: Gamma Prep Batch 160-605774
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_20230321 (570-132013-1), (570-132015-K-1-D) and (570-132015-K-1-E DU)

Method 906.0: Tritium 607890
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are decay corrected to sample date and time as the Activity Reference Date. EPSW001IE01_20230321 (570-132013-1), (LCS 160-607890/2-A), (MB 160-607890/1-A), (570-131938-I-1-A), (570-131938-I-1-B DU), (570-132136-Q-1-A) and (570-132136-Q-1-B MS)

Methods A-01-R, U-02-RC: Isotopic Uranium batch 607182
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20230321 (570-132013-1), (LCS 160-607182/2-A), (MB 160-607182/1-A), (570-131945-N-1-E) and (570-131945-N-1-F DU)

Method A-01-R: Isotopic Uranium batch 607366
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_20230321 (570-132013-1), (LCS 160-607366/2-A), (MB 160-607366/1-A) and (570-132013-K-1-F DU)

Method ExtChrom:

Job ID: 570-132013-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method ExtChrom: Uranium Prep Batch 160-607366:

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPSW001IE01_20230321 (570-132013-1) and (570-132013-K-1-B DU).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_20230321
Lab Sample ID: 570-132013-1

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPS_ 001IE01x30320231
Lab Sample ID: 570-123012-1
Date Collected: 02/31/32 11:00
MatriW _ ater
Date Received: 02/33/32 17:10

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.78		1.07	1.09	3.00	1.46	pCi/L	04/17/23 13:56	04/25/23 16:46	1
Gross Beta	3.85		0.768	0.819	4.00	0.932	pCi/L	04/17/23 13:56	04/25/23 16:46	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPS_ 001IE01x30320231
Lab Sample ID: 570-123012-1
Date Collected: 02/31/32 11:00
MatriW _ ater
Date Received: 02/33/32 17:10

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.55	U	1.14	1.16	3.00	1.71	pCi/L	04/17/23 13:56	04/25/23 16:49	1
Gross Beta	**1.5&**		0.649	0.667	4.00	0.879	pCi/L	04/17/23 13:56	04/25/23 16:49	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 901.1 - Cesium 127 O 6 ther Gamma Emitters (GS)

Client Sample ID: EPS_ 001IE01x30320231
Lab Sample ID: 570-123012-1
Date Collected: 02/31/32 11:00
MatriW _ ater
Date Received: 02/33/32 17:10

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.40	U	8.01	8.01	20.0	9.03	pCi/L	03/28/23 16:33	04/12/23 16:52	1
Potassium-40	45.5	U	72.5	72.7		97.9	pCi/L	03/28/23 16:33	04/12/23 16:52	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 901.1 - Cesium 127 O 6 ther Gamma Emitters (GS) - Dissolved

Client Sample ID: EPS_ 001IE01x30320231
Lab Sample ID: 570-123012-1
Date Collected: 02/31/32 11:00
MatriW _ ater
Date Received: 02/33/32 17:10

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-1.22	U	7.69	7.69	20.0	9.44	pCi/L	03/31/23 15:10	04/13/23 12:57	1
Potassium-40	-31.9	U	80.2	80.2		111	pCi/L	03/31/23 15:10	04/13/23 12:57	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 904.0 - Tritium, Total (LSC)

Client Sample ID: EPS_ 001IE01x30320231
Lab Sample ID: 570-123012-1
Date Collected: 02/31/32 11:00
MatriW _ ater
Date Received: 02/33/32 17:10

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-198	U	205	205	500	414	pCi/L	04/18/23 11:12	04/19/23 09:15	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: D6 E A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPS_ 001IE01x30320231
Lab Sample ID: 570-123012-1
Date Collected: 02/31/32 11:00
MatriW _ ater
Date Received: 02/33/32 17:10

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	**0.138**		0.1177	0.1180	1.00	0.124	pCi/L	04/12/23 15:01	04/17/23 22:46	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: D6 E A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPS_ 001IE01x30320231
Lab Sample ID: 570-123012-1
Date Collected: 02/31/32 11:00
MatriW _ ater
Date Received: 02/33/32 17:10

Analyte	Result	Qualifier	Count Uncert. (3σ+/-)	Total Uncert. (3σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.210	U	0.257	0.257	1.00	0.335	pCi/L	04/13/23 16:15	04/20/23 11:24	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		U-232							
Lab Sample ID	Client Sample ID	(30-110)							
LCS 160-607182/2-A	Lab Control Sample	76.8							
LCS 160-607366/2-A	Lab Control Sample	78.6							
MB 160-607182/1-A	Method Blank	81.7							
MB 160-607366/1-A	Method Blank	81.8							

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)							
		U-232							
Lab Sample ID	Client Sample ID	(30-110)							
570-132013-1 DU	EPSW001IE01_20230321	93.6							

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-607836/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 608625
Prep Batch: 607836

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.3289	U	0.689	0.690	3.00	1.20	pCi/L	04/17/23 13:56	04/24/23 19:44	1
Gross Beta	-0.3433	U	0.470	0.471	4.00	0.893	pCi/L	04/17/23 13:56	04/24/23 19:44	1

Lab Sample ID: LCS 160-607836/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 608625
Prep Batch: 607836

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	65.01		9.17	3.00	2.07	pCi/L	129	75 - 125

Lab Sample ID: LCSB 160-607836/3-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 608669
Prep Batch: 607836

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.3	73.26		7.85	4.00	0.822	pCi/L	100	75 - 125

Lab Sample ID: 570-132013-1 MS
Client Sample ID: EPSW001IE01_20230321
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 608688
Prep Batch: 607836

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	1.78		50.5	54.62		7.63	3.00	1.23	pCi/L	105	60 - 140

Lab Sample ID: 570-132013-1 MSBT
Client Sample ID: EPSW001IE01_20230321
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 608688
Prep Batch: 607836

Analyte	Sample Result	Sample Qual	Spike Added	MSBT Result	MSBT Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	2.85		73.3	76.15		8.14	4.00	0.883	pCi/L	102	60 - 140

Lab Sample ID: 570-132013-1 DU
Client Sample ID: EPSW001IE01_20230321
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 608689
Prep Batch: 607836

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Gross Alpha	1.78		2.481		1.48	3.00	2.08	pCi/L	0.27	1
Gross Beta	2.85		1.504		0.697	4.00	0.918	pCi/L	0.89	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-605283/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 607160
Prep Batch: 605283

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.793	U	6.67	6.68	20.0	7.49	pCi/L	03/28/23 16:33	04/12/23 04:01	1
Potassium-40	27.15	U	82.6	82.7		106	pCi/L	03/28/23 16:33	04/12/23 04:01	1

Lab Sample ID: LCS 160-605283/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 607188
Prep Batch: 605283

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	139700		16600		562	pCi/L	103	75 - 125
Cesium-137	40800	39690		4740	20.0	156	pCi/L	97	75 - 125
Cobalt-60	17700	17220		2060		78.1	pCi/L	97	75 - 125

Lab Sample ID: MB 160-605774/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 607321
Prep Batch: 605774

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-7.022	U	12.9	12.9	20.0	15.4	pCi/L	03/31/23 15:10	04/13/23 14:40	1
Potassium-40	-5.858	U	119	119		163	pCi/L	03/31/23 15:10	04/13/23 14:40	1

Lab Sample ID: LCS 160-605774/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 607326
Prep Batch: 605774

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	154200		18300		291	pCi/L	114	75 - 125
Cesium-137	40800	42460		5060	20.0	81.7	pCi/L	104	75 - 125
Cobalt-60	17700	18450		2200		56.4	pCi/L	104	75 - 125

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-607890/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 608161
Prep Batch: 607890

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-102.7	U	224	224	500	433	pCi/L	04/18/23 11:12	04/19/23 06:41	1

Lab Sample ID: LCS 160-607890/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 608161
Prep Batch: 607890

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2090	1604		396	500	420	pCi/L	77	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-607182/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 607712
Prep Batch: 607182

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.08287	U	0.138	0.138	1.00	0.229	pCi/L	04/12/23 15:01	04/17/23 22:47	1

Lab Sample ID: LCS 160-607182/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 607726
Prep Batch: 607182

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	14.02		1.67	1.00	0.196	pCi/L	110	75 - 125		
Uranium-238			13.0	15.41		1.79	1.00	0.168	pCi/L	118	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*76.8*		*30 - 110*

Lab Sample ID: MB 160-607366/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 608244
Prep Batch: 607366

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.04490	U	0.1166	0.1166	1.00	0.179	pCi/L	04/13/23 16:15	04/20/23 11:24	1

Lab Sample ID: LCS 160-607366/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 608246
Prep Batch: 607366

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.15		1.59	1.00	0.240	pCi/L	103	75 - 125		
Uranium-238			13.0	13.65		1.63	1.00	0.159	pCi/L	105	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*78.6*		*30 - 110*

Lab Sample ID: 570-132013-1 DU
Client Sample ID: EPSW001IE01_20230321
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 608249
Prep Batch: 607366

Analyte	Sample Result	Sample Qual		DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit			RER	RER Limit
Dissolved Uranium	0.210	U		0.3062		0.250	1.00	0.240	pCi/L			0.19	1

Client: Haley & Aldrich, Inc. Job ID: 570-124012-6

Sro@ct9 ite: Wbeins / / Pj l/ BA and Wg S - FLM

Rad

Filtration Batch: 605051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124012-1	LS/ M001IL01f 40420241	Dimmol3ed	Mater	Piltration	
570-124012-1	LS/ M001IL01f 40420241	Dimmol3ed	Mater	Piltration	
570-124012-1 DE	LS/ M001IL01f 40420241	Dimmol3ed	Mater	Piltration	

Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124012-1	LS/ M001IL01f 40420241	Total9FA	Mater	Pillf _ eo-0	
g W1N0-N054k29l-A	g ethod Wanp	Total9FA	Mater	Pillf _ eo-0	
j C/ 1N0-N054k294-A	j ab Control / au xle	Total9FA	Mater	Pillf _ eo-0	

Prep Batch: 605774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124012-1	LS/ M001IL01f 40420241	Dimmol3ed	Mater	Pillf _ eo-0	N05051
g W1N0-N057769l-A	g ethod Wanp	Total9FA	Mater	Pillf _ eo-0	
j C/ 1N0-N057694-A	j ab Control / au xle	Total9FA	Mater	Pillf _ eo-0	

Prep Batch: 607182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124012-1	LS/ M001IL01f 40420241	Total9FA	Mater	LvtChrou	
g W1N0-N071k49l-A	g ethod Wanp	Total9FA	Mater	LvtChrou	
j C/ 1N0-N071k494-A	j ab Control / au xle	Total9FA	Mater	LvtChrou	

Prep Batch: 607366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124012-1	LS/ M001IL01f 40420241	Dimmol3ed	Mater	LvtChrou	N05051
g W1N0-N072NN9l-A	g ethod Wanp	Total9FA	Mater	LvtChrou	
j C/ 1N0-N072NN94-A	j ab Control / au xle	Total9FA	Mater	LvtChrou	
570-124012-1 DE	LS/ M001IL01f 40420241	Dimmol3ed	Mater	LvtChrou	N05051

Prep Batch: 607836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124012-1	LS/ M001IL01f 40420241	Dimmol3ed	Mater	L3axoration	N05051
570-124012-1	LS/ M001IL01f 40420241	Total9FA	Mater	L3axoration	
g W1N0-N07k2N9l-A	g ethod Wanp	Total9FA	Mater	L3axoration	
j C/ 1N0-N07k2N94-A	j ab Control / au xle	Total9FA	Mater	L3axoration	
j C/ W1N0-N07k2N92-A	j ab Control / au xle	Total9FA	Mater	L3axoration	
570-124012-1 g /	LS/ M001IL01f 40420241	Total9FA	Mater	L3axoration	
570-124012-1 g / WT	LS/ M001IL01f 40420241	Total9FA	Mater	L3axoration	
570-124012-1 DE	LS/ M001IL01f 40420241	Total9FA	Mater	L3axoration	

Prep Batch: 607890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124012-1	LS/ M001IL01f 40420241	Total9FA	Mater	j / Cf Dimtf / 8mx	
g W1N0-N07kR09l-A	g ethod Wanp	Total9FA	Mater	j / Cf Dimtf / 8mx	
j C/ 1N0-N07kR094-A	j ab Control / au xle	Total9FA	Mater	j / Cf Dimtf / 8mx	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_20230321
Lab Sample ID: 570-132013-1

Date Collected: 03/21/23 11:00
Matrix: Water

Date Received: 03/22/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1900 mL	1900 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	Evaporation			199.99 mL	1.0 g	607836	04/17/23 13:56	MST	EET SL
Dissolved	Analysis	900.0		1	1.0 mL	1.0 mL	608689	04/25/23 16:49	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			200.01 mL	1.0 g	607836	04/17/23 13:56	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	608688	04/25/23 16:46	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	605774	03/31/23 15:10	AJP	EET SL
Dissolved	Analysis	901.1		1			607328	04/13/23 12:57	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Total/NA	Analysis	901.1		1			607160	04/12/23 16:52	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	LSC_Dist_Susp			100.40 mL	1.0 g	607890	04/18/23 11:12	ZR	EET SL
Total/NA	Analysis	906.0		1			608161	04/19/23 09:15	REV	EET SL
	Instrument ID: LSC3180									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	ExtChrom			254.73 mL	1.0 mL	607366	04/13/23 16:15	SEH	EET SL
Dissolved	Analysis	A-01-R		1			608248	04/20/23 11:24	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			500.09 mL	1.0 mL	607182	04/12/23 15:01	SRE	EET SL
Total/NA	Analysis	A-01-R		1			607722	04/17/23 22:46	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

4 Client HC Cay & Cadrchler,
. dobPrnj/ lni : Soi leB / / gF l/ L & HeA SR. - MNE

Job ID: 570-129012-8

Method	Method Description	Protocol	Laboratory
W00,0	Gdoss & CpcH HeA Gdoss Si nH L HAloHrnlvlna	N. &	NNT / F
W01,1	4 i slum 127 y 3 nci dGHmmH Nmlmi ds CG/ (	N. &	NNT / F
W0) ,0	TdnlumhTonHCCF/ 4 (	N. &	NNT / F
&-01-L	Isonoplr 6 dHelum C&CpcH / pi r ndomi nda(	D3 N	NNT / F
NvHpodHnloe	. d pHdHnloehNvHpodHnloe	Moei	NNT / F
NUn4 cdom	. d pHdHnloehNUndHrnloe 4 cdomHnoBdHpca L i sle &r nlelAi / i pHdHnloe	Moei	NNT / F
glC&Gi o-0	glCCGi omi ndahMo le-Gdo_nc	Moei	NNT / F
gl0dHnloe	/ HmpC gl0dHnloe	Moei	NNT / F
F/ 4 xDlsnx/ usp	DlsnlCHnloe HeA / uspi esloe CF/ 4 (	Moei	NNT / F

Protocol References:

D3 N w 6 ,/ , Di pHdmi eno=Nei dBa

N. & w 6 / Nevldoemi enHC. dori r nloe &Bi er a

Moei w Moei

Laboratory References:

NNT / F w Nudo=les / n, Foulsh12715 L lAi dTdHlCModnchNHdnc 4 lnahR 3) 2085hTNF C218(9Wf-f 5))

Nudo=les 4 HCsr li eri

Sample Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132013-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132013-1	EPSW001IE01_20230321	Water	03/21/23 11:00	03/22/23 17:10

Loc: 570
132013

570-132013 Chain of Custody

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▫ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number : 129095-010-001-06	▫ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	▫ 2 days			Job / SDG No.:
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable(E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
–	–	–	–	–	–			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_20230321	3-21-23	1100	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal

▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ▫ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company: J&A	Date/Time: 3-21-23 1300	Received by:	EC	Date/Time: 3/21/23 1320
Relinquished by:	Company: EC	Date/Time: 3/21/23 1710	Received by:		Date/Time: 3/21/23 0710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 1.6/1.6 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211951.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132013-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/24/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha/Beta- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
EPSW001IE01_20230321 (570-132013-1)	3/21/23	11:00 Pacific		Water			X	X	X	X	X	X	X	4	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Em Kothi	03/22/23 12:36	FC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/26/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212085.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132013-4
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/24/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230321 (570-132013-1)	3/21/23	11:00 Pacific		Water			X	1	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	FED EX	03/23/23 13:00	EC	FED EX		
2				Jena Woodrington	MAR 24 2023 0910	CTASD
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132013-6

Login Number: 132013

List Number: 1

Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
/ adioactiRity v awns chec' ed or iwk4< bac' =round awmeawured by a wurRey meter.	N4A	
ghe coolerswcuwtody weal, iTf rewent, iwintact.	grue	
pamf le cuwtody wealw, iTf rewent, are intact.	grue	
ghe cooler or wamf lewdo not af f ear to haRe been comf romiwed or tamf ered v ith.	grue	
pamf lewv ere receiRed on ice.	grue	
Cooler gemf erature iwaccef table.	grue	
Cooler gemf erature iwrecorded.	grue	
CSC iwf rewent.	grue	
CSC iwTilled out in in' and le=ible.	grue	
CSC iwTilled out v ith all f ertinent inTormation.	grue	
Iwthe Cield pamf lerswname f rewent on CSCF	Calwe	/ eTer to Job NarratiRe Tor detailw.
ghere are no diwcref anciewbetv een the containerwreceiRed and the CSC.	grue	
pamf leware receiRed v ithin Holdin= gime ?e(cludin= tewtwv ith immediate Hgwx	grue	
pamf le containerwhaRe le=ible labelw.	grue	
Containerware not bro' en or lea' in=.	grue	
pamf le collection date4imeware f roRided.	grue	
Af f rof riate wamf le containerware uwed.	grue	
pamf le bottleware comf letely Tilled.	grue	
pamf le) rewerRation PeriTied.	grue	
ghere iwwuTTicient Rol. Tor all reVuewted analywew, incl. any reVuewted q p4q pMw	grue	
ContainerwreVuirin= Dero headwf ace haRe no headwf ace or bubble iw kzmm ?146"x.	grue	
q ultif hawic wamf leware not f rewent.	grue	
pamf lewdo not reVuire wf littin= or comf owitin=.	grue	
/ ewidual Chlorine Chec' ed.	N4A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132013-6

Login Number: 132013
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 03/23/23 12:20 PM

Question	Answer	Comment
/ adioactiRity v awns: chec' ed or iwk4< bac' =round awmeawured by a wurRey meter.	grue	
ghe coolerswcuwtody weal, iTf rewent, iwintact.	grue	
pamf le cuwtody wealw, iTf rewent, are intact.	grue	
ghe cooler or wamf lewdo not af f ear to haRe been comf romiwed or tamf ered v ith.	grue	
pamf lewv ere receiRed on ice.	grue	
Cooler gemf erature iwaccef table.	grue	
Cooler gemf erature iwrecorded.	grue	
CSC iwf rewent.	grue	
CSC iwTilled out in in' and le=ible.	grue	
CSC iwTilled out v ith all f ertinent inTormation.	grue	
Iwthe Cield pamf lerswname f rewent on CSCF	grue	
ghere are no diwcref anciewbetv een the containerwreceiRed and the CSC.	grue	
pamf leware receiRed v ithin Holdin= gime ?e(cludin= tewtwv ith immediate Hgwx	grue	
pamf le containerwhaRe le=ible labelw.	grue	
Containerware not bro' en or lea' in=.	grue	
pamf le collection date4imeware f roRided.	grue	
Af f rof riate wamf le containerware uwed.	grue	
pamf le bottleware comf letely Tilled.	grue	
pamf le) rewerRation PeriTied.	grue	/ eTer to Job NarratiRe Tor detailw.
ghere iwwuTTicient Rol. Tor all reVuewted analywew, incl. any reVuewted q p4q pMw	grue	
ContainerwreVuirin= Dero headwf ace haRe no headwf ace or bubble iw kzmm ?146"x.	grue	
q ultif hawic wamf leware not f rewent.	grue	
pamf lewdo not reVuire wf littin= or comf owitin=.	grue	
/ ewidual Chlorine Chec' ed.	N4A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/4/2023 9:44:09 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-132015-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

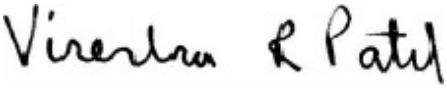
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-1

Qualifiers

Metals

Qualifier	Qualifier Description
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

General Chemistry

Qualifier	Qualifier Description
BU	Analyzed out of holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132015-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132015-1

Comments
No additional comments.

Receipt
The sample was received on 3/21/2023 5:10 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9º C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The method blank for preparation batch 570-314038 and analytical batch 570-314160 contained Iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPSW001IE01_20230314 (570-132015-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: The following sample was received outside of holding time: EPSW001IE01_20230314 (570-132015-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-1

Client Sample ID: EPSW001IE01_20230314

Lab Sample ID: 570-132015-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	7.9		1.0	0.24	mg/L	1		300.0	Total/NA
Arsenic	4.7		1.0	0.16	ug/L	1		200.8	Total Recoverable
Cadmium	0.19	J,DX	1.0	0.13	ug/L	1		200.8	Total Recoverable
Copper	14		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	20000	MB	20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	480		1.0	0.41	ug/L	1		200.8	Total Recoverable
Lead	14		1.0	0.12	ug/L	1		200.8	Total Recoverable
Zinc	72		20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	1.7	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Arsenic	1.7	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Copper	2.2	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	400	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	11	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Lead	0.20	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Selenium	0.54	J,DX BU	2.0	0.52	ug/L	1		200.8	Dissolved
Total Suspended Solids	380	BU	3.3	2.8	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPSW001IE01_20230314
Lab Sample ID: 570-132015-1
Date Collected: 03/14/23 13:00
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	7.9		1.0	0.24	mg/L			03/27/23 08:13	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPSW001IE01_20230314
Lab Sample ID: 570-132015-1
Date Collected: 03/14/23 13:00
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	4.7		1.0	0.16	ug/L		03/23/23 07:42	03/23/23 11:32	1
Cadmium	0.19	J,DX	1.0	0.13	ug/L		03/23/23 07:42	03/23/23 11:32	1
Copper	14		2.0	0.32	ug/L		03/23/23 07:42	03/23/23 11:32	1
Iron	20000	MB	20	3.7	ug/L		03/23/23 07:42	03/23/23 11:32	1
Manganese	480		1.0	0.41	ug/L		03/23/23 07:42	03/23/23 11:32	1
Lead	14		1.0	0.12	ug/L		03/23/23 07:42	03/23/23 11:32	1
Zinc	72		20	2.8	ug/L		03/23/23 07:42	03/23/23 11:32	1
Selenium	1.7	J,DX	2.0	0.52	ug/L		03/23/23 07:42	03/23/23 11:32	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPSW001IE01_20230314
Date Collected: 03/14/23 13:00
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132015-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**1.7**	**BU**	1.0	0.16	ug/L			03/22/23 14:04	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/22/23 14:04	1
Copper	**2.2**	**BU**	2.0	0.32	ug/L			03/22/23 14:04	1
Iron	**400**	**BU**	20	3.7	ug/L			03/22/23 14:04	1
Manganese	**11**	**BU**	1.0	0.41	ug/L			03/22/23 14:04	1
Lead	**0.20**	**J,DX BU**	1.0	0.12	ug/L			03/22/23 14:04	1
Zinc	ND	BU	20	2.8	ug/L			03/22/23 14:04	1
Selenium	**0.54**	**J,DX BU**	2.0	0.52	ug/L			03/22/23 14:04	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

General Chemistry

Client Sample ID: EPSW001IE01_20230314
Date Collected: 03/14/23 13:00
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132015-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	380	BU	3.3	2.8	mg/L			03/23/23 17:10	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-314837/5
Matrix: Water
Analysis Batch: 314837

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			03/27/23 04:25	1

Lab Sample ID: LCS 570-314837/6
Matrix: Water
Analysis Batch: 314837

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	48.9		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-314837/7
Matrix: Water
Analysis Batch: 314837

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	50.0	48.8		mg/L		98	90 - 110	0	15

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-314038/1-A
Matrix: Water
Analysis Batch: 314166

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 314038

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L		03/23/23 07:42	03/23/23 11:20	1
Cadmium	ND		1.0	0.13	ug/L		03/23/23 07:42	03/23/23 11:20	1
Copper	ND		2.0	0.32	ug/L		03/23/23 07:42	03/23/23 11:20	1
Iron	3.83	J,DX	20	3.7	ug/L		03/23/23 07:42	03/23/23 11:20	1
Manganese	ND		1.0	0.41	ug/L		03/23/23 07:42	03/23/23 11:20	1
Lead	ND		1.0	0.12	ug/L		03/23/23 07:42	03/23/23 11:20	1
Zinc	ND		20	2.8	ug/L		03/23/23 07:42	03/23/23 11:20	1
Selenium	ND		2.0	0.52	ug/L		03/23/23 07:42	03/23/23 11:20	1

Lab Sample ID: LCS 570-314038/2-A
Matrix: Water
Analysis Batch: 314166

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 314038

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	80.0	79.2		ug/L		99	85 - 115
Cadmium	80.0	79.6		ug/L		99	85 - 115
Copper	80.0	78.9		ug/L		99	85 - 115
Iron	800	806		ug/L		101	85 - 115
Manganese	80.0	79.0		ug/L		99	85 - 115
Lead	80.0	81.5		ug/L		102	85 - 115
Zinc	80.0	77.6		ug/L		97	85 - 115
Selenium	80.0	78.4		ug/L		98	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-314038/3-A
Matrix: Water
Analysis Batch: 314166

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 314038

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			80.0	79.7		ug/L		100	85 - 115	1	20
Cadmium			80.0	80.2		ug/L		100	85 - 115	1	20
Copper			80.0	78.5		ug/L		98	85 - 115	1	20
Iron			800	804		ug/L		101	85 - 115	0	20
Manganese			80.0	79.3		ug/L		99	85 - 115	0	20
Lead			80.0	81.5		ug/L		102	85 - 115	0	20
Zinc			80.0	78.8		ug/L		98	85 - 115	2	20
Selenium			80.0	77.7		ug/L		97	85 - 115	1	20

Lab Sample ID: MB 570-313762/1-A
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.16	ug/L			03/22/23 13:05	1
Cadmium	ND		1.0	0.13	ug/L			03/22/23 13:05	1
Copper	ND		2.0	0.32	ug/L			03/22/23 13:05	1
Iron	ND		20	3.7	ug/L			03/22/23 13:05	1
Manganese	ND		1.0	0.41	ug/L			03/22/23 13:05	1
Lead	ND		1.0	0.12	ug/L			03/22/23 13:05	1
Zinc	ND		20	2.8	ug/L			03/22/23 13:05	1
Selenium	ND		2.0	0.52	ug/L			03/22/23 13:05	1

Lab Sample ID: LCS 570-313762/2-A
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic			80.0	80.7		ug/L		101	85 - 115		
Cadmium			80.0	81.1		ug/L		101	85 - 115		
Copper			80.0	77.1		ug/L		96	85 - 115		
Iron			800	798		ug/L		100	85 - 115		
Manganese			80.0	79.4		ug/L		99	85 - 115		
Lead			80.0	77.2		ug/L		96	85 - 115		
Zinc			80.0	79.2		ug/L		99	85 - 115		
Selenium			80.0	77.1		ug/L		96	85 - 115		

Lab Sample ID: LCSD 570-313762/3-A
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			80.0	81.0		ug/L		101	85 - 115	0	20
Cadmium			80.0	81.7		ug/L		102	85 - 115	1	20
Copper			80.0	78.9		ug/L		99	85 - 115	2	20
Iron			800	801		ug/L		100	85 - 115	0	20
Manganese			80.0	80.9		ug/L		101	85 - 115	2	20
Lead			80.0	77.3		ug/L		97	85 - 115	0	20
Zinc			80.0	78.8		ug/L		98	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-313762/3-A
Matrix: Water
Analysis Batch: 313835

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Selenium			80.0	76.9		ug/L		96	85 - 115	0	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-314260/1
Matrix: Water
Analysis Batch: 314260

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/23/23 17:09	1

Lab Sample ID: LCS 570-314260/2
Matrix: Water
Analysis Batch: 314260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	97.0		mg/L		97	77 - 116		

Lab Sample ID: LCSD 570-314260/3
Matrix: Water
Analysis Batch: 314260

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	98.0		mg/L		98	77 - 116	1	10

HPLC/IC

Analysis Batch: 314837

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_20230314	Total/NA	Water	300.0	
MB 570-314837/5	Method Blank	Total/NA	Water	300.0	
LCS 570-314837/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-314837/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Metals

Filtration Batch: 313762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_20230314	Dissolved	Water	Filtration	
MB 570-313762/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-313762/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-313762/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 313835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-313762/1-A	Method Blank	Dissolved	Water	200.8	313762
LCS 570-313762/2-A	Lab Control Sample	Dissolved	Water	200.8	313762
LCSD 570-313762/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	313762

Analysis Batch: 313836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_20230314	Dissolved	Water	200.8	313762

Prep Batch: 314038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_20230314	Total Recoverable	Water	200.8	
MB 570-314038/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-314038/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-314038/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Analysis Batch: 314160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_20230314	Total Recoverable	Water	200.8	314038

Analysis Batch: 314166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-314038/1-A	Method Blank	Total Recoverable	Water	200.8	314038
LCS 570-314038/2-A	Lab Control Sample	Total Recoverable	Water	200.8	314038
LCSD 570-314038/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	314038

General Chemistry

Analysis Batch: 314260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_20230314	Total/NA	Water	SM 2540D	
MB 570-314260/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-314260/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-314260/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_20230314
Lab Sample ID: 570-132015-1
Date Collected: 03/14/23 13:00
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	314837	03/27/23 08:13	UIP1	EET CAL 4
	Instrument ID: IC9									
Dissolved	Filtration	Filtration			50 mL	50 mL	313762	03/22/23 13:40	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			313836	03/22/23 14:04	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	314038	03/23/23 07:42	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			314160	03/23/23 11:32	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total/NA	Analysis	SM 2540D		1	300 mL	1000 mL	314260	03/23/23 17:10	UWCT	EET CAL 4
	Instrument ID: BAL71									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124015-1

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Laboratory: Eurofins Calscience

All accreditationf R2certiNcationf held by thif laboratory are lif ted. Rot all accreditationf R2certiNcationf are applicable to thif report.

Authority	Program	Identification Number	Expiration Date
Arizona	j tate	AZ0820	11-1u-42
CaliNornia	gof AnSelef Co9nty j anitation Dif trictf	1010Q	07-21-42
CaliNornia	j CAv L D gA6	17gA0Q1Q	11-20-42
CaliNornia	j tate	2084	07-21-4O
ReEada	j tate	CA00111	08-01-42
UreSon	RMgA6	O175	04-04-4O
mj DA	mj Bederal 6roSraWf	6220-44-0005Q	05-4O-42
s af hinSton	j tate	CQ1u-18	10-11-42

M9roNhf Calf cience

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132015-1	EPSW001IE01_20230314	Water	03/14/23 13:00	03/21/23 17:10

570-132015 Chain of Custody

Loc: 570
132015

all metals to be analyzed using Method 200.8

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES | RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.,

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Chad Johnson

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 6020: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 6020: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Trifium (E906.0)			Sample Specific Notes:
--	--	--	--	--	--			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Pcly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber			Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
BPSW001IE01_03142023	03/14/23	1300	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
A1BPSW0001_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
DUP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1			

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company: HA	Date/Time: 3-21-23/1300	Received by:	EC	Date/Time: 3/21/23 1320
Relinquished by:	Company: EC	Date/Time: 3/21/23 1710	Received by:	IK	Date/Time: 3/21/23 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 1.6/1.6 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

4/4/2023

SAP COC 2019/2020 VERSION 3

Loc: 570
132015

570-132015 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES | | RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.,

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
--	--	--	--	--	--			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_03142023	03/14/23	1300	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
A1BPSW0001_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
DUP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company: JA	Date/Time: 3-21-23/1300	Received by:		EC	Date/Time: 3/21/23 1320
Relinquished by:	Company: KE	Date/Time: 3/21/23 1710	Received by:		KE	Date/Time: 3/21/23 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:			Date/Time:

1.9/1.9 1.6/1.6 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132015-1

Login Number: 132015
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/4/2023 9:44:52 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-132015-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

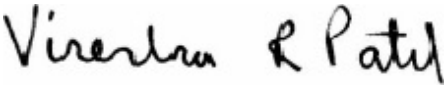
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-2

Qualifiers

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132015-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132015-2

Comments
No additional comments.

Receipt
The sample was received on 3/21/2023 5:10 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9º C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-2

Client Sample ID: EPSW001IE01_20230314

Lab Sample ID: 570-132015-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.036	MB	0.0025	0.00040	ug/L	5		1631E	Total/NA
Mercury	0.0064	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPSW001IE01_20230314
Lab Sample ID: 570-132015-1
Date Collected: 03/14/23 13:00
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.036	MB	0.0025	0.00040	ug/L			03/28/23 19:48	5

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPSW001IE01_20230314
Lab Sample ID: 570-132015-1
Date Collected: 03/14/23 13:00
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0064	MB	0.00050	0.000079	ug/L			03/28/23 18:58	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-4916/ 5293
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000813	J,DX	0.00050	0.000079	ug/L			03/28/23 14:27	1

Lab Sample ID: MB 580-4916/ 5294
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/28/23 14:31	1

Lab Sample ID: MB 580-4916/ 5295
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/28/23 14:35	1

Lab Sample ID: LCS 580-4916/ 5296
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	7 Rec	7 Rec Limits
Mercury	0.00500	0.00466		ug/L		93	77 - 123

Lab Sample ID: LCSD 580-4916/ 5297
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	7 Rec	7 Rec Limits	RPD	RPD Limit
Mercury	0.00500	0.00473		ug/L		95	77 - 123	2	24

Lab Sample ID: MB 580-491366/21-A
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/28/23 18:37	1

QC Association Summary

6 Client HCay & Adrchler, Job ID: 570-132015-2
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR. - MNE

Metals

Filtration Batch: 421366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	N. / E 001IN01W2023031_	DIssoCvi A	E Hnid	gl0dHnoe	
RS 580-_21344j1-&	Rincoa SCHek	DIssoCvi A	E Hnid	gl0dHnoe	

Analysis Batch: 421695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	N. / E 001IN01W2023031_	DIssoCvi A	E Hnid	1431N	_21344
570-132015-1	N. / E 001IN01W2023031_	TorHCjM&	E Hnid	1431N	
RS 580-_21344j1-&	Rincoa SCHek	DIssoCvi A	E Hnid	1431N	_21344
RS 580-_21495j23	Rincoa SCHek	TorHCjM&	E Hnid	1431N	
RS 580-_21495j2_	Rincoa SCHek	TorHCjM&	E Hnid	1431N	
RS 580-_21495j25	Rincoa SCHek	TorHCjM&	E Hnid	1431N	
F6 / 580-_21495j24	FHb 6 oendbC/ HmpC	TorHCjM&	E Hnid	1431N	
F6 / D 580-_21495j27	FHb 6 oendbC/ HmpC Dup	TorHCjM&	E Hnid	1431N	

Nudofles 6 HCsrli eri

Page 10 of 18 4/4/2023

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-2

Client Sample ID: EPSW001IE01_20230314
Date Collected: 03/14/23 13:00
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132015-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	421366	03/24/23 14:10	DRM	EET SEA
Dissolved	Analysis	1631E		1			421695	03/28/23 18:58	D1C	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		5			421695	03/28/23 19:48	D1C	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-2
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132015-1	EPSW001IE01_20230314	Water	03/14/23 13:00	03/21/23 17:10

Loc: 570
132015

570-132015 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES | | RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.,

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
--	--	--	--	--	--			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_03142023	03/14/23	1300	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
A1BPSW0001_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
DUP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company:	Date/Time:	Received by:		Date/Time:
	JVA	3-21-23/1300		EC	3/21/23 1320
Relinquished by:	Company:	Date/Time:	Received by:		Date/Time:
	HC	3/21/23 1710		IK	3/21/23 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 1.6/1.6 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212088.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-132015-2
Address: 5755 8th Street East,	Due Date Requested: 4/6/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424	PO #:			
Phone: 253-922-2310(Tel)	WO #:			
Email:	Project #: 57014595			
Project Name: Boeing SSFL ISRA and BMP - NEW	SSOW#:			
Site:				

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Y - Trizma
	Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPSW001IE01_20230314 (570-132015-1)	3/14/23	13:00 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements: 6368 9239 4320

Empty Kit Relinquished by:		Date:	Time:		Method of Shipment:	
Relinquished by:	Date/Time: 03/13/23 8:38	Company: EC	Received by:	Date/Time: 3/14/23 9:40	Company: EC	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
Δ Yes Δ No	NA	1.5 D:3 1.6

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132015-2

Login Number: 132015
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132015-2

Login Number: 132015
List Number: 3
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/24/23 02:07 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-132015-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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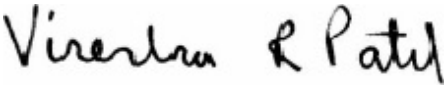
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
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Definitions/Glossary

Client: Haley & Aldrich, Inc. Job ID: 570-132015-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132015-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132015-3

Comments
No additional comments.

Receipt
The sample was received on 3/21/2023 5:10 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9º C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: EPSW001IE01_20230314 (570-132015-1). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: EPSW001IE01_20230314 (570-132015-1), (CCV 320-666845/1), (LCS 320-666093/2-A), (LCSD 320-666093/3-A) and (MB 320-666093/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: The ending resolution check indicated that the instrument was slightly less than 10,000 resolution for numerous masses. The samples were evaluated for high mass fragmentation breakthrough and none was found. There is no adverse impact on the data. The following samples are impacted.

EPSW001IE01_20230314 (570-132015-1), (CCV 320-666845/1), (LCS 320-666093/2-A), (LCSD 320-666093/3-A), (MB 320-666093/1-A) and (WDM 320-666845/2)

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD associated with the following samples run on instrument 11D2 exceeded this criteria: (CCV 320-668397/2) and (MB 320-666093/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-3

Client Sample ID: EPSW001IE01_03142023

Lab Sample ID: 570-132015-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.0000019	J,DX MB	0.000049	0.00000011	ug/L	1		1613B	Total/NA
2,3,4,7,8-PeCDF	0.00000085	J,DX q	0.000049	0.00000012	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDD	0.0000040	J,DX MB q	0.000049	0.00000050	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000068	J,DX MB	0.000049	0.00000051	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDD	0.0000072	J,DX MB	0.000049	0.00000046	ug/L	1		1613B	Total/NA
1,2,3,4,7,8-HxCDF	0.0000045	J,DX q	0.000049	0.00000066	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDF	0.0000050	J,DX q	0.000049	0.00000064	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000010	J,DX MB	0.000049	0.00000065	ug/L	1		1613B	Total/NA
2,3,4,6,7,8-HxCDF	0.0000059	J,DX	0.000049	0.00000060	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.00023	MB	0.000049	0.0000018	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.00012	MB	0.000049	0.0000012	ug/L	1		1613B	Total/NA
1,2,3,4,7,8,9-HpCDF	0.0000049	J,DX MB	0.000049	0.0000013	ug/L	1		1613B	Total/NA
OCDD	0.0023	MB	0.000098	0.0000062	ug/L	1		1613B	Total/NA
OCDF	0.00017	MB	0.000098	0.00000059	ug/L	1		1613B	Total/NA
Total TCDF	0.0000011	J,DX MB	0.0000098	0.00000037	ug/L	1		1613B	Total/NA
Total PeCDF	0.000012	J,DX MB q	0.000049	0.00000012	ug/L	1		1613B	Total/NA
Total HxCDD	0.000080	MB q	0.000049	0.00000049	ug/L	1		1613B	Total/NA
Total HxCDF	0.000082	MB q	0.000049	0.00000064	ug/L	1		1613B	Total/NA
Total HpCDD	0.00047	MB	0.000049	0.0000018	ug/L	1		1613B	Total/NA
Total HpCDF	0.00021	MB	0.000049	0.0000012	ug/L	1		1613B	Total/NA
2,3,7,8-TCDF - RA	0.0000011	J,DX MB	0.0000098	0.00000035	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPS4 001IE01_031W2023
Lab Sample ID: 570-132015-1
Date Collected: 03/1W23 13:00
Matrix: 4 ater
Date Recei8ed: 03/21/23 17:10

Analvte	Result	Uualifier	RL	EDL	z nit	D	Prepared	Analvyed	Dil Fac
2,3,7,8-TCDD	ND		0.0000098	0.00000039	ug/L		04/06/23 16:03	04/11/23 17:47	1
1,2,3,7,8-PeCDD	ND		0.000049	0.00000026	ug/L		04/06/23 16:03	04/11/23 17:47	1
1,2,3,7,q-PeCDF	**0f000001.**	**J,DX MB**	0.000049	0.00000011	ug/L		04/06/23 16:03	04/11/23 17:47	1
2,3,W7,q-PeCDF	**0f000000q5**	**J,DX 9**	0.000049	0.00000012	ug/L		04/06/23 16:03	04/11/23 17:47	1
1,2,3,W7,q-HxCDD	**0f00000W0**	**J,DX MB 9**	0.000049	0.00000050	ug/L		04/06/23 16:03	04/11/23 17:47	1
1,2,3,6,7,q-HxCDD	**0f000006q**	**J,DX MB**	0.000049	0.00000051	ug/L		04/06/23 16:03	04/11/23 17:47	1
1,2,3,7,q,. -HxCDD	**0f0000072**	**J,DX MB**	0.000049	0.00000046	ug/L		04/06/23 16:03	04/11/23 17:47	1
1,2,3,W7,q-HxCDF	**0f00000W6**	**J,DX 9**	0.000049	0.00000066	ug/L		04/06/23 16:03	04/11/23 17:47	1
1,2,3,6,7,q-HxCDF	**0f0000050**	**J,DX 9**	0.000049	0.00000064	ug/L		04/06/23 16:03	04/11/23 17:47	1
1,2,3,7,q,. -HxCDF	**0f0000010**	**J,DX MB**	0.000049	0.00000065	ug/L		04/06/23 16:03	04/11/23 17:47	1
2,3,W6,7,q-HxCDF	**0f000005.**	**J,DX**	0.000049	0.00000060	ug/L		04/06/23 16:03	04/11/23 17:47	1
1,2,3,W6,7,q-HpCDD	**0f00023**	**MB**	0.000049	0.0000018	ug/L		04/06/23 16:03	04/11/23 17:47	1
1,2,3,W6,7,q-HpCDF	**0f00012**	**MB**	0.000049	0.0000012	ug/L		04/06/23 16:03	04/11/23 17:47	1
1,2,3,W7,q,. -HpCDF	**0f00000W**	**J,DX MB**	0.000049	0.0000013	ug/L		04/06/23 16:03	04/11/23 17:47	1
OCDD	**0f0023**	**MB**	0.000098	0.0000062	ug/L		04/06/23 16:03	04/11/23 17:47	1
OCDF	**0f00017**	**MB**	0.000098	0.00000059	ug/L		04/06/23 16:03	04/11/23 17:47	1
Total TCDD	ND		0.0000098	0.00000091	ug/L		04/06/23 16:03	04/11/23 17:47	1
Total TCDF	**0f0000011**	**J,DX MB**	0.0000098	0.0000000037	ug/L		04/06/23 16:03	04/11/23 17:47	1
Total PeCDD	ND		0.000049	0.00000088	ug/L		04/06/23 16:03	04/11/23 17:47	1
Total PeCDF	**0f000012**	**J,DX MB 9**	0.000049	0.00000012	ug/L		04/06/23 16:03	04/11/23 17:47	1
Total HxCDD	**0f0000q0**	**MB 9**	0.000049	0.00000049	ug/L		04/06/23 16:03	04/11/23 17:47	1
Total HxCDF	**0f0000q2**	**MB 9**	0.000049	0.00000064	ug/L		04/06/23 16:03	04/11/23 17:47	1
Total HpCDD	**0f000W7**	**MB**	0.000049	0.0000018	ug/L		04/06/23 16:03	04/11/23 17:47	1
Total HpCDF	**0f00021**	**MB**	0.000049	0.0000012	ug/L		04/06/23 16:03	04/11/23 17:47	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*25 - 106*	*46/40/23 10:43*	*46/11/23 17:67*	*1*
13C-2,3,7,8-TCDF	*71*		*26 - 109*	*46/40/23 10:43*	*46/11/23 17:67*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*25 - 181*	*46/40/23 10:43*	*46/11/23 17:67*	*1*
13C-1,2,3,7,8-PeCDF	*75*		*26 - 185*	*46/40/23 10:43*	*46/11/23 17:67*	*1*
13C-2,3,6,7,8-PeCDF	*70*		*21 - 178*	*46/40/23 10:43*	*46/11/23 17:67*	*1*
13C-1,2,3,6,7,8-HxCDD	*75*		*32 - 161*	*46/40/23 10:43*	*46/11/23 17:67*	*1*
13C-1,2,3,0,7,8-HxCDD	*79*		*28 - 134*	*46/40/23 10:43*	*46/11/23 17:67*	*1*
13C-1,2,3,6,7,8-HxCDF	*74*		*20 - 152*	*46/40/23 10:43*	*46/11/23 17:67*	*1*
13C-1,2,3,0,7,8-HxCDF	*73*		*20 - 123*	*46/40/23 10:43*	*46/11/23 17:67*	*1*
13C-1,2,3,7,8,9-HxCDF	*76*		*29 - 167*	*46/40/23 10:43*	*46/11/23 17:67*	*1*
13C-2,3,6,0,7,8-HxCDF	*70*		*28 - 130*	*46/40/23 10:43*	*46/11/23 17:67*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPS4_001IE01_031W2023
Lab Sample ID: 570-132015-1
Date Collected: 03/1W23 13:00
Matrix: 4 ater
Date Recei8ed: 03/21/23 17:10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,0,7,8-HpCDD	86		23 - 164	46/40/23 10:43	46/11/23 17:67	1
13C-1,2,3,6,0,7,8-HpCDF	07		28 - 163	46/40/23 10:43	46/11/23 17:67	1
13C-1,2,3,6,7,8,9-HpCDF	77		20 - 138	46/40/23 10:43	46/11/23 17:67	1
13C-OCDD	70		17 - 157	46/40/23 10:43	46/11/23 17:67	1
13C-OCDF	09		17 - 157	46/40/23 10:43	46/11/23 17:67	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	80		35 - 197	46/40/23 10:43	46/11/23 17:67	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-3

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - RA

Client Sample ID: EPS4_001IE01_031W2023
Date Collected: 03/1W/23 13:00
Date Recei8ed: 03/21/23 17:10

Lab Sample ID: 570-132015-1
Matrix: 4 ater

Analvte	Result	Uuali0er	RL	EDL	z nit	D	Prepared	Analvyed	Dil Fac
2,3,7,q-TCDF	0f0000011	J,DX MB	0.0000098	0.00000035	ug/L		04/06/23 16:03	04/12/23 18:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDF	*07*		*26 - 109*	*46/40/23 10:43*	*46/12/23 18:37*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl6-2,3,7,8-TCDD	*77*		*35 - 197*	*46/40/23 10:43*	*46/12/23 18:37*	*1*

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - 8 _3

Job ID: 570-129015-2

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	37TCDD (35-197)							
570-129015-1	_PS3 001I_01E021N9092	46							
570-129015-1 - RA	_PS3 001I_01E021N9092	77							
MB 290-6660W2/1-A	Method Blank	W1							
MB 290-6660W2/1-A	Method Blank	WW							

Surrogate Legend

27TCDD = 27CIN-9,2,7,4-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	37TCDD (31-191)							
LCS 290-6660W2/9-A	Lab Control Sample	4W							
LCSD 290-6660W2/2-A	Lab Control Sample Dup	74							

Surrogate Legend

27TCDD = 27CIN-9,2,7,4-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-3

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-132015-1	EPSW001IE01_03142023	76	71	85	75	76	75	79	70
570-132015-1 - RA	EPSW001IE01_03142023		67						
MB 320-666093/1-A	Method Blank	77	69	80	73	73	73	81	69
MB 320-666093/1-A	Method Blank		75						

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-132015-1	EPSW001IE01_03142023	73	74	76	84	67	77	76	69
570-132015-1 - RA	EPSW001IE01_03142023								
MB 320-666093/1-A	Method Blank	73	71	73	81	65	72	71	66
MB 320-666093/1-A	Method Blank								

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-666093/2-A	Lab Control Sample	76	68	85	79	79	71	82	69
LCSD 320-666093/3-A	Lab Control Sample Dup	57	53	65	58	59	51	61	51

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-666093/2-A	Lab Control Sample	73	76	76	84	67	75	72	66
LCSD 320-666093/3-A	Lab Control Sample Dup	54	55	55	61	50	56	52	51

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-666093/1-A
Matrix: Water
Analysis Batch: 666845

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 666093

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000029	ug/L		04/06/23 16:03	04/11/23 15:22	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000011	ug/L		04/06/23 16:03	04/11/23 15:22	1
1,2,3,7,8-PeCDF	0.00000127	J,DX q	0.000050	0.00000037	ug/L		04/06/23 16:03	04/11/23 15:22	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000041	ug/L		04/06/23 16:03	04/11/23 15:22	1
1,2,3,4,7,8-HxCDD	0.00000163	J,DX q	0.000050	0.00000051	ug/L		04/06/23 16:03	04/11/23 15:22	1
1,2,3,6,7,8-HxCDD	0.000000254	J,DX q	0.000050	0.00000050	ug/L		04/06/23 16:03	04/11/23 15:22	1
1,2,3,7,8,9-HxCDD	0.000000579	J,DX	0.000050	0.00000046	ug/L		04/06/23 16:03	04/11/23 15:22	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000029	ug/L		04/06/23 16:03	04/11/23 15:22	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000029	ug/L		04/06/23 16:03	04/11/23 15:22	1
1,2,3,7,8,9-HxCDF	0.000000723	J,DX	0.000050	0.00000031	ug/L		04/06/23 16:03	04/11/23 15:22	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000028	ug/L		04/06/23 16:03	04/11/23 15:22	1
1,2,3,4,6,7,8-HpCDD	0.00000293	J,DX	0.000050	0.00000011	ug/L		04/06/23 16:03	04/11/23 15:22	1
1,2,3,4,6,7,8-HpCDF	0.00000157	J,DX q	0.000050	0.00000039	ug/L		04/06/23 16:03	04/11/23 15:22	1
1,2,3,4,7,8,9-HpCDF	0.000000600	J,DX q	0.000050	0.00000043	ug/L		04/06/23 16:03	04/11/23 15:22	1
OCDD	0.0000202	J,DX	0.00010	0.00000034	ug/L		04/06/23 16:03	04/11/23 15:22	1
OCDF	0.00000297	J,DX q	0.00010	0.00000044	ug/L		04/06/23 16:03	04/11/23 15:22	1
Total TCDD	ND		0.000010	0.0000011	ug/L		04/06/23 16:03	04/11/23 15:22	1
Total TCDF	0.000000514	J,DX q	0.000010	0.00000016	ug/L		04/06/23 16:03	04/11/23 15:22	1
Total PeCDD	ND		0.000050	0.00000011	ug/L		04/06/23 16:03	04/11/23 15:22	1
Total PeCDF	0.00000127	J,DX q	0.000050	0.00000039	ug/L		04/06/23 16:03	04/11/23 15:22	1
Total HxCDD	0.00000246	J,DX q	0.000050	0.00000049	ug/L		04/06/23 16:03	04/11/23 15:22	1
Total HxCDF	0.000000723	J,DX	0.000050	0.00000029	ug/L		04/06/23 16:03	04/11/23 15:22	1
Total HpCDD	0.00000534	J,DX q	0.000050	0.00000011	ug/L		04/06/23 16:03	04/11/23 15:22	1
Total HpCDF	0.00000217	J,DX q	0.000050	0.00000041	ug/L		04/06/23 16:03	04/11/23 15:22	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*25 - 164*	*04/06/23 16:03*	*04/11/23 15:22*	*1*
13C-2,3,7,8-TCDF	*69*		*24 - 169*	*04/06/23 16:03*	*04/11/23 15:22*	*1*
13C-1,2,3,7,8-PeCDD	*80*		*25 - 181*	*04/06/23 16:03*	*04/11/23 15:22*	*1*
13C-1,2,3,7,8-PeCDF	*73*		*24 - 185*	*04/06/23 16:03*	*04/11/23 15:22*	*1*
13C-2,3,4,7,8-PeCDF	*73*		*21 - 178*	*04/06/23 16:03*	*04/11/23 15:22*	*1*
13C-1,2,3,4,7,8-HxCDD	*73*		*32 - 141*	*04/06/23 16:03*	*04/11/23 15:22*	*1*
13C-1,2,3,6,7,8-HxCDD	*81*		*28 - 130*	*04/06/23 16:03*	*04/11/23 15:22*	*1*
13C-1,2,3,4,7,8-HxCDF	*69*		*26 - 152*	*04/06/23 16:03*	*04/11/23 15:22*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-666093/1-A
Matrix: Water
Analysis Batch: 666845

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 666093

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDF	73		26 - 123	04/06/23 16:03	04/11/23 15:22	1
13C-1,2,3,7,8,9-HxCDF	71		29 - 147	04/06/23 16:03	04/11/23 15:22	1
13C-2,3,4,6,7,8-HxCDF	73		28 - 136	04/06/23 16:03	04/11/23 15:22	1
13C-1,2,3,4,6,7,8-HpCDD	81		23 - 140	04/06/23 16:03	04/11/23 15:22	1
13C-1,2,3,4,6,7,8-HpCDF	65		28 - 143	04/06/23 16:03	04/11/23 15:22	1
13C-1,2,3,4,7,8,9-HpCDF	72		26 - 138	04/06/23 16:03	04/11/23 15:22	1
13C-OCDD	71		17 - 157	04/06/23 16:03	04/11/23 15:22	1
13C-OCDF	66		17 - 157	04/06/23 16:03	04/11/23 15:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	91		35 - 197	04/06/23 16:03	04/11/23 15:22	1

Lab Sample ID: MB 320-666093/1-A
Matrix: Water
Analysis Batch: 668397

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 666093

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.000010	0.00000067	ug/L		04/06/23 16:03	04/18/23 14:06	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDF	75		24 - 169	04/06/23 16:03	04/18/23 14:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	99		35 - 197	04/06/23 16:03	04/18/23 14:06	1

Lab Sample ID: LCS 320-666093/2-A
Matrix: Water
Analysis Batch: 666845

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 666093

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	0.000200	0.000181		ug/L		91	67 - 158
2,3,7,8-TCDF	0.000200	0.000196		ug/L		98	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000887		ug/L		89	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.000831		ug/L		83	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000826		ug/L		83	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.000851		ug/L		85	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.000855		ug/L		85	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.000857		ug/L		86	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000874		ug/L		87	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000874		ug/L		87	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000859		ug/L		86	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000862		ug/L		86	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000796		ug/L		80	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.000874		ug/L		87	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.000855		ug/L		86	78 - 138
OCDD	0.00200	0.00168		ug/L		84	78 - 144
OCDF	0.00200	0.00178		ug/L		89	63 - 170

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	76		20 - 175
13C-2,3,7,8-TCDF	68		22 - 152
13C-1,2,3,7,8-PeCDD	85		21 - 227
13C-1,2,3,7,8-PeCDF	79		21 - 192
13C-2,3,4,7,8-PeCDF	79		13 - 328
13C-1,2,3,4,7,8-HxCDD	71		21 - 193
13C-1,2,3,6,7,8-HxCDD	82		25 - 163
13C-1,2,3,4,7,8-HxCDF	69		19 - 202
13C-1,2,3,6,7,8-HxCDF	73		21 - 159
13C-1,2,3,7,8,9-HxCDF	76		17 - 205
13C-2,3,4,6,7,8-HxCDF	76		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	84		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	67		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	75		20 - 186
13C-OCDD	72		13 - 199
13C-OCDF	66		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	89		31 - 191

Lab Sample ID: LCSD 320-666093/3-A
Matrix: Water
Analysis Batch: 666845

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 666093

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000186		ug/L		93	67 - 158	3	50
2,3,7,8-TCDF			0.000200	0.000200		ug/L		100	75 - 158	2	50
1,2,3,7,8-PeCDD			0.00100	0.000869		ug/L		87	70 - 142	2	50
1,2,3,7,8-PeCDF			0.00100	0.000854		ug/L		85	80 - 134	3	50
2,3,4,7,8-PeCDF			0.00100	0.000857		ug/L		86	68 - 160	4	50
1,2,3,4,7,8-HxCDD			0.00100	0.000896		ug/L		90	70 - 164	5	50
1,2,3,6,7,8-HxCDD			0.00100	0.000875		ug/L		88	76 - 134	2	50
1,2,3,7,8,9-HxCDD			0.00100	0.000908		ug/L		91	64 - 162	6	50
1,2,3,4,7,8-HxCDF			0.00100	0.000877		ug/L		88	72 - 134	0	50
1,2,3,6,7,8-HxCDF			0.00100	0.000922		ug/L		92	84 - 130	5	50
1,2,3,7,8,9-HxCDF			0.00100	0.000913		ug/L		91	78 - 130	6	50
2,3,4,6,7,8-HxCDF			0.00100	0.000889		ug/L		89	70 - 156	3	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.000827		ug/L		83	70 - 140	4	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.000913		ug/L		91	82 - 122	4	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.000853		ug/L		85	78 - 138	0	50
OCDD			0.00200	0.00182		ug/L		91	78 - 144	8	50
OCDF			0.00200	0.00188		ug/L		94	63 - 170	5	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	57		20 - 175
13C-2,3,7,8-TCDF	53		22 - 152
13C-1,2,3,7,8-PeCDD	65		21 - 227
13C-1,2,3,7,8-PeCDF	58		21 - 192
13C-2,3,4,7,8-PeCDF	59		13 - 328
13C-1,2,3,4,7,8-HxCDD	51		21 - 193
13C-1,2,3,6,7,8-HxCDD	61		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-666093/3-A
Matrix: Water
Analysis Batch: 666845

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 666093

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	51		19 - 202
13C-1,2,3,6,7,8-HxCDF	54		21 - 159
13C-1,2,3,7,8,9-HxCDF	55		17 - 205
13C-2,3,4,6,7,8-HxCDF	55		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	61		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	50		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	56		20 - 186
13C-OCDD	52		13 - 199
13C-OCDF	51		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	78		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-3

Specialty Organics

Prep Batch: 666093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1 - RA	EPSW001IE01_03142023	Total/NA	Water	1613B	
570-132015-1	EPSW001IE01_03142023	Total/NA	Water	1613B	
MB 320-666093/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-666093/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-666093/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 666845

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_03142023	Total/NA	Water	1613B	666093
MB 320-666093/1-A	Method Blank	Total/NA	Water	1613B	666093
LCS 320-666093/2-A	Lab Control Sample	Total/NA	Water	1613B	666093
LCSD 320-666093/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	666093

Analysis Batch: 667316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1 - RA	EPSW001IE01_03142023	Total/NA	Water	1613B	666093

Analysis Batch: 668397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-666093/1-A	Method Blank	Total/NA	Water	1613B	666093

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_03142023
Lab Sample ID: 570-132015-1
Date Collected: 03/14/23 13:00
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B	RA		1016 mL	20.0 uL	666093	04/06/23 16:03	CGB	EET SAC
Total/NA	Analysis	1613B	RA	1	1 uL	1 uL	667316	04/12/23 18:37	DB	EET SAC
	Instrument ID: 11D2									
Total/NA	Prep	1613B			1016 mL	20.0 uL	666093	04/06/23 16:03	CGB	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	666845	04/11/23 17:47	DB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	06-01-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-3

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132015-1	EPSW001IE01_03142023	Water	03/14/23 13:00	03/21/23 17:10

Loc: 570
132015

570-132015 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES | | RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.,

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
--	--	--	--	--	--			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_03142023	03/14/23	1300	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
A1BPSW0001_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
DUP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company: HA	Date/Time: 3-21-23/1300	Received by:	EC	Date/Time: 3/21/23 1320
Relinquished by:	Company: HE	Date/Time: 3/21/23 1710	Received by:	IK	Date/Time: 3/21/23 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 1.6/1.6 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/19/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212690.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-132015-3
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/6/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Wastewater, Solid, Oil/waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230314 (570-132015-1)	3/14/23	13:00 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	03/21/23 15:00	EC	[signature]	3-25-23 0910	EETK
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.9c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129015-2

Login Number: 132015
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-129015-2

Login Number: 132015
List Number: 4
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 03/25/23 10:43 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-132015-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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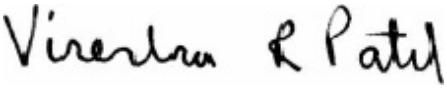
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-4

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132015-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132015-4

Comments
No additional comments.

Receipt
The sample was received on 3/21/2023 5:10 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.9º C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 607422
The matrix spike (MS) recoveries for Gross Alpha and Gross Beta were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits. (570-131940-R-1-H MS) and (570-131940-R-1-I MSBT)

Method 900.0: Gross Alpha and Gross Beta batch 607422
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: EPSW001IE01_03142023 (570-132015-1), (570-131940-R-1-G) and (570-131940-R-1-J DU). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 607422
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_03142023 (570-132015-1), (LCS 160-607422/2-A), (LCSB 160-607422/3-A), (MB 160-607422/1-A), (570-131940-R-1-G), (570-131940-R-1-J DU), (570-131940-R-1-H MS) and (570-131940-R-1-I MSBT)

Method 900.0: Gross Alpha and Gross Beta batch 607422
The sample duplicate (DUP) precision for Gross Beta was outside control limits. Sample matrix interference is suspected. Sample was prepped at a dilution due to high residual mass
(570-131940-R-1-J DU)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231

Job ID: 570-132015-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_03142023 (570-132015-1), (570-131073-AT-1-B) and (570-131073-AT-1-C DU)

Method 901.1: Gamma Prep Batch 160-605774
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPSW001IE01_03142023 (570-132015-1) and (570-132015-K-1-E DU)

Method 906.0: Tritium 607890
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are decay corrected to sample date and time as the Activity Reference Date. EPSW001IE01_03142023 (570-132015-1), (LCS 160-607890/2-A), (MB 160-607890/1-A), (570-131938-I-1-A), (570-131938-I-1-B DU), (570-132136-Q-1-A) and (570-132136-Q-1-B MS)

Job ID: 570-132015-4 (Continued)

Laboratory: Eurofins Calscience (Continued)

Methods A-01-R, U-02-RC: Isotopic Uranium batch 607182
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_03142023 (570-132015-1), (LCS 160-607182/2-A), (MB 160-607182/1-A), (570-131945-N-1-E) and (570-131945-N-1-F DU)

Method A-01-R: Isotopic Uranium batch 607366
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPSW001IE01_03142023 (570-132015-1), (LCS 160-607366/2-A), (MB 160-607366/1-A), (570-132013-K-1-E) and (570-132013-K-1-F DU)

Method ExtChrom:

Method ExtChrom: Uranium Prep Batch 160-607366:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPSW001IE01_03142023 (570-132015-1).

Method LSC_Dist_Susp:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_03142023
Lab Sample ID: 570-132015-1

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPSW001IE01_03142023
Date Collected: 03/14/23 13:00
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132015-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	9.63	G	4.21	4.35	3.00	5.27	pCi/L	04/14/23 10:37	04/21/23 18:25	1
Gross Beta	13.0		2.00	2.38	4.00	1.77	pCi/L	04/14/23 10:37	04/21/23 18:25	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPSW001IE01_03142023
Date Collected: 03/14/23 13:00
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132015-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.34	U	1.17	1.18	3.00	1.80	pCi/L	04/14/23 10:37	04/21/23 18:23	1
Gross Beta	**1.77**		0.691	0.713	4.00	0.938	pCi/L	04/14/23 10:37	04/21/23 18:23	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-4

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPSW001IE01_03142023
Date Collected: 03/14/23 13:00
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132015-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.84	U	5.13	5.14	20.0	6.25	pCi/L	03/28/23 16:33	04/12/23 14:27	1
Potassium-40	-49.0	U	101	101		129	pCi/L	03/28/23 16:33	04/12/23 14:27	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPSW001IE01_03142023
Date Collected: 03/14/23 13:00
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132015-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	1.40	U	6.96	6.96	20.0	7.91	pCi/L	03/31/23 15:10	04/13/23 12:58	1
Potassium-40	40.1	U	83.7	83.8		106	pCi/L	03/31/23 15:10	04/13/23 12:58	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPSW001IE01_03142023
Date Collected: 03/14/23 13:00
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132015-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-202	U	204	205	500	414	pCi/L	04/18/23 11:12	04/19/23 08:58	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPSW001IE01_03142023
Date Collected: 03/14/23 13:00
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132015-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	2.24		0.724	0.738	1.00	0.391	pCi/L	04/12/23 15:01	04/17/23 22:46	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPSW001IE01_03142023
Date Collected: 03/14/23 13:00
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132015-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.760		0.383	0.386	1.00	0.308	pCi/L	04/13/23 16:15	04/20/23 11:24	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**U-232 (30-110)**
LCS 160-607182/2-A	Lab Control Sample	76.8
LCS 160-607366/2-A	Lab Control Sample	78.6
MB 160-607182/1-A	Method Blank	81.7
MB 160-607366/1-A	Method Blank	81.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-607422/1-A
Matrix: Water
Analysis Batch: 608478

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607422

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	-0.2952	U	0.323	0.325	3.00	0.811	pCi/L	04/14/23 10:37	04/21/23 10:02	1
Gross Beta	-0.7584	U	0.415	0.422	4.00	0.896	pCi/L	04/14/23 10:37	04/21/23 10:02	1

Lab Sample ID: LCS 160-607422/2-A
Matrix: Water
Analysis Batch: 608478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607422

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	60.65		8.70	3.00	2.71	pCi/L	120	75 - 125

Lab Sample ID: LCSB 160-607422/3-A
Matrix: Water
Analysis Batch: 608478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607422

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.4	74.69		8.01	4.00	1.10	pCi/L	102	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-605283/1-A
Matrix: Water
Analysis Batch: 607160

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605283

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.793	U	6.67	6.68	20.0	7.49	pCi/L	03/28/23 16:33	04/12/23 04:01	1
Potassium-40	27.15	U	82.6	82.7		106	pCi/L	03/28/23 16:33	04/12/23 04:01	1

Lab Sample ID: LCS 160-605283/2-A
Matrix: Water
Analysis Batch: 607188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605283

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	139700		16600		562	pCi/L	103	75 - 125
Cesium-137	40800	39690		4740	20.0	156	pCi/L	97	75 - 125
Cobalt-60	17700	17220		2060		78.1	pCi/L	97	75 - 125

Lab Sample ID: MB 160-605774/1-A
Matrix: Water
Analysis Batch: 607321

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605774

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-7.022	U	12.9	12.9	20.0	15.4	pCi/L	03/31/23 15:10	04/13/23 14:40	1
Potassium-40	-5.858	U	119	119		163	pCi/L	03/31/23 15:10	04/13/23 14:40	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-605774/2-A
Matrix: Water
Analysis Batch: 607326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605774

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	154200		18300		291	pCi/L	114	75 - 125
Cesium-137	40800	42460		5060	20.0	81.7	pCi/L	104	75 - 125
Cobalt-60	17700	18450		2200		56.4	pCi/L	104	75 - 125

Lab Sample ID: 570-132015-1 DU
Matrix: Water
Analysis Batch: 607325

Client Sample ID: EPSW001IE01_03142023
Prep Type: Dissolved
Prep Batch: 605774

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Cesium-137	1.40	U	-2.006	U	7.45	20.0	8.69	pCi/L	0.24	1
Potassium-40	40.1	U	39.77	U	88.5		89.2	pCi/L	0	1

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-607890/1-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607890

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-102.7	U	224	224	500	433	pCi/L	04/18/23 11:12	04/19/23 06:41	1

Lab Sample ID: LCS 160-607890/2-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607890

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Tritium	2090	1604		396	500	420	pCi/L	77	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-607182/1-A
Matrix: Water
Analysis Batch: 607712

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607182

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.08287	U	0.138	0.138	1.00	0.229	pCi/L	04/12/23 15:01	04/17/23 22:47	1

Lab Sample ID: LCS 160-607182/2-A
Matrix: Water
Analysis Batch: 607726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607182

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Uranium-234	12.7	14.02		1.67	1.00	0.196	pCi/L	110	75 - 125
Uranium-238	13.0	15.41		1.79	1.00	0.168	pCi/L	118	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-607182/2-A
Matrix: Water
Analysis Batch: 607726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607182

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*76.8*		*30 - 110*

Lab Sample ID: MB 160-607366/1-A
Matrix: Water
Analysis Batch: 608244

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607366

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.04490	U	0.1166	0.1166	1.00	0.179	pCi/L	04/13/23 16:15	04/20/23 11:24	1

Lab Sample ID: LCS 160-607366/2-A
Matrix: Water
Analysis Batch: 608246

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607366

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.15		1.59	1.00	0.240	pCi/L	103	75 - 125		
Uranium-238			13.0	13.65		1.63	1.00	0.159	pCi/L	105	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*78.6*		*30 - 110*

Rad

Filtration Batch: 605051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_03142023	Dissolved	Water	Filtration	
570-132015-1	EPSW001IE01_03142023	Dissolved	Water	Filtration	
570-132015-1 DU	EPSW001IE01_03142023	Dissolved	Water	Filtration	

Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_03142023	Total/NA	Water	Fill_Geo-0	
MB 160-605283/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605283/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_03142023	Dissolved	Water	Fill_Geo-0	605051
MB 160-605774/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605774/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	
570-132015-1 DU	EPSW001IE01_03142023	Dissolved	Water	Fill_Geo-0	605051

Prep Batch: 607182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_03142023	Total/NA	Water	ExtChrom	
MB 160-607182/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-607182/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 607366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_03142023	Dissolved	Water	ExtChrom	605051
MB 160-607366/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-607366/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 607422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_03142023	Dissolved	Water	Evaporation	605051
570-132015-1	EPSW001IE01_03142023	Total/NA	Water	Evaporation	
MB 160-607422/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-607422/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-607422/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 607890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132015-1	EPSW001IE01_03142023	Total/NA	Water	LSC_Dist_Susp	
MB 160-607890/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-607890/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW001IE01_03142023
Lab Sample ID: 570-132015-1
Date Collected: 03/14/23 13:00
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			3800 mL	3800 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	Evaporation			200.00 mL	1.0 g	607422	04/14/23 10:37	MST	EET SL
Dissolved	Analysis	900.0		1			608478	04/21/23 18:23	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	Evaporation			100.005 mL	1.0 g	607422	04/14/23 10:37	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	608478	04/21/23 18:25	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	605774	03/31/23 15:10	AJP	EET SL
Dissolved	Analysis	901.1		1			607329	04/13/23 12:58	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Total/NA	Analysis	901.1		1			607161	04/12/23 14:27	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	LSC_Dist_Susp			99.87 mL	1.0 g	607890	04/18/23 11:12	ZR	EET SL
Total/NA	Analysis	906.0		1			608161	04/19/23 08:58	REV	EET SL
	Instrument ID: LSC3180									
Dissolved	Filtration	Filtration			1000 mL	1000 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	ExtChrom			255.49 mL	1.0 mL	607366	04/13/23 16:15	SEH	EET SL
Dissolved	Analysis	A-01-R		1			608247	04/20/23 11:24	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			500.21 mL	1.0 mL	607182	04/12/23 15:01	SRE	EET SL
Total/NA	Analysis	A-01-R		1			607721	04/17/23 22:46	FLC	EET SL
	Instrument ID: ALPHAVISION									

Laboratory References:
EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132015-4
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-4

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132015-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132015-1	EPSW001IE01_03142023	Water	03/14/23 13:00	03/21/23 17:10

Loc: 570
132015

570-132015 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES | | RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	____ of ____ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-010-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☑ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Gross Alpha & Beta, total dissolved (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	Gross Alpha & Beta, total recoverable (E900.0); Uranium (HASL-300 U Mod), K-40, CS-137 (E901.0 or E901.1)	SO4 (E300)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Dissolved)	Method 200.8: As, Cd, Cu, Pb, Se Method 200.7: Fe, Mn, Zn (Total Recoverable)	Hg (Total Recoverable) Method 1631E	Hg (Total Dissolved) Method 1631E	Tritium (E906.0)				Sample Specific Notes:
--	--	--	--	--	--			2-1L Amber	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Glass w HCl (double bagged)	1-250mL Glass (double bagged)	1-250mL Amber				Field Staff Notes: Lab may substitute 250mL Poly for 500mL for metals. Only need to fill half of 500mL. Must fill TSS to the top.
EPSW001IE01_ 03142023	03/14/23	1300	G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
A1BPSW0001_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
DUP_			G	WM	11	Y	N	x	x	x	x	x	x	x	x	x	x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____								1	1	1	1	1	1	4	2	1	1				

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd:____ Corr'd:____ Therm ID No.:____

Relinquished by:	Company: HA	Date/Time: 3-21-23/1300	Received by:	EC	Date/Time: 3/21/23 1320
Relinquished by:	Company: EC	Date/Time: 3/21/23 1710	Received by:	IK	Date/Time: 3/21/23 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

1.9/1.9 1.6/1.6 SCH

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-211951.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132015-4
Address: 13715 Rider Trail North,	Due Date Requested: 4/21/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha/Beta- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
EPSW001IE01_20230314 (570-132015-1)	3/14/23	13:00 Pacific		Water			X	X	X	X	X	X	X	4	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1		03/22/23 12:36				
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/24/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212085.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132015-4
Address: 13715 Rider Trail North,	Due Date Requested: 4/21/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPSW001IE01_20230314 (570-132015-1)	3/14/23	13:00 Pacific		Water			X	1	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	FED EX	03/23/23 13:00	EC	FED EX		
2	FED EX			Sierra Worthington	MAR 24 2023 0910	ETAS
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132015-4

Login Number: 132015
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132015-4

Login Number: 132015
List Number: 2
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 03/23/23 12:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	Refer to Job Narrative for details.
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/19/2023 9:44:58 AM Revision 2

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-132016-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Eurofins Calscience

Job Notes

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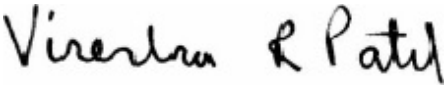
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 2

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132016-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132016-1

Job ID: 570-132016-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132016-1

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 3/23/2023. The report (revision 2) is being revised due to: The case narrative was updated to include a comment for EPA Method 314.0. The Perchlorate detection looks suspect, but was not confrimed with a spike prior to release..

Report revision history
Revision 1 - 4/3/2023 - Reason - The case narrative was updated to include a comment for EPA Method 314.0. The Perchlorate detection looks suspect, but was not confrimed with a spike prior to release..

Receipt
The samples were received on 3/21/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.8º C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132016-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW002IE01_20230321 — Lab Sample ID: 570-132016-1

No Detections.

Client Sample ID: EPSW002IE02_20230321 — Lab Sample ID: 570-132016-2

No Detections.

Client Sample ID: EPSW002BG01_20230321 — Lab Sample ID: 570-132016-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perchlorate	35		2.0	0.91	ug/L	1		314.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - u N4

Job ID: 570-123019-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPSW002IE01_20230321
Date Collected: 03/21/23 10:45
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132016-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	u D		3.0	0.61	8g/L			02/33/32 1E:05	1

Client Sample ID: EPSW002IE02_20230321
Date Collected: 03/21/23 11:00
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132016-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	u D		3.0	0.61	8g/L			02/33/32 1E:35	1

Client Sample ID: EPSW002BG01_20230321
Date Collected: 03/21/23 11:30
Date Received: 03/21/23 17:10

Lab Sample ID: 570-132016-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**35**		3.0	0.61	8g/L			02/33/32 1E:E9	1

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-313743/7
Matrix: Water
Analysis Batch: 313743

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/22/23 13:02	1

Lab Sample ID: LCS 570-313743/8
Matrix: Water
Analysis Batch: 313743

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	25.2		ug/L		101	85 - 115		

Lab Sample ID: LCSD 570-313743/9
Matrix: Water
Analysis Batch: 313743

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.4		ug/L		97	85 - 115	3	15

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132016-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

HPLC/IC

Analysis Batch: 313743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132016-1	EPSW002IE01_20230321	Total/NA	Water	314.0	
570-132016-2	EPSW002IE02_20230321	Total/NA	Water	314.0	
570-132016-3	EPSW002BG01_20230321	Total/NA	Water	314.0	
MB 570-313743/7	Method Blank	Total/NA	Water	314.0	
LCS 570-313743/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-313743/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132016-1
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW002IE01_20230321
Lab Sample ID: 570-132016-1
Date Collected: 03/21/23 10:45
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		1	4 mL	4 mL	313743	03/22/23 14:05	PS	EET CAL 4
	Instrument ID: IC8									

Client Sample ID: EPSW002IE02_20230321
Lab Sample ID: 570-132016-2
Date Collected: 03/21/23 11:00
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		1	4 mL	4 mL	313743	03/22/23 14:25	PS	EET CAL 4
	Instrument ID: IC8									

Client Sample ID: EPSW002BG01_20230321
Lab Sample ID: 570-132016-3
Date Collected: 03/21/23 11:30
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		1	4 mL	4 mL	313743	03/22/23 14:46	PS	EET CAL 4
	Instrument ID: IC8									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
j ro/ectSBite: goeinF BBLRIBMA and gs j - f Np

Job ID: 570-12901P-1

Laboratory: Eurofins Calscience

All accreditationzSertiZcationz held by thiz laboratory are lizted. f ot all accreditationzSertiZcationz are a88licable to thiz re8ort.

Authority	Program	Identification Number	Expiration Date
Ari3ona	Btate	A60u20	11-1P-92
CaliZornia	Roz AnFelez CoQnty Banitation Diztrictz	10104	07-21-92
CaliZornia	BCAv s D RAj	17RA0414	11-20-92
CaliZornia	Btate	20u9	07-21-9O
f eEada	Btate	CA00111	0u-01-92
UreFon	f NRAj	O175	09-09-9O
mBDA	mB Lederal j roFraWz	j 220-99-00054	05-9O-92
p azhinFton	Btate	C41P-1u	10-11-92

NQroZnz Calzcience

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132016-1

Method	Method Description	Protocol	Laboratory
314.0	Perchlorate (IC)	EPA	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132016-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132016-1	EPSW002IE01_20230321	Water	03/21/23 10:45	03/21/23 17:10
570-132016-2	EPSW002IE02_20230321	Water	03/21/23 11:00	03/21/23 17:10
570-132016-3	EPSW002BG01_20230321	Water	03/21/23 11:30	03/21/23 17:10

Virendra Patel

From: Rapp, Kerry <KRapp@haleyaldrich.com>
Sent: Monday, March 27, 2023 4:13 PM
To: Virendra Patel
Cc: Miller, Katherine; Broadwell, Kirkland
Subject: SSFL

EXTERNAL EMAIL*

Hi Virendra,

For SDG 570-132016-1, Samples logged as EPSW0021E01_20230321, EPSW0021E02_20230321 they should be EPSW002IE01_20230321, EPSW002IE02_20230321.

Thanks,
Kerry

Kerry L. Rapp
Technical Specialist

Haley & Aldrich, Inc.
299 Cherry Hill Road | Suite 303
Parsippany, New Jersey 07054

T: (973) 658.3930
C: (973) 294-0580
www.haleyaldrich.com

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Loc: 570
132016

570-132016 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins Calscience

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 1 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	▫ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No.:
H&A P O #	▫ 1 day			

	Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Perchlorate (E314.0)		
									1-500mL Poly		Field Staff Notes:
1	EPSW002IE01_20230321	3/21/23	1045	G	WM	1	N	Y	x		rush TAT
2	EPSW002IE02_20230321	3/21/23	1100	G	WM	1	N	N	x		rush TAT
3	EPSW002BG01_20230321	3/21/23	1130	G	WM	1	N	N	x		rush TAT
											Field Readings
											Meter Serial #
											Time of Readings
											DO (mg/L)
											pH
											Temp (°C/°F)
											TRC (mg/L)
											Checked by:
											Date/Time:
	Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____								1		

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ▫ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____	
Relinquished by: C Johnson	Company: JHA	Date/Time: 3-21-23 1300	Received by: EC	Date/Time: 3/21/23 1320
Relinquished by:	Company: EC	Date/Time: 3/21/23 1710	Received by:	Date/Time: 3/21/23 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.8/1.8 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/19/2023 (Rev. 2)

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132016-1

Login Number: 132016
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 5/14/2023 8:55:46 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP - NEW

JOB NUMBER

570-132016-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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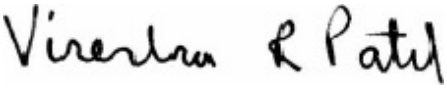
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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5/14/2023 8:55:46 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132016-3

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BU	Analyzed out of holding time

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132016-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132016-3

Comments
No additional comments.

Receipt
The samples were received on 3/21/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.8º C.

Receipt Exceptions

The Field Sampler was not listed on the Chain of Custody.

HPLC/IC
Method 300.0: The following sample was prepared outside of preparation holding time due to analysis logged in past hold time: EPSW002BG01_20230321 (570-132016-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132016-3

Client Sample ID: EPSW002BG01_20230321

Lab Sample ID: 570-132016-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	280	BU	5.0	1.2	mg/L	5		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Job ID: 570-132016-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPSW002BG01_20230321
Lab Sample ID: 570-132016-3
Date Collected: 03/21/23 11:30
Matrix: Water
Date Received: 03/21/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	280	BU	5.0	1.2	mg/L			05/12/23 16:09	5

Client: Haley & Aldrich, Inc.
Job ID: 570-132016-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-328459/48
Matrix: Water
Analysis Batch: 328459

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			05/12/23 14:38	1

Lab Sample ID: LCS 570-328459/49
Matrix: Water
Analysis Batch: 328459

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			50.0	48.7		mg/L		97	90 - 110		

Lab Sample ID: LCSD 570-328459/50
Matrix: Water
Analysis Batch: 328459

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate			50.0	48.6		mg/L		97	90 - 110	0	15

QC Association Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132016-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

HPLC/IC

Analysis Batch: 328459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132016-3	EPSW002BG01_20230321	Total/NA	Water	300.0	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132016-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Client Sample ID: EPSW002BG01_20230321
Lab Sample ID: 570-132016-3
Date Collected: 03/21/23 11:30
Matrix: Water
Date Received: 03/21/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	4 mL	4 mL	328459	05/12/23 16:09	UIP1	EET CAL 4
	Instrument ID: IC9									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132016-3
Project/Site: Boeing SSFL ISRA and BMP - NEW

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Kansas	NELAP	E-10420	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132016-3

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP - NEW

Job ID: 570-132016-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132016-3	EPSW002BG01_20230321	Water	03/21/23 11:30	03/21/23 17:10

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Tuesday, May 9, 2023 7:45 PM
To: Virendra Patel
Cc: Dominick, Mark
Subject: Rush Requested: Sulfate

EXTERNAL EMAIL*

Virendra,

Do you have any volume remaining on these samples? Could you run sulfate on a rush TAT? I understand these are past holding time.

sys_loc_code	sys_sample_code	sample_date	field_sdg
EPSBPP	EPSBPP_20230331	3/31/2023	5701333451
EPSW002BG01	EPSW002BG01_20230321	3/21/2023	5701320161
EPSW002BG01	EPSW002BG01_20230330	3/30/2023	5701333451
EPSW002IE01	EPSW002IE01_20230330	3/30/2023	5701333451
EPSW002IE02	EPSW002IE02_20230330	3/30/2023	5701333451

Katherine

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

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Loc: 570
132016

570-132016 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins Calscience

Regulatory Program: ▫ DW ▫ NPDES ▫ RCRA ▫ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-21-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	___1___ of ___1___ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	▪ CALENDAR DAYS ▫ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	▫ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	▫ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	▪ 2 days			Job / SDG No.:
H&A P O #	▫ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Perchlorate (E314.0)														Field Staff Notes:
								1-500mL Poly														
1 EPSW002IE01_20230321	3/21/23	1045	G	WM	1	N	Y	x														rush TAT
2 EPSW002IE02_20230321	3/21/23	1100	G	WM	1	N	N	x														rush TAT
3 EPSW002BG01_20230321	3/21/23	1130	G	WM	1	N	N	x														rush TAT
																						Field Readings
																						Meter Serial #
																						Time of Readings
																						DO (mg/L)
																						pH
																						Temp (°C/°F)
																						TRC (mg/L)
																						Checked by:
																						Date/Time:
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other _____								1														

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
▫ Non-Hazard ▫ Flammable ▫ Skin Irritant ▫ Poison B ▫ Unknown

Sample Disposal
▫ Return to Client ▫ Disposal by Lab ▪ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ▫ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____	
Relinquished by: C Johnson	Company: JHA	Date/Time: 3-21-23 1300	Received by: EC	Date/Time: 3/21/23 1320
Relinquished by:	Company: EC	Date/Time: 3/21/23 1710	Received by:	Date/Time: 3/21/23 1710
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.8/1.8 SCI

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132016-3

Login Number: 132016
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132140-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

Job Notes

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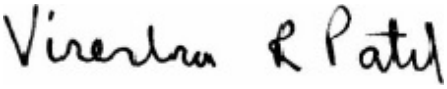

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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Qualifiers

GC/MS mV O

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Sep i mV O

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits
LR	LCS/LCSD recovery below method control limits

HPLC/IC

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier DesAriction
BU	Sample was prepped beyond the specified holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)

General Chep istry

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)

Glossary (Continued)

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132140-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132140-1

Comments
No additional comments.

Receipt
The samples were received on 3/22/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9º C, 2.1º C, 2.3º C and 2.8º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-313824. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: BGBMP0003_20230322 (570-132140-1). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-314233. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 624.1: The preservative used in the sample containers provided is not compatible with the Method 624 analytes requested. The following sample was received preserved with hydrochloric acid: TB_20230322-2 (570-132140-2). The requested target analyte list contains 2-Chloroethyl vinyl ether and/or Acrolein, which are acid-labile compounds that degrade in an acidic medium.

Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-313870. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The laboratory control sample (LCS) for preparation batch 570-314349 and analytical batch 570-314965 recovered outside acceptance limits for 1,2,4-Trichlorobenzene and Hexachlorobenzene. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-315862 recovered above the upper control limit for Benzidine. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: BGBMP0003_20230322 (570-132140-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 300.0: Due to the high concentration of Nitrate as N, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-314005 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 570-132140-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-314378 and analytical batch 570-314523 were outside control limits for Aluminum. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: BGBMP0003_20230322 (570-132140-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: BGBMP0003_20230322 (570-132140-1), (570-132140-AF-1 MS) and (570-132140-AF-1 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2540D: The sample duplicate (DUP) precision for analytical batch 570-315496 was outside control limits. Sample non-homogeneity is suspected.

Method Kelada 01: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 570-315871 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method SM 2540F: Insufficient sample volume was available to perform a sample duplicate (DUP) associated with analytical batch 570-314206.

Method SM 5210B: The following sample were diluted due to the nature of the sample matrix: BGBMP0003_20230322 (570-132140-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-315295.
Method: 1664.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-315947. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 8015B_DRO.

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-314349. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

Job ID: 570-132140-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Client Sample ID: BGBMP0003_20230322 — Lab Sample ID: 570-132140-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diethyl phthalate	0.44	J,DX	2.0	0.18	ug/L	1		625.1 SIM	Total/NA
Chloride	2.6		1.0	0.36	mg/L	1		300.0	Total/NA
Fluoride	0.075	J,DX	0.10	0.046	mg/L	1		300.0	Total/NA
Nitrate as N	0.030	J,DX	0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate	2.9		1.0	0.24	mg/L	1		300.0	Total/NA
Nitrate Nitrite as N	0.030	J,DX	0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	50	J,DX	500	3.5	ug/L	1		200.7 Rev 4.4	Total Recoverable
Boron	45	J,DX BU	500	3.5	ug/L	1		200.7 Rev 4.4	Dissolved
Aluminum	180		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	0.55	J,DX	1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	19		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	0.45	J,DX	2.0	0.14	ug/L	1		200.8	Total Recoverable
Cobalt	0.20	J,DX	1.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	1.4	J,DX	2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	200		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	9.5		1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	1.8	J,DX	2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	0.19	J,DX	1.0	0.12	ug/L	1		200.8	Total Recoverable
Selenium	0.62	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Aluminum	75	BU	15	8.6	ug/L	1		200.8	Dissolved
Silver	0.48	J,DX BU	1.0	0.23	ug/L	1		200.8	Dissolved
Arsenic	0.54	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	17	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.41	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Cobalt	0.22	J,DX BU	1.0	0.14	ug/L	1		200.8	Dissolved
Copper	1.3	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	86	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	5.3	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Lead	0.14	J,DX BU	1.0	0.12	ug/L	1		200.8	Dissolved
Antimony	3.4	BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	0.84	J,DX BU	2.0	0.52	ug/L	1		200.8	Dissolved
Ammonia	0.032	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	2.4		0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	94		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	110		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	3.1		1.0	0.83	mg/L	1		SM 2540D	Total/NA
Settleable Solids	0.10		0.10	0.10	mL/L	1		SM 2540F	Total/NA
Carbon, Total Organic	10		4.0	2.1	mg/L	8		SM 5310D	Total/NA
MBAS	0.063	J,DX	0.20	0.050	mg/L	1		SM 5540C	Total/NA

Client Sample ID: TB_20230322-2 — Lab Sample ID: 570-132140-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Client Sample ID: TB_20230322 **Lab Sample ID: 570-132140-4**

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/23/23 00:17	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/23/23 00:17	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/23/23 00:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/23/23 00:17	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/23/23 00:17	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/23/23 00:17	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/23/23 00:17	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/23/23 00:17	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/23/23 00:17	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/23/23 00:17	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/23/23 00:17	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/23/23 00:17	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/23/23 00:17	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/23/23 00:17	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/23/23 00:17	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 00:17	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/23/23 00:17	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/23/23 00:17	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/23/23 00:17	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 00:17	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/23/23 00:17	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/23/23 00:17	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/23/23 00:17	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/23/23 00:17	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/23/23 00:17	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/23/23 00:17	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/23/23 00:17	1
2-Hexanone	ND		5.0	2.2	ug/L			03/23/23 00:17	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/23/23 00:17	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/23/23 00:17	1
Acetone	ND		20	16	ug/L			03/23/23 00:17	1
Acrolein	ND		5.0	4.6	ug/L			03/23/23 00:17	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/23/23 00:17	1
Benzene	ND		0.50	0.28	ug/L			03/23/23 00:17	1
Bromobenzene	ND		0.50	0.23	ug/L			03/23/23 00:17	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/23/23 00:17	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/23/23 00:17	1
Bromoform	ND		1.0	0.25	ug/L			03/23/23 00:17	1
Bromomethane	ND		0.50	0.22	ug/L			03/23/23 00:17	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/23/23 00:17	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/23/23 00:17	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/23/23 00:17	1
Chloroethane	ND		1.0	0.29	ug/L			03/23/23 00:17	1
Chloroform	ND		0.50	0.19	ug/L			03/23/23 00:17	1
Chloromethane	ND		0.50	0.30	ug/L			03/23/23 00:17	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/23/23 00:17	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/23/23 00:17	1
Cyclohexane	ND		2.0	0.79	ug/L			03/23/23 00:17	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/23/23 00:17	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.50	0.19	ug/L			03/23/23 00:17	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/23/23 00:17	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/23/23 00:17	1
Ethanol	ND		100	65	ug/L			03/23/23 00:17	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/23/23 00:17	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/23/23 00:17	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/23/23 00:17	1
Isopropanol	ND		250	120	ug/L			03/23/23 00:17	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/23/23 00:17	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/23/23 00:17	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/23/23 00:17	1
Naphthalene	ND		1.0	0.33	ug/L			03/23/23 00:17	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/23/23 00:17	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/23/23 00:17	1
o-Xylene	ND		0.50	0.15	ug/L			03/23/23 00:17	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/23/23 00:17	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/23/23 00:17	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/23/23 00:17	1
Styrene	ND		0.50	0.19	ug/L			03/23/23 00:17	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/23/23 00:17	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/23/23 00:17	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/23/23 00:17	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/23/23 00:17	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/23/23 00:17	1
Toluene	ND		0.50	0.23	ug/L			03/23/23 00:17	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/23/23 00:17	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/23/23 00:17	1
Trichloroethene	ND		0.50	0.17	ug/L			03/23/23 00:17	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/23/23 00:17	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/23/23 00:17	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/23/23 00:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*76 - 146*		*603203200 66/1:*	*1*
4-Bromofluorobenzene (Surr)	*99*		*76 - 146*		*603203200 66/1:*	*1*
Dibromofluoromethane (Surr)	*84*		*76 - 146*		*603203200 66/1:*	*1*
Toluene-d8 (Surr)	*162*		*76 - 146*		*603203200 66/1:*	*1*

Client Sample ID: TB_20230322-2
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/23/23 19:10	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/23/23 19:10	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/23/23 19:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/23/23 19:10	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/23/23 19:10	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/23/23 19:10	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/23/23 19:10	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/23/23 19:10	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB_20230322-2
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/23/23 19:10	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/23/23 19:10	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/23/23 19:10	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/23/23 19:10	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/23/23 19:10	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/23/23 19:10	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/23/23 19:10	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 19:10	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/23/23 19:10	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/23/23 19:10	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/23/23 19:10	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 19:10	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/23/23 19:10	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/23/23 19:10	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/23/23 19:10	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/23/23 19:10	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/23/23 19:10	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/23/23 19:10	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/23/23 19:10	1
2-Hexanone	ND		5.0	2.2	ug/L			03/23/23 19:10	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/23/23 19:10	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/23/23 19:10	1
Acetone	ND		20	16	ug/L			03/23/23 19:10	1
Acrolein	ND		5.0	4.6	ug/L			03/23/23 19:10	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/23/23 19:10	1
Benzene	ND		0.50	0.28	ug/L			03/23/23 19:10	1
Bromobenzene	ND		0.50	0.23	ug/L			03/23/23 19:10	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/23/23 19:10	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/23/23 19:10	1
Bromoform	ND		1.0	0.25	ug/L			03/23/23 19:10	1
Bromomethane	ND		0.50	0.22	ug/L			03/23/23 19:10	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/23/23 19:10	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/23/23 19:10	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/23/23 19:10	1
Chloroethane	ND		1.0	0.29	ug/L			03/23/23 19:10	1
Chloroform	ND		0.50	0.19	ug/L			03/23/23 19:10	1
Chloromethane	ND		0.50	0.30	ug/L			03/23/23 19:10	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/23/23 19:10	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/23/23 19:10	1
Cyclohexane	ND		2.0	0.79	ug/L			03/23/23 19:10	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/23/23 19:10	1
Dibromomethane	ND		0.50	0.19	ug/L			03/23/23 19:10	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/23/23 19:10	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/23/23 19:10	1
Ethanol	ND		100	65	ug/L			03/23/23 19:10	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/23/23 19:10	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/23/23 19:10	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/23/23 19:10	1
Isopropanol	ND		250	120	ug/L			03/23/23 19:10	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB_20230322-2
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		0.50	0.16	ug/L			03/23/23 19:10	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/23/23 19:10	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/23/23 19:10	1
Naphthalene	ND		1.0	0.33	ug/L			03/23/23 19:10	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/23/23 19:10	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/23/23 19:10	1
o-Xylene	ND		0.50	0.15	ug/L			03/23/23 19:10	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/23/23 19:10	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/23/23 19:10	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/23/23 19:10	1
Styrene	ND		0.50	0.19	ug/L			03/23/23 19:10	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/23/23 19:10	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/23/23 19:10	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/23/23 19:10	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/23/23 19:10	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/23/23 19:10	1
Toluene	ND		0.50	0.23	ug/L			03/23/23 19:10	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/23/23 19:10	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/23/23 19:10	1
Trichloroethene	ND		0.50	0.17	ug/L			03/23/23 19:10	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/23/23 19:10	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/23/23 19:10	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/23/23 19:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*76 - 146*		*603203203 19/16*	*1*
4-Bromofluorobenzene (Surr)	*99*		*76 - 146*		*603203203 19/16*	*1*
Dibromofluoromethane (Surr)	*8:*		*76 - 146*		*603203203 19/16*	*1*
Toluene-d8 (Surr)	*161*		*76 - 146*		*603203203 19/16*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/23/23 01:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*120*		*7: - 100*		*603203:20 61/16*	*1*

Client Sample ID: TB_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/23/23 00:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*161*		*7: - 100*		*603203:20 66/44*	*1*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND	LR	0.20	0.13	ug/L		03/24/23 05:15	03/31/23 01:05	1
1,2-Dichlorobenzene	ND		0.20	0.12	ug/L		03/24/23 05:15	03/31/23 01:05	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		03/24/23 05:15	03/31/23 01:05	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		03/24/23 05:15	03/31/23 01:05	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		03/24/23 05:15	03/31/23 01:05	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/24/23 05:15	03/31/23 01:05	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		03/24/23 05:15	03/31/23 01:05	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		03/24/23 05:15	03/31/23 01:05	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		03/24/23 05:15	03/31/23 01:05	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/24/23 05:15	03/31/23 01:05	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		03/24/23 05:15	03/31/23 01:05	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		03/24/23 05:15	03/31/23 01:05	1
2-Chlorophenol	ND		0.20	0.096	ug/L		03/24/23 05:15	03/31/23 01:05	1
2-Nitrophenol	ND		5.0	3.5	ug/L		03/24/23 05:15	03/31/23 01:05	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		03/24/23 05:15	03/31/23 01:05	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.6	ug/L		03/24/23 05:15	03/31/23 01:05	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		03/24/23 05:15	03/31/23 01:05	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		03/24/23 05:15	03/31/23 01:05	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		03/24/23 05:15	03/31/23 01:05	1
4-Nitrophenol	ND		5.0	3.4	ug/L		03/24/23 05:15	03/31/23 01:05	1
Acenaphthene	ND		0.20	0.099	ug/L		03/24/23 05:15	03/31/23 01:05	1
Acenaphthylene	ND		0.20	0.13	ug/L		03/24/23 05:15	03/31/23 01:05	1
Anthracene	ND		0.20	0.084	ug/L		03/24/23 05:15	03/31/23 01:05	1
Benzidine	ND		5.0	2.7	ug/L		03/24/23 05:15	03/31/23 01:05	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		03/24/23 05:15	03/31/23 01:05	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		03/24/23 05:15	03/31/23 01:05	1
Benzo[b]fluoranthene	ND		0.20	0.11	ug/L		03/24/23 05:15	03/31/23 01:05	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		03/24/23 05:15	03/31/23 01:05	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		03/24/23 05:15	03/31/23 01:05	1
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		03/24/23 05:15	03/31/23 01:05	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		03/24/23 05:15	03/31/23 01:05	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		03/24/23 05:15	03/31/23 01:05	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/24/23 05:15	03/31/23 01:05	1
Butyl benzyl phthalate	ND		1.0	0.68	ug/L		03/24/23 05:15	03/31/23 01:05	1
Chrysene	ND		0.20	0.11	ug/L		03/24/23 05:15	03/31/23 01:05	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		03/24/23 05:15	03/31/23 01:05	1
Diethyl phthalate	**0.44**	**J,DX**	2.0	0.18	ug/L		03/24/23 05:15	03/31/23 01:05	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		03/24/23 05:15	03/31/23 01:05	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		03/24/23 05:15	03/31/23 01:05	1
Di-n-octyl phthalate	ND	LQ	3.0	0.54	ug/L		03/24/23 05:15	03/31/23 01:05	1
Fluoranthene	ND		0.20	0.10	ug/L		03/24/23 05:15	03/31/23 01:05	1
Fluorene	ND		0.20	0.095	ug/L		03/24/23 05:15	03/31/23 01:05	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		03/24/23 05:15	03/31/23 01:05	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		03/24/23 05:15	03/31/23 01:05	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		03/24/23 05:15	03/31/23 01:05	1
Hexachloroethane	ND	LR	0.20	0.13	ug/L		03/24/23 05:15	03/31/23 01:05	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		03/24/23 05:15	03/31/23 01:05	1
Isophorone	ND		0.20	0.099	ug/L		03/24/23 05:15	03/31/23 01:05	1
Naphthalene	ND		0.20	0.11	ug/L		03/24/23 05:15	03/31/23 01:05	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	ND		0.20	0.14	ug/L		03/24/23 05:15	03/31/23 01:05	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/24/23 05:15	03/31/23 01:05	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		03/24/23 05:15	03/31/23 01:05	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		03/24/23 05:15	03/31/23 01:05	1
Pentachlorophenol	ND		1.0	0.85	ug/L		03/24/23 05:15	03/31/23 01:05	1
Phenanthrene	ND		0.20	0.17	ug/L		03/24/23 05:15	03/31/23 01:05	1
Phenol	ND		1.0	0.53	ug/L		03/24/23 05:15	03/31/23 01:05	1
Pyrene	ND		0.20	0.086	ug/L		03/24/23 05:15	03/31/23 01:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,7-Tribromophenol	*: 7*		*28 - 12:*	*603243:20 65/15*	*603013:20 61/65*	*1*
2-Fluorobiphenyl (Surr)	*50*		*01 - 126*	*603243:20 65/15*	*603013:20 61/65*	*1*
2-Fluorophenol	*2:*		*1: - 126*	*603243:20 65/15*	*603013:20 61/65*	*1*
Nitrobenzene-d5	*70*		*2: - 126*	*603243:20 65/15*	*603013:20 61/65*	*1*
Phenol-d7 (Surr)	*26*		*16 - 126*	*603243:20 65/15*	*603013:20 61/65*	*1*
p-Terphenyl-d14 (Surr)	*81*		*45 - 126*	*603243:20 65/15*	*603013:20 61/65*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/28/23 19:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*122*		*26 - 144*		*03/28/23 19:29*	*1*

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.049	0.035	mg/L		03/29/23 21:24	04/01/23 19:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*79*		*50 - 151*	*03/29/23 21:24*	*04/01/23 19:04*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/23/23 04:28	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/23/23 08:16	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**2.6**		1.0	0.36	mg/L			03/23/23 09:13	1
Nitrite as N	ND		0.10	0.043	mg/L			03/23/23 09:13	1
Fluoride	**0.075**	**J,DX**	0.10	0.046	mg/L			03/23/23 09:13	1
Nitrate as N	**0.030**	**J,DX**	0.10	0.020	mg/L			03/23/23 09:13	1
Sulfate	**2.9**		1.0	0.24	mg/L			03/23/23 09:13	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/23/23 20:30	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	0.030	J,DX	0.10	0.020	mg/L			03/24/23 10:42	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	50	J,DX	500	3.5	ug/L		03/24/23 06:38	03/24/23 18:47	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	45	J,DX BU	500	3.5	ug/L			03/27/23 11:51	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**180**		15	8.6	ug/L		03/24/23 07:07	03/24/23 10:21	1
Silver	ND		1.0	0.23	ug/L		03/24/23 07:07	03/24/23 10:21	1
Arsenic	**0.55**	**J,DX**	1.0	0.16	ug/L		03/24/23 07:07	03/24/23 10:21	1
Barium	**19**		1.0	0.17	ug/L		03/24/23 07:07	03/27/23 09:56	1
Beryllium	ND		0.50	0.26	ug/L		03/24/23 07:07	03/24/23 10:21	1
Cadmium	ND		1.0	0.13	ug/L		03/24/23 07:07	03/24/23 10:21	1
Chromium	**0.45**	**J,DX**	2.0	0.14	ug/L		03/24/23 07:07	03/24/23 10:21	1
Cobalt	**0.20**	**J,DX**	1.0	0.14	ug/L		03/24/23 07:07	03/24/23 10:21	1
Copper	**1.4**	**J,DX**	2.0	0.32	ug/L		03/24/23 07:07	03/24/23 10:21	1
Iron	**200**		20	3.7	ug/L		03/24/23 07:07	03/24/23 10:21	1
Manganese	**9.5**		1.0	0.41	ug/L		03/24/23 07:07	03/24/23 10:21	1
Nickel	**1.8**	**J,DX**	2.0	0.17	ug/L		03/24/23 07:07	03/27/23 09:56	1
Lead	**0.19**	**J,DX**	1.0	0.12	ug/L		03/24/23 07:07	03/24/23 10:21	1
Antimony	ND		2.0	0.36	ug/L		03/24/23 07:07	03/24/23 10:21	1
Zinc	ND		20	2.8	ug/L		03/24/23 07:07	03/24/23 10:21	1
Selenium	**0.62**	**J,DX**	2.0	0.52	ug/L		03/24/23 07:07	03/24/23 10:21	1
Thallium	ND		1.0	0.11	ug/L		03/24/23 07:07	03/24/23 10:21	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**75**	**BU**	15	8.6	ug/L			03/23/23 12:41	1
Silver	**0.48**	**J,DX BU**	1.0	0.23	ug/L			03/23/23 12:41	1
Arsenic	**0.54**	**J,DX BU**	1.0	0.16	ug/L			03/23/23 12:41	1
Barium	**17**	**BU**	1.0	0.17	ug/L			03/23/23 12:41	1
Beryllium	ND	BU	0.50	0.26	ug/L			03/23/23 12:41	1
Cadmium	ND	BU	1.0	0.13	ug/L			03/23/23 12:41	1
Chromium	**0.41**	**J,DX BU**	2.0	0.14	ug/L			03/23/23 12:41	1
Cobalt	**0.22**	**J,DX BU**	1.0	0.14	ug/L			03/23/23 12:41	1
Copper	**1.3**	**J,DX BU**	2.0	0.32	ug/L			03/23/23 12:41	1
Iron	**86**	**BU**	20	3.7	ug/L			03/23/23 12:41	1
Manganese	**5.3**	**BU**	1.0	0.41	ug/L			03/23/23 12:41	1
Nickel	ND	BU	2.0	0.17	ug/L			03/23/23 12:41	1
Thallium	ND	BU	1.0	0.11	ug/L			03/23/23 12:41	1
Lead	**0.14**	**J,DX BU**	1.0	0.12	ug/L			03/23/23 12:41	1
Antimony	**3.4**	**BU**	2.0	0.36	ug/L			03/23/23 12:41	1
Zinc	ND	BU	20	2.8	ug/L			03/23/23 12:41	1
Selenium	**0.84**	**J,DX BU**	2.0	0.52	ug/L			03/23/23 12:41	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

General Chemistry

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	ND		0.96	0.49	mg/L		03/28/23 08:45	03/30/23 08:49	1
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			04/04/23 22:30	1
Ammonia (EPA 350.1)	**0.032**	**J,DX**	0.075	0.032	mg/L		04/03/23 10:18	04/03/23 12:38	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/29/23 15:41	1
Turbidity (SM 2130B)	**2.4**		0.05	0.05	NTU			03/23/23 13:53	1
Total Dissolved Solids (SM 2540C)	**110**		10	8.7	mg/L			03/28/23 21:51	1
Total Suspended Solids (SM 2540D)	**3.1**		1.0	0.83	mg/L			03/28/23 16:55	1
Biochemical Oxygen Demand (SM 5210B)	ND		2.0	1.0	mg/L		03/23/23 11:21	03/23/23 12:11	1
Carbon, Total Organic (SM 5310D)	**10**		4.0	2.1	mg/L			04/04/23 02:38	8
MBAS (SM 5540C)	**0.063**	**J,DX**	0.20	0.050	mg/L		03/23/23 14:20	03/23/23 15:29	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**94**		1.0	1.0	umhos/cm			03/30/23 16:35	1
Settleable Solids (SM 2540F)	**0.10**		0.10	0.10	mL/L			03/23/23 14:13	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

General Chemistry - Dissolved

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			03/24/23 12:34	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			04/05/23 07:43	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			04/05/23 07:43	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			04/05/23 07:43	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			04/05/23 07:43	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			04/05/23 07:43	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			04/05/23 07:43	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			04/05/23 07:43	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			04/05/23 07:43	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			04/05/23 07:43	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Haley & Aldrich, Inc.

Date Sampled:	03/22/23
Date Received:	03/22/23
Work Order No:	570-132140
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
BGBMP0003_20230322		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

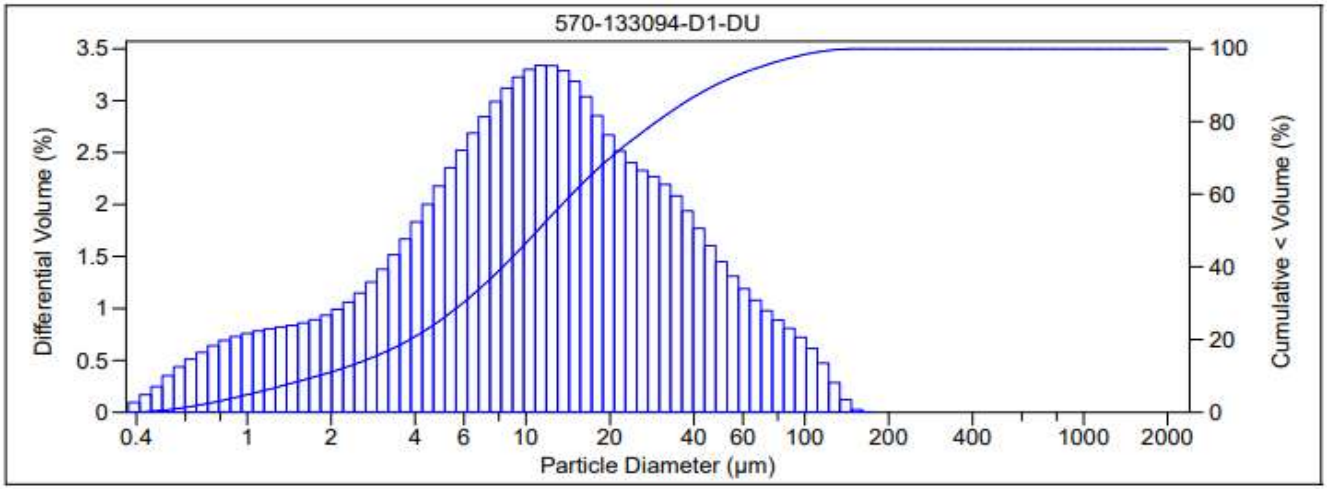
Enthalpy Analytical LLC

Date Sampled:	03/29/23
Date Received:	03/30/23
Work Order No:	570-133094
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: 482457

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230329		Silt	0.019

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.36	5.83	73.42	20.39	93.81



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

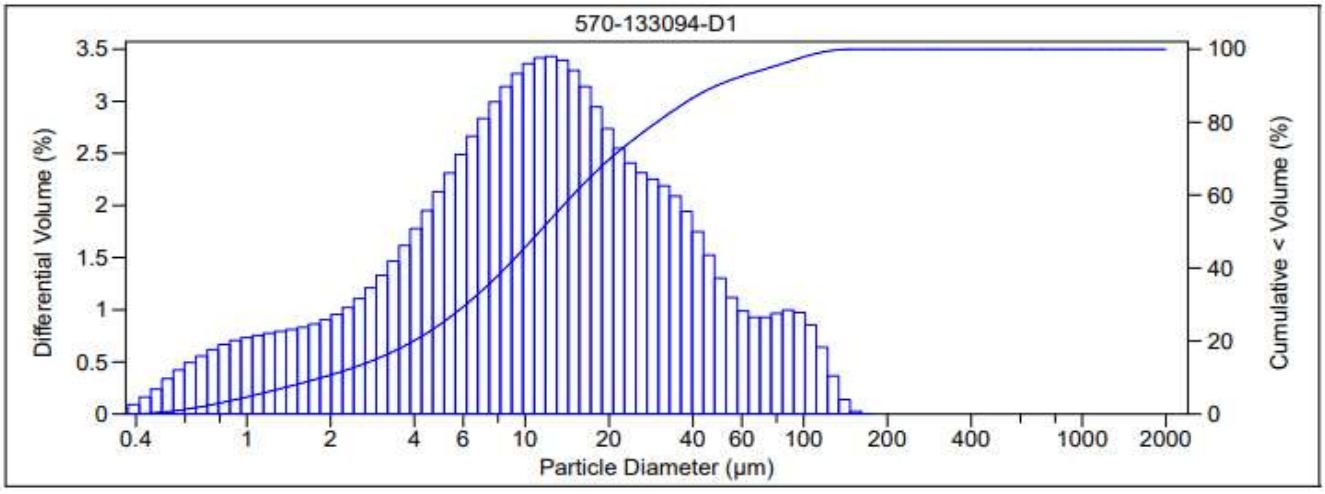
Enthalpy Analytical LLC

Date Sampled:	03/29/23
Date Received:	03/30/23
Work Order No:	570-133094
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: 482457

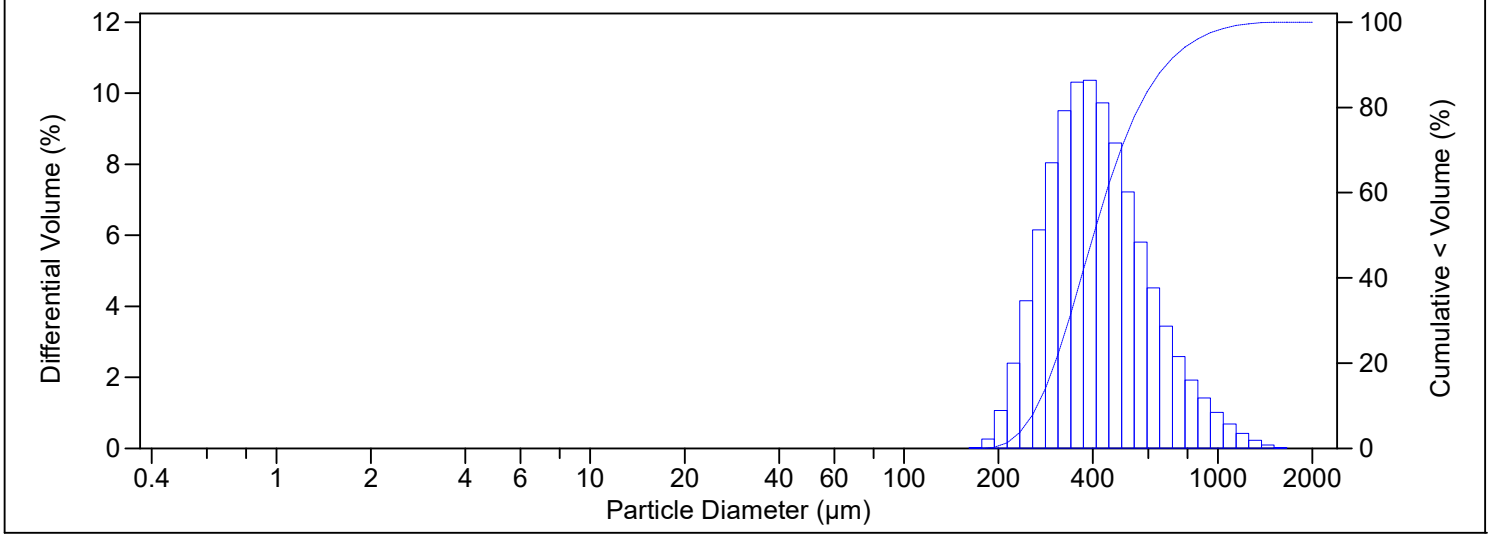
Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230329		Silt	0.020

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.44	6.54	73.33	19.69	93.02



V 3.0

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.27.17.$ls STD SAND_ 5 Apr 2023_11.27.17.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	17 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.71%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:26 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.27.17.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	446.6 µm	S.D.:	184.8 µm
Median:	401.6 µm	Variance:	34149 µm^2
Mean/Median ratio:	1.112	Skewness:	1.650 Right skewed
Mode:	391.0 µm	Kurtosis:	3.726 Leptokurtic

d_{10}: 265.5 µm d_{50}: 401.6 µm d_{90}: 687.4 µm

Folk and Ward Statistics (Phi)

Mean:	1.28	Median:	1.32	Deviation:	0.53
Skewness:	-0.13	Kurtosis:	1.01		

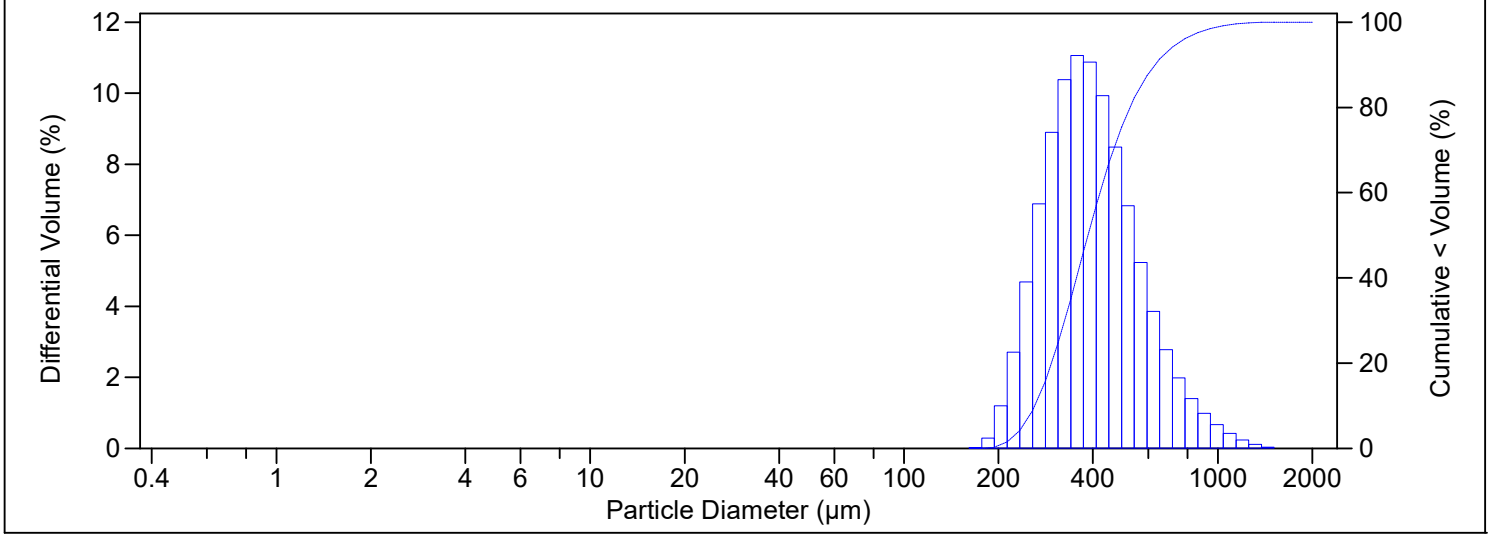
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
241.0 µm	288.7 µm	318.9 µm	367.0 µm	401.6 µm	523.0 µm	599.7 µm	820.0 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.27.17 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.64
250	64.9
500	26.5
1000	1.92
2000	

STD SAND_ 5 Apr 2023_11.27.17.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.42
0.412	0	22.73	0	1255	0.23
0.452	0	24.95	0	1377	0.099
0.496	0	27.39	0	1512	0.021
0.545	0	30.07	0	1660	0.0010
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.016		
3.206	0	176.9	0.26		
3.519	0	194.2	1.07		
3.863	0	213.2	2.40		
4.241	0	234.1	4.16		
4.656	0	256.9	6.15		
5.111	0	282.1	8.04		
5.611	0	309.6	9.51		
6.159	0	339.9	10.3		
6.761	0	373.1	10.4		
7.422	0	409.6	9.73		
8.148	0	449.7	8.60		
8.944	0	493.6	7.22		
9.819	0	541.9	5.81		
10.78	0	594.9	4.52		
11.83	0	653.0	3.44		
12.99	0	716.9	2.58		
14.26	0	786.9	1.93		
15.65	0	863.9	1.42		
17.18	0	948.3	1.02		
18.86	0	1041	0.69		

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.55.13.$ls STD SAND_ 5 Apr 2023_11.55.13.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	19 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.77%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:54 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	10%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.55.13.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	423.4 µm	S.D.:	164.0 µm
Median:	386.1 µm	Variance:	26894 µm^2
Mean/Median ratio:	1.097	Skewness:	1.674 Right skewed
Mode:	356.1 µm	Kurtosis:	4.130 Leptokurtic

d_{10}: 260.9 µm d_{50}: 386.1 µm d_{90}: 632.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.34	Median:	1.37	Deviation:	0.50
Skewness:	-0.12	Kurtosis:	1.02		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
237.9 µm	282.7 µm	310.5 µm	354.7 µm	386.1 µm	491.4 µm	559.5 µm	747.2 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.55.13 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.49
250	68.8
500	22.6
1000	1.11
2000	

STD SAND_ 5 Apr 2023_11.55.13.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.23
0.412	0	22.73	0	1255	0.12
0.452	0	24.95	0	1377	0.040
0.496	0	27.39	0	1512	0.0034
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.017		
3.206	0	176.9	0.29		
3.519	0	194.2	1.20		
3.863	0	213.2	2.71		
4.241	0	234.1	4.69		
4.656	0	256.9	6.88		
5.111	0	282.1	8.90		
5.611	0	309.6	10.4		
6.159	0	339.9	11.1		
6.761	0	373.1	10.9		
7.422	0	409.6	9.93		
8.148	0	449.7	8.48		
8.944	0	493.6	6.83		
9.819	0	541.9	5.23		
10.78	0	594.9	3.86		
11.83	0	653.0	2.78		
12.99	0	716.9	1.98		
14.26	0	786.9	1.41		
15.65	0	863.9	0.98		
17.18	0	948.3	0.67		
18.86	0	1041	0.42		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-132140-1	BGBMP0003_20230322	99	99	84	102
570-132140-2	TB_20230322-2	96	99	87	101
LCS 570-313824/1003	Lab Control Sample	100	102	90	103
LCS 570-314233/1004	Lab Control Sample	111	105	92	101
LCSD 570-313824/4	Lab Control Sample Dup	100	104	93	102
LCSD 570-314233/5	Lab Control Sample Dup	106	105	92	105
MB 570-313824/6	Method Blank	100	101	91	102
MB 570-314233/7	Method Blank	104	99	92	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		14DCBTN
Lab Sample ID	Client Sample ID	(67-133)
570-132140-1	BGBMP0003_20230322	123
570-132140-4	TB_20230322	101
LCS 570-313870/5	Lab Control Sample	100
LCSD 570-313870/6	Lab Control Sample Dup	104
MB 570-313870/9	Method Blank	106

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-132140-1	BGBMP0003_20230322	76	53	27	63	20	81
LCS 570-314349/2-A	Lab Control Sample	95	71	47	67	37	99
LCSD 570-314349/3-A	Lab Control Sample Dup	90	69	47	66	35	101
MB 570-314349/1-A	Method Blank	66	46	35	57	25	81

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-1
Project/Site: Boeing SSFL ISRA and BMP

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	BFB1 (20-144)								
570-132140-1	BGBMP0003_20230322	122								
LCS 570-315315/6	Lab Control Sample	124								
LCSD 570-315315/4	Lab Control Sample Dup	123								
MB 570-315315/5	Method Blank	122								

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	OTCSN1 (53-151)								
570-132140-1	BGBMP0003_20230322	69								
LCS 570-315947/2-A	Lab Control Sample	99								
LCSD 570-315947/3-A	Lab Control Sample Dup	105								
MB 570-315947/1-A	Method Blank	102								

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-313824/6
Matrix: Water
Analysis Batch: 313824

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/22/23 15:16	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/22/23 15:16	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/22/23 15:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/22/23 15:16	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/22/23 15:16	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/22/23 15:16	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/22/23 15:16	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/22/23 15:16	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/22/23 15:16	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/22/23 15:16	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/22/23 15:16	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/22/23 15:16	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/22/23 15:16	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/22/23 15:16	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/22/23 15:16	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/22/23 15:16	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/22/23 15:16	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/22/23 15:16	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/22/23 15:16	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/22/23 15:16	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/22/23 15:16	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/22/23 15:16	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/22/23 15:16	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/22/23 15:16	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/22/23 15:16	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/22/23 15:16	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/22/23 15:16	1
2-Hexanone	ND		5.0	2.2	ug/L			03/22/23 15:16	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/22/23 15:16	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/22/23 15:16	1
Acetone	ND		20	16	ug/L			03/22/23 15:16	1
Acrolein	ND		5.0	4.6	ug/L			03/22/23 15:16	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/22/23 15:16	1
Benzene	ND		0.50	0.28	ug/L			03/22/23 15:16	1
Bromobenzene	ND		0.50	0.23	ug/L			03/22/23 15:16	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/22/23 15:16	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/22/23 15:16	1
Bromoform	ND		1.0	0.25	ug/L			03/22/23 15:16	1
Bromomethane	ND		0.50	0.22	ug/L			03/22/23 15:16	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/22/23 15:16	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/22/23 15:16	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/22/23 15:16	1
Chloroethane	ND		1.0	0.29	ug/L			03/22/23 15:16	1
Chloroform	ND		0.50	0.19	ug/L			03/22/23 15:16	1
Chloromethane	ND		0.50	0.30	ug/L			03/22/23 15:16	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/22/23 15:16	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/22/23 15:16	1
Cyclohexane	ND		2.0	0.79	ug/L			03/22/23 15:16	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-313824/6
Matrix: Water
Analysis Batch: 313824

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.15	ug/L			03/22/23 15:16	1
Dibromomethane	ND		0.50	0.19	ug/L			03/22/23 15:16	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/22/23 15:16	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/22/23 15:16	1
Ethanol	ND		100	65	ug/L			03/22/23 15:16	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/22/23 15:16	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/22/23 15:16	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/22/23 15:16	1
Isopropanol	ND		250	120	ug/L			03/22/23 15:16	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/22/23 15:16	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/22/23 15:16	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/22/23 15:16	1
Naphthalene	ND		1.0	0.33	ug/L			03/22/23 15:16	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/22/23 15:16	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/22/23 15:16	1
o-Xylene	ND		0.50	0.15	ug/L			03/22/23 15:16	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/22/23 15:16	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/22/23 15:16	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/22/23 15:16	1
Styrene	ND		0.50	0.19	ug/L			03/22/23 15:16	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/22/23 15:16	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/22/23 15:16	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/22/23 15:16	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/22/23 15:16	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/22/23 15:16	1
Toluene	ND		0.50	0.23	ug/L			03/22/23 15:16	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/22/23 15:16	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/22/23 15:16	1
Trichloroethene	ND		0.50	0.17	ug/L			03/22/23 15:16	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/22/23 15:16	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/22/23 15:16	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/22/23 15:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*188*		*98 - 148*		*03/22/23 16:13*	*1*
4-Bromofluorobenzene (Surr)	*181*		*98 - 148*		*03/22/23 16:13*	*1*
Dibromofluoromethane (Surr)	*b1*		*98 - 148*		*03/22/23 16:13*	*1*
Toluene-d8 (Surr)	*182*		*98 - 148*		*03/22/23 16:13*	*1*

Lab Sample ID: LCS 570-313824/1003
Matrix: Water
Analysis Batch: 313824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.5		ug/L		105	60 - 140
1,1,1-Trichloroethane	10.0	10.6		ug/L		106	70 - 130
1,1,2,2-Tetrachloroethane	10.0	8.84		ug/L		88	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.80		ug/L		98	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-313824/1003
Matrix: Water
Analysis Batch: 313824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	70 - 130
1,1-Dichloroethane	10.0	11.7		ug/L		117	70 - 130
1,1-Dichloroethene	10.0	10.8		ug/L		108	50 - 150
1,1-Dichloropropene	10.0	10.1		ug/L		101	60 - 140
1,2,3-Trichlorobenzene	10.0	9.19		ug/L		92	60 - 140
1,2,3-Trichloropropane	10.0	9.86		ug/L		99	60 - 140
1,2,4-Trichlorobenzene	10.0	9.05		ug/L		90	60 - 140
1,2,4-Trimethylbenzene	10.0	8.94		ug/L		89	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	9.24		ug/L		92	60 - 140
1,2-Dibromoethane	10.0	10.4		ug/L		104	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	9.04		ug/L		90	60 - 140
1,2-Dichlorobenzene	10.0	9.54		ug/L		95	65 - 135
1,2-Dichloroethane	10.0	11.7		ug/L		117	70 - 130
1,2-Dichloropropane	10.0	11.8		ug/L		118	35 - 165
1,3,5-Trimethylbenzene	10.0	10.7		ug/L		107	60 - 140
1,3-Dichlorobenzene	10.0	10.1		ug/L		101	70 - 130
1,3-Dichloropropane	10.0	10.1		ug/L		101	60 - 140
1,4-Dichlorobenzene	10.0	9.68		ug/L		97	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	9.03	J,DX	ug/L		90	60 - 140
2,2-Dichloropropane	10.0	11.6		ug/L		116	60 - 140
2-Butanone (MEK)	10.0	9.59		ug/L		96	60 - 140
2-Chloroethyl vinyl ether	10.0	8.72		ug/L		87	1 - 225
2-Chlorotoluene	10.0	10.8		ug/L		108	60 - 140
2-Hexanone	10.0	10.9		ug/L		109	60 - 140
4-Chlorotoluene	10.0	10.2		ug/L		102	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	12.6		ug/L		126	60 - 140
Acetone	10.0	ND		ug/L		115	60 - 140
Acrolein	20.0	19.3		ug/L		96	60 - 140
Acrylonitrile	10.0	12.9		ug/L		129	60 - 140
Benzene	10.0	10.7		ug/L		107	65 - 135
Bromobenzene	10.0	10.6		ug/L		106	60 - 140
Bromochloromethane	10.0	10.2		ug/L		102	60 - 140
Bromodichloromethane	10.0	10.8		ug/L		108	65 - 135
Bromoform	10.0	10.4		ug/L		104	70 - 130
Bromomethane	10.0	13.5		ug/L		135	15 - 185
Carbon disulfide	10.0	8.38		ug/L		84	60 - 140
Carbon tetrachloride	10.0	10.4		ug/L		104	70 - 130
Chlorobenzene	10.0	10.4		ug/L		104	65 - 135
Chloroethane	10.0	9.28		ug/L		93	40 - 160
Chloroform	10.0	9.70		ug/L		97	70 - 135
Chloromethane	10.0	11.7		ug/L		117	1 - 205
cis-1,2-Dichloroethene	10.0	9.81		ug/L		98	60 - 140
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	25 - 175
Cyclohexane	10.0	10.7		ug/L		107	60 - 140
Dibromochloromethane	10.0	10.3		ug/L		103	70 - 135
Dibromomethane	10.0	10.5		ug/L		105	60 - 140
Dichlorodifluoromethane	10.0	10.2		ug/L		102	60 - 140
Di-isopropyl ether (DIPE)	10.0	12.0		ug/L		120	60 - 140
Ethanol	100	109		ug/L		109	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-313824/1003
Matrix: Water
Analysis Batch: 313824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	12.1		ug/L		121	60 - 140
Ethylbenzene	10.0	11.0		ug/L		110	60 - 140
Hexachloro-1,3-butadiene	10.0	10.1		ug/L		101	60 - 140
Isopropanol	50.0	ND		ug/L		93	60 - 140
Isopropylbenzene	10.0	10.9		ug/L		109	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	9.66		ug/L		97	60 - 140
Methylene Chloride	10.0	8.92		ug/L		89	60 - 140
Naphthalene	10.0	9.08		ug/L		91	60 - 140
n-Butylbenzene	10.0	10.0		ug/L		100	60 - 140
N-Propylbenzene	10.0	11.3		ug/L		113	60 - 140
o-Xylene	10.0	10.9		ug/L		109	60 - 140
m,p-Xylene	20.0	22.4		ug/L		112	60 - 140
p-Isopropyltoluene	10.0	9.70		ug/L		97	60 - 140
sec-Butylbenzene	10.0	10.0		ug/L		100	60 - 140
Styrene	10.0	10.4		ug/L		104	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	10.4		ug/L		104	60 - 140
tert-Butyl alcohol (TBA)	50.0	62.1		ug/L		124	60 - 140
tert-Butylbenzene	10.0	10.2		ug/L		102	60 - 140
Tetrachloroethene	10.0	11.1		ug/L		111	70 - 130
Tetrahydrofuran	10.0	10.9		ug/L		109	60 - 140
Toluene	10.0	10.6		ug/L		106	70 - 130
trans-1,2-Dichloroethene	10.0	10.5		ug/L		105	70 - 130
trans-1,3-Dichloropropene	10.0	10.4		ug/L		104	50 - 150
Trichloroethene	10.0	10.7		ug/L		107	65 - 135
Trichlorofluoromethane	10.0	9.62		ug/L		96	50 - 150
Vinyl acetate	10.0	11.1		ug/L		111	60 - 140
Vinyl chloride	10.0	10.6		ug/L		106	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*188*		*98 - 148*
4-5ro: oB3uoromenf ene (Surr)	*182*		*98 - 148*
Dimro: oB3uoro: ethane (Surr)	*b8*		*98 - 148*
zoluene-dT (Surr)	*186*		*98 - 148*

Lab Sample ID: LCSD 570-313824/4
Matrix: Water
Analysis Batch: 313824

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	10.6		ug/L		106	60 - 140	0	30
1,1,1-Trichloroethane	10.0	10.7		ug/L		107	70 - 130	1	36
1,1,2,2-Tetrachloroethane	10.0	9.56		ug/L		96	60 - 140	8	61
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	9.09		ug/L		91	60 - 140	7	30
1,1,2-Trichloroethane	10.0	10.2		ug/L		102	70 - 130	1	45
1,1-Dichloroethane	10.0	11.2		ug/L		112	70 - 130	4	40
1,1-Dichloroethene	10.0	10.5		ug/L		105	50 - 150	3	32
1,1-Dichloropropene	10.0	9.96		ug/L		100	60 - 140	2	30
1,2,3-Trichlorobenzene	10.0	9.67		ug/L		97	60 - 140	5	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-313824/4
Matrix: Water
Analysis Batch: 313824

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichloropropane	10.0	10.0		ug/L		100	60 - 140	2	30
1,2,4-Trichlorobenzene	10.0	9.53		ug/L		95	60 - 140	5	30
1,2,4-Trimethylbenzene	10.0	9.30		ug/L		93	60 - 140	4	30
1,2-Dibromo-3-Chloropropane	10.0	10.1		ug/L		101	60 - 140	9	30
1,2-Dibromoethane	10.0	10.7		ug/L		107	60 - 140	3	30
1,2-Dichloro-1,1,2-trifluoroethane	10.0	8.89		ug/L		89	60 - 140	2	30
1,2-Dichlorobenzene	10.0	9.79		ug/L		98	65 - 135	3	57
1,2-Dichloroethane	10.0	12.0		ug/L		120	70 - 130	2	49
1,2-Dichloropropane	10.0	12.1		ug/L		121	35 - 165	2	55
1,3,5-Trimethylbenzene	10.0	10.7		ug/L		107	60 - 140	0	30
1,3-Dichlorobenzene	10.0	10.0		ug/L		100	70 - 130	1	43
1,3-Dichloropropane	10.0	10.4		ug/L		104	60 - 140	4	30
1,4-Dichlorobenzene	10.0	9.96		ug/L		100	65 - 135	3	57
2,2-Dichloro-1,1,1-trifluoroethane	10.0	8.57	J,DX	ug/L		86	60 - 140	5	30
2,2-Dichloropropane	10.0	10.8		ug/L		108	60 - 140	7	30
2-Butanone (MEK)	10.0	9.15		ug/L		92	60 - 140	5	30
2-Chloroethyl vinyl ether	10.0	8.01		ug/L		80	1 - 225	8	71
2-Chlorotoluene	10.0	10.8		ug/L		108	60 - 140	1	30
2-Hexanone	10.0	11.7		ug/L		117	60 - 140	7	30
4-Chlorotoluene	10.0	10.1		ug/L		101	60 - 140	1	30
4-Methyl-2-pentanone (MIBK)	10.0	13.3		ug/L		133	60 - 140	5	30
Acetone	10.0	ND		ug/L		118	60 - 140	2	30
Acrolein	20.0	19.8		ug/L		99	60 - 140	3	60
Acrylonitrile	10.0	13.1		ug/L		131	60 - 140	1	60
Benzene	10.0	10.5		ug/L		105	65 - 135	2	61
Bromobenzene	10.0	10.8		ug/L		108	60 - 140	2	30
Bromochloromethane	10.0	10.1		ug/L		101	60 - 140	1	30
Bromodichloromethane	10.0	10.9		ug/L		109	65 - 135	1	56
Bromoform	10.0	10.9		ug/L		109	70 - 130	4	42
Bromomethane	10.0	10.9		ug/L		109	15 - 185	22	61
Carbon disulfide	10.0	8.22		ug/L		82	60 - 140	2	30
Carbon tetrachloride	10.0	10.4		ug/L		104	70 - 130	1	41
Chlorobenzene	10.0	10.6		ug/L		106	65 - 135	2	53
Chloroethane	10.0	8.94		ug/L		89	40 - 160	4	78
Chloroform	10.0	9.68		ug/L		97	70 - 135	0	30
Chloromethane	10.0	11.6		ug/L		116	1 - 205	1	60
cis-1,2-Dichloroethene	10.0	9.95		ug/L		99	60 - 140	1	30
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	25 - 175	1	58
Cyclohexane	10.0	10.2		ug/L		102	60 - 140	5	30
Dibromochloromethane	10.0	10.9		ug/L		109	70 - 135	6	50
Dibromomethane	10.0	10.9		ug/L		109	60 - 140	4	30
Dichlorodifluoromethane	10.0	10.1		ug/L		101	60 - 140	1	30
Di-isopropyl ether (DIPE)	10.0	12.0		ug/L		120	60 - 140	0	30
Ethanol	100	83.7	J,DX	ug/L		84	60 - 140	27	30
Ethyl-t-butyl ether (ETBE)	10.0	12.4		ug/L		124	60 - 140	2	30
Ethylbenzene	10.0	10.9		ug/L		109	60 - 140	1	63
Hexachloro-1,3-butadiene	10.0	10.6		ug/L		106	60 - 140	5	30
Isopropanol	50.0	ND		ug/L		96	60 - 140	3	30
Isopropylbenzene	10.0	10.7		ug/L		107	60 - 140	2	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-313824/4
Matrix: Water
Analysis Batch: 313824

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	9.84		ug/L		98	60 - 140	2	30
Methylene Chloride	10.0	8.77		ug/L		88	60 - 140	2	28
Naphthalene	10.0	9.83		ug/L		98	60 - 140	8	30
n-Butylbenzene	10.0	10.4		ug/L		104	60 - 140	3	30
N-Propylbenzene	10.0	11.3		ug/L		113	60 - 140	0	30
o-Xylene	10.0	10.9		ug/L		109	60 - 140	0	30
m,p-Xylene	20.0	22.6		ug/L		113	60 - 140	1	30
p-Isopropyltoluene	10.0	9.88		ug/L		99	60 - 140	2	30
sec-Butylbenzene	10.0	10.1		ug/L		101	60 - 140	0	30
Styrene	10.0	10.5		ug/L		105	60 - 140	1	30
Tert-amyl-methyl ether (TAME)	10.0	10.6		ug/L		106	60 - 140	2	30
tert-Butyl alcohol (TBA)	50.0	62.7		ug/L		125	60 - 140	1	30
tert-Butylbenzene	10.0	10.4		ug/L		104	60 - 140	2	30
Tetrachloroethene	10.0	11.1		ug/L		111	70 - 130	0	39
Tetrahydrofuran	10.0	11.9		ug/L		119	60 - 140	9	30
Toluene	10.0	10.7		ug/L		107	70 - 130	1	41
trans-1,2-Dichloroethene	10.0	10.7		ug/L		107	70 - 130	2	45
trans-1,3-Dichloropropene	10.0	10.3		ug/L		103	50 - 150	1	86
Trichloroethene	10.0	11.0		ug/L		110	65 - 135	3	48
Trichlorofluoromethane	10.0	9.71		ug/L		97	50 - 150	1	84
Vinyl acetate	10.0	11.1		ug/L		111	60 - 140	0	30
Vinyl chloride	10.0	10.2		ug/L		102	5 - 195	4	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*188*		*98 - 148*
4-5ro: oB uoromenf ene (Surr)	*184*		*98 - 148*
Dimro: oB uoro: ethane (Surr)	*b6*		*98 - 148*
zoluene-dT (Surr)	*182*		*98 - 148*

Lab Sample ID: MB 570-314233/7
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/23/23 18:36	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/23/23 18:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/23/23 18:36	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/23/23 18:36	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/23/23 18:36	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/23/23 18:36	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/23/23 18:36	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/23/23 18:36	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/23/23 18:36	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/23/23 18:36	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/23/23 18:36	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-314233/7
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/23/23 18:36	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/23/23 18:36	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/23/23 18:36	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/23/23 18:36	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/23/23 18:36	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/23/23 18:36	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/23/23 18:36	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/23/23 18:36	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/23/23 18:36	1
2-Hexanone	ND		5.0	2.2	ug/L			03/23/23 18:36	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/23/23 18:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/23/23 18:36	1
Acetone	ND		20	16	ug/L			03/23/23 18:36	1
Acrolein	ND		5.0	4.6	ug/L			03/23/23 18:36	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/23/23 18:36	1
Benzene	ND		0.50	0.28	ug/L			03/23/23 18:36	1
Bromobenzene	ND		0.50	0.23	ug/L			03/23/23 18:36	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Bromoform	ND		1.0	0.25	ug/L			03/23/23 18:36	1
Bromomethane	ND		0.50	0.22	ug/L			03/23/23 18:36	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/23/23 18:36	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/23/23 18:36	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Chloroethane	ND		1.0	0.29	ug/L			03/23/23 18:36	1
Chloroform	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Chloromethane	ND		0.50	0.30	ug/L			03/23/23 18:36	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/23/23 18:36	1
Cyclohexane	ND		2.0	0.79	ug/L			03/23/23 18:36	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/23/23 18:36	1
Dibromomethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/23/23 18:36	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Ethanol	ND		100	65	ug/L			03/23/23 18:36	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/23/23 18:36	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/23/23 18:36	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Isopropanol	ND		250	120	ug/L			03/23/23 18:36	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/23/23 18:36	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/23/23 18:36	1
Naphthalene	ND		1.0	0.33	ug/L			03/23/23 18:36	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/23/23 18:36	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/23/23 18:36	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-314233/7
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		0.50	0.15	ug/L			03/23/23 18:36	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/23/23 18:36	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/23/23 18:36	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/23/23 18:36	1
Styrene	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/23/23 18:36	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/23/23 18:36	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/23/23 18:36	1
Toluene	ND		0.50	0.23	ug/L			03/23/23 18:36	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/23/23 18:36	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/23/23 18:36	1
Trichloroethene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/23/23 18:36	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/23/23 18:36	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/23/23 18:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*184*		*98 - 148*		*860260260 1T/69*	*1*
4-5ro: oBuoromenf ene (Surr)	*bb*		*98 - 148*		*860260260 1T/69*	*1*
Dimro: oBuoro: ethane (Surr)	*b2*		*98 - 148*		*860260260 1T/69*	*1*
zoluene-dT (Surr)	*181*		*98 - 148*		*860260260 1T/69*	*1*

Lab Sample ID: LCS 570-314233/1004
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.9		ug/L		109	60 - 140
1,1,1-Trichloroethane	10.0	11.1		ug/L		111	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.36		ug/L		94	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	7.90		ug/L		79	60 - 140
1,1,2-Trichloroethane	10.0	9.95		ug/L		100	70 - 130
1,1-Dichloroethane	10.0	11.9		ug/L		119	70 - 130
1,1-Dichloroethene	10.0	10.7		ug/L		107	50 - 150
1,1-Dichloropropene	10.0	10.3		ug/L		103	60 - 140
1,2,3-Trichlorobenzene	10.0	9.96		ug/L		100	60 - 140
1,2,3-Trichloropropane	10.0	10.1		ug/L		101	60 - 140
1,2,4-Trichlorobenzene	10.0	10.0		ug/L		100	60 - 140
1,2,4-Trimethylbenzene	10.0	9.65		ug/L		96	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	9.56		ug/L		96	60 - 140
1,2-Dibromoethane	10.0	10.4		ug/L		104	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	9.04		ug/L		90	60 - 140
1,2-Dichlorobenzene	10.0	9.91		ug/L		99	65 - 135
1,2-Dichloroethane	10.0	12.4		ug/L		124	70 - 130
1,2-Dichloropropane	10.0	12.7		ug/L		127	35 - 165
1,3,5-Trimethylbenzene	10.0	11.1		ug/L		111	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-314233/1004
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,3-Dichloropropane	10.0	10.5		ug/L		105	60 - 140
1,4-Dichlorobenzene	10.0	10.4		ug/L		104	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	8.77	J,DX	ug/L		88	60 - 140
2,2-Dichloropropane	10.0	12.0		ug/L		120	60 - 140
2-Butanone (MEK)	10.0	9.31		ug/L		93	60 - 140
2-Chloroethyl vinyl ether	10.0	9.23		ug/L		92	1 - 225
2-Chlorotoluene	10.0	11.5		ug/L		115	60 - 140
2-Hexanone	10.0	9.36		ug/L		94	60 - 140
4-Chlorotoluene	10.0	10.4		ug/L		104	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	12.6		ug/L		126	60 - 140
Acetone	10.0	ND		ug/L		99	60 - 140
Acrolein	20.0	20.6		ug/L		103	60 - 140
Acrylonitrile	10.0	14.0		ug/L		140	60 - 140
Benzene	10.0	10.7		ug/L		107	65 - 135
Bromobenzene	10.0	11.5		ug/L		115	60 - 140
Bromochloromethane	10.0	10.7		ug/L		107	60 - 140
Bromodichloromethane	10.0	11.1		ug/L		111	65 - 135
Bromoform	10.0	10.8		ug/L		108	70 - 130
Bromomethane	10.0	11.6		ug/L		116	15 - 185
Carbon disulfide	10.0	8.29		ug/L		83	60 - 140
Carbon tetrachloride	10.0	10.4		ug/L		104	70 - 130
Chlorobenzene	10.0	11.0		ug/L		110	65 - 135
Chloroethane	10.0	9.95		ug/L		99	40 - 160
Chloroform	10.0	10.5		ug/L		105	70 - 135
Chloromethane	10.0	12.0		ug/L		120	1 - 205
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	60 - 140
cis-1,3-Dichloropropene	10.0	10.8		ug/L		108	25 - 175
Cyclohexane	10.0	9.61		ug/L		96	60 - 140
Dibromochloromethane	10.0	11.0		ug/L		110	70 - 135
Dibromomethane	10.0	11.0		ug/L		110	60 - 140
Dichlorodifluoromethane	10.0	10.3		ug/L		103	60 - 140
Di-isopropyl ether (DIPE)	10.0	12.7		ug/L		127	60 - 140
Ethanol	100	97.3	J,DX	ug/L		97	60 - 140
Ethyl-t-butyl ether (ETBE)	10.0	13.0		ug/L		130	60 - 140
Ethylbenzene	10.0	11.2		ug/L		112	60 - 140
Hexachloro-1,3-butadiene	10.0	10.9		ug/L		109	60 - 140
Isopropanol	50.0	ND		ug/L		107	60 - 140
Isopropylbenzene	10.0	11.3		ug/L		113	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	10.1		ug/L		101	60 - 140
Methylene Chloride	10.0	9.43		ug/L		94	60 - 140
Naphthalene	10.0	10.2		ug/L		102	60 - 140
n-Butylbenzene	10.0	10.9		ug/L		109	60 - 140
N-Propylbenzene	10.0	11.7		ug/L		117	60 - 140
o-Xylene	10.0	11.3		ug/L		113	60 - 140
m,p-Xylene	20.0	23.7		ug/L		118	60 - 140
p-Isopropyltoluene	10.0	10.3		ug/L		103	60 - 140
sec-Butylbenzene	10.0	10.5		ug/L		105	60 - 140
Styrene	10.0	11.1		ug/L		111	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-314233/1004
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Tert-amyl-methyl ether (TAME)	10.0	10.7		ug/L		107	60 - 140
tert-Butyl alcohol (TBA)	50.0	55.3		ug/L		111	60 - 140
tert-Butylbenzene	10.0	10.8		ug/L		108	60 - 140
Tetrachloroethene	10.0	11.6		ug/L		116	70 - 130
Tetrahydrofuran	10.0	12.1		ug/L		121	60 - 140
Toluene	10.0	11.0		ug/L		110	70 - 130
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
trans-1,3-Dichloropropene	10.0	10.4		ug/L		104	50 - 150
Trichloroethene	10.0	10.9		ug/L		109	65 - 135
Trichlorofluoromethane	10.0	10.5		ug/L		105	50 - 150
Vinyl acetate	10.0	11.5		ug/L		115	60 - 140
Vinyl chloride	10.0	11.0		ug/L		110	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*98 - 148*
4-5ro: oBuoromenf ene (Surr)	*183*		*98 - 148*
Dimro: oBuoro: ethane (Surr)	*b2*		*98 - 148*
zoluene-dT (Surr)	*181*		*98 - 148*

Lab Sample ID: LCSD 570-314233/5
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	11.1		ug/L		111	60 - 140	1	30
1,1,1-Trichloroethane	10.0	11.1		ug/L		111	70 - 130	1	36
1,1,2,2-Tetrachloroethane	10.0	9.50		ug/L		95	60 - 140	2	61
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	9.65		ug/L		97	60 - 140	20	30
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	70 - 130	2	45
1,1-Dichloroethane	10.0	11.9		ug/L		119	70 - 130	0	40
1,1-Dichloroethene	10.0	10.9		ug/L		109	50 - 150	1	32
1,1-Dichloropropene	10.0	10.5		ug/L		105	60 - 140	2	30
1,2,3-Trichlorobenzene	10.0	10.5		ug/L		105	60 - 140	6	30
1,2,3-Trichloropropane	10.0	9.96		ug/L		100	60 - 140	2	30
1,2,4-Trichlorobenzene	10.0	10.8		ug/L		108	60 - 140	8	30
1,2,4-Trimethylbenzene	10.0	10.2		ug/L		102	60 - 140	5	30
1,2-Dibromo-3-Chloropropane	10.0	9.93		ug/L		99	60 - 140	4	30
1,2-Dibromoethane	10.0	10.3		ug/L		103	60 - 140	1	30
1,2-Dichloro-1,1,2-trifluoroethane	10.0	9.51		ug/L		95	60 - 140	5	30
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	65 - 135	4	57
1,2-Dichloroethane	10.0	12.5		ug/L		125	70 - 130	1	49
1,2-Dichloropropane	10.0	12.7		ug/L		127	35 - 165	0	55
1,3,5-Trimethylbenzene	10.0	11.4		ug/L		114	60 - 140	2	30
1,3-Dichlorobenzene	10.0	10.7		ug/L		107	70 - 130	3	43
1,3-Dichloropropane	10.0	10.4		ug/L		104	60 - 140	1	30
1,4-Dichlorobenzene	10.0	10.8		ug/L		108	65 - 135	4	57
2,2-Dichloro-1,1,1-trifluoroethane	10.0	9.03	J,DX	ug/L		90	60 - 140	3	30
2,2-Dichloropropane	10.0	12.1		ug/L		121	60 - 140	1	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-314233/5
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Butanone (MEK)	10.0	7.93		ug/L		79	60 - 140	16	30
2-Chloroethyl vinyl ether	10.0	8.53		ug/L		85	1 - 225	8	71
2-Chlorotoluene	10.0	11.5		ug/L		115	60 - 140	1	30
2-Hexanone	10.0	11.1		ug/L		111	60 - 140	17	30
4-Chlorotoluene	10.0	11.0		ug/L		110	60 - 140	5	30
4-Methyl-2-pentanone (MIBK)	10.0	13.1		ug/L		131	60 - 140	4	30
Acetone	10.0	ND		ug/L		113	60 - 140	13	30
Acrolein	20.0	18.9		ug/L		95	60 - 140	8	60
Acrylonitrile	10.0	12.3		ug/L		123	60 - 140	13	60
Benzene	10.0	11.1		ug/L		111	65 - 135	3	61
Bromobenzene	10.0	11.4		ug/L		114	60 - 140	1	30
Bromochloromethane	10.0	10.3		ug/L		103	60 - 140	4	30
Bromodichloromethane	10.0	11.4		ug/L		114	65 - 135	2	56
Bromoform	10.0	10.9		ug/L		109	70 - 130	1	42
Bromomethane	10.0	10.7		ug/L		107	15 - 185	7	61
Carbon disulfide	10.0	10.2		ug/L		102	60 - 140	21	30
Carbon tetrachloride	10.0	11.0		ug/L		110	70 - 130	6	41
Chlorobenzene	10.0	11.1		ug/L		111	65 - 135	2	53
Chloroethane	10.0	9.15		ug/L		91	40 - 160	8	78
Chloroform	10.0	9.96		ug/L		100	70 - 135	5	30
Chloromethane	10.0	11.5		ug/L		115	1 - 205	4	60
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	60 - 140	0	30
cis-1,3-Dichloropropene	10.0	11.3		ug/L		113	25 - 175	4	58
Cyclohexane	10.0	10.8		ug/L		108	60 - 140	12	30
Dibromochloromethane	10.0	10.9		ug/L		109	70 - 135	1	50
Dibromomethane	10.0	11.3		ug/L		113	60 - 140	3	30
Dichlorodifluoromethane	10.0	7.99		ug/L		80	60 - 140	25	30
Di-isopropyl ether (DIPE)	10.0	12.3		ug/L		123	60 - 140	3	30
Ethanol	100	117		ug/L		117	60 - 140	18	30
Ethyl-t-butyl ether (ETBE)	10.0	12.6		ug/L		126	60 - 140	3	30
Ethylbenzene	10.0	11.6		ug/L		116	60 - 140	3	63
Hexachloro-1,3-butadiene	10.0	11.7		ug/L		117	60 - 140	7	30
Isopropanol	50.0	ND		ug/L		92	60 - 140	16	30
Isopropylbenzene	10.0	11.6		ug/L		116	60 - 140	2	30
Methyl-t-Butyl Ether (MTBE)	10.0	9.74		ug/L		97	60 - 140	4	30
Methylene Chloride	10.0	9.50		ug/L		95	60 - 140	1	28
Naphthalene	10.0	10.4		ug/L		104	60 - 140	2	30
n-Butylbenzene	10.0	11.4		ug/L		114	60 - 140	4	30
N-Propylbenzene	10.0	12.2		ug/L		122	60 - 140	4	30
o-Xylene	10.0	11.5		ug/L		115	60 - 140	2	30
m,p-Xylene	20.0	23.8		ug/L		119	60 - 140	1	30
p-Isopropyltoluene	10.0	10.8		ug/L		108	60 - 140	4	30
sec-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	5	30
Styrene	10.0	11.0		ug/L		110	60 - 140	1	30
Tert-amyl-methyl ether (TAME)	10.0	10.6		ug/L		106	60 - 140	1	30
tert-Butyl alcohol (TBA)	50.0	67.4		ug/L		135	60 - 140	20	30
tert-Butylbenzene	10.0	11.3		ug/L		113	60 - 140	4	30
Tetrachloroethene	10.0	11.9		ug/L		119	70 - 130	3	39
Tetrahydrofuran	10.0	11.5		ug/L		115	60 - 140	5	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-314233/5
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Toluene			10.0	11.2		ug/L		112	70 - 130	2	41
trans-1,2-Dichloroethene			10.0	10.3		ug/L		103	70 - 130	3	45
trans-1,3-Dichloropropene			10.0	11.0		ug/L		110	50 - 150	5	86
Trichloroethene			10.0	11.8		ug/L		118	65 - 135	8	48
Trichlorofluoromethane			10.0	8.44		ug/L		84	50 - 150	22	84
Vinyl acetate			10.0	11.2		ug/L		112	60 - 140	3	30
Vinyl chloride			10.0	9.50		ug/L		95	5 - 195	15	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*189*		*98 - 148*
4-5ro: oB uoromenf ene (Surr)	*183*		*98 - 148*
Dimro: oB uoro: ethane (Surr)	*b2*		*98 - 148*
zoluene-dT (Surr)	*183*		*98 - 148*

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-313870/9
Matrix: Water
Analysis Batch: 313870

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/22/23 20:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichloromutane (Surr)	*189*		*97 - 166*		*860220 26 28/6T*	*1*

Lab Sample ID: LCS 570-313870/5
Matrix: Water
Analysis Batch: 313870

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			20.0	17.4		ug/L		87	75 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,4-Dichloromutane (Surr)	*188*		*97 - 166*

Lab Sample ID: LCSD 570-313870/6
Matrix: Water
Analysis Batch: 313870

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	17.0		ug/L		85	75 - 120	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,4-Dichloromutane (Surr)	*184*		*97 - 166*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-314349/1-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314349

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		03/24/23 05:15	03/27/23 14:38	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		03/24/23 05:15	03/27/23 14:38	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		03/24/23 05:15	03/27/23 14:38	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		03/24/23 05:15	03/27/23 14:38	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		03/24/23 05:15	03/27/23 14:38	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/24/23 05:15	03/27/23 14:38	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		03/24/23 05:15	03/27/23 14:38	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		03/24/23 05:15	03/27/23 14:38	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		03/24/23 05:15	03/27/23 14:38	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/24/23 05:15	03/27/23 14:38	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		03/24/23 05:15	03/27/23 14:38	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		03/24/23 05:15	03/27/23 14:38	1
2-Chlorophenol	ND		0.20	0.096	ug/L		03/24/23 05:15	03/27/23 14:38	1
2-Nitrophenol	ND		5.0	3.5	ug/L		03/24/23 05:15	03/27/23 14:38	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		03/24/23 05:15	03/27/23 14:38	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		03/24/23 05:15	03/27/23 14:38	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		03/24/23 05:15	03/27/23 14:38	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		03/24/23 05:15	03/27/23 14:38	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		03/24/23 05:15	03/27/23 14:38	1
4-Nitrophenol	ND		5.0	3.4	ug/L		03/24/23 05:15	03/27/23 14:38	1
Acenaphthene	ND		0.20	0.098	ug/L		03/24/23 05:15	03/27/23 14:38	1
Acenaphthylene	ND		0.20	0.13	ug/L		03/24/23 05:15	03/27/23 14:38	1
Anthracene	ND		0.20	0.084	ug/L		03/24/23 05:15	03/27/23 14:38	1
Benzidine	ND		5.0	2.7	ug/L		03/24/23 05:15	03/27/23 14:38	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		03/24/23 05:15	03/27/23 14:38	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		03/24/23 05:15	03/27/23 14:38	1
Benzo[b]fluoranthene	ND		0.20	0.11	ug/L		03/24/23 05:15	03/27/23 14:38	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		03/24/23 05:15	03/27/23 14:38	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		03/24/23 05:15	03/27/23 14:38	1
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		03/24/23 05:15	03/27/23 14:38	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		03/24/23 05:15	03/27/23 14:38	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		03/24/23 05:15	03/27/23 14:38	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/24/23 05:15	03/27/23 14:38	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		03/24/23 05:15	03/27/23 14:38	1
Chrysene	ND		0.20	0.11	ug/L		03/24/23 05:15	03/27/23 14:38	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		03/24/23 05:15	03/27/23 14:38	1
Diethyl phthalate	ND		2.0	0.18	ug/L		03/24/23 05:15	03/27/23 14:38	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		03/24/23 05:15	03/27/23 14:38	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		03/24/23 05:15	03/27/23 14:38	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		03/24/23 05:15	03/27/23 14:38	1
Fluoranthene	ND		0.20	0.10	ug/L		03/24/23 05:15	03/27/23 14:38	1
Fluorene	ND		0.20	0.095	ug/L		03/24/23 05:15	03/27/23 14:38	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		03/24/23 05:15	03/27/23 14:38	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		03/24/23 05:15	03/27/23 14:38	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		03/24/23 05:15	03/27/23 14:38	1
Hexachloroethane	ND		0.20	0.13	ug/L		03/24/23 05:15	03/27/23 14:38	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		03/24/23 05:15	03/27/23 14:38	1
Isophorone	ND		0.20	0.099	ug/L		03/24/23 05:15	03/27/23 14:38	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-314349/1-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314349

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.20	0.11	ug/L		03/24/23 05:15	03/27/23 14:38	1
Nitrobenzene	ND		0.20	0.14	ug/L		03/24/23 05:15	03/27/23 14:38	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/24/23 05:15	03/27/23 14:38	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		03/24/23 05:15	03/27/23 14:38	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		03/24/23 05:15	03/27/23 14:38	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/24/23 05:15	03/27/23 14:38	1
Phenanthrene	ND		0.20	0.16	ug/L		03/24/23 05:15	03/27/23 14:38	1
Phenol	ND		1.0	0.52	ug/L		03/24/23 05:15	03/27/23 14:38	1
Pyrene	ND		0.20	0.086	ug/L		03/24/23 05:15	03/27/23 14:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,9-zrimro: ophenol	*99*		*2T - 127*	*860240260 83/13*	*860270260 14/6T*	*1*
2-Fluoromphenyl (Surr)	*49*		*61 - 128*	*860240260 83/13*	*860270260 14/6T*	*1*
2-Fluorophenol	*63*		*17 - 128*	*860240260 83/13*	*860270260 14/6T*	*1*
Nitromenf ene-d3	*37*		*27 - 128*	*860240260 83/13*	*860270260 14/6T*	*1*
Phenol-d9 (Surr)	*23*		*18 - 128*	*860240260 83/13*	*860270260 14/6T*	*1*
p-zerphenyl-d14 (Surr)	*T1*		*43 - 128*	*860240260 83/13*	*860270260 14/6T*	*1*

Lab Sample ID: LCS 570-314349/2-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314349

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	9.57	LR	ug/L		48	57 - 130
1,2-Dichlorobenzene	20.0	11.0		ug/L		55	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	15.5		ug/L		77	60 - 115
1,3-Dichlorobenzene	20.0	10.2		ug/L		51	37 - 120
1,4-Dichlorobenzene	20.0	10.9		ug/L		55	39 - 120
2,4,6-Trichlorophenol	20.0	17.1		ug/L		85	52 - 129
2,4-Dichlorophenol	20.0	14.8		ug/L		74	53 - 122
2,4-Dimethylphenol	20.0	13.9		ug/L		70	42 - 120
2,4-Dinitrophenol	20.0	17.7		ug/L		88	1 - 173
2,4-Dinitrotoluene	20.0	22.6		ug/L		113	48 - 127
2,6-Dinitrotoluene	20.0	21.2		ug/L		106	68 - 137
2-Chloronaphthalene	20.0	13.4		ug/L		67	65 - 120
2-Chlorophenol	20.0	14.9		ug/L		74	36 - 120
2-Nitrophenol	20.0	16.1		ug/L		80	45 - 167
3,3'-Dichlorobenzidine	20.0	19.8		ug/L		99	8 - 213
4,6-Dinitro-2-methylphenol	20.0	23.7		ug/L		118	53 - 130
4-Bromophenyl phenyl ether	20.0	15.1		ug/L		76	65 - 120
4-Chloro-3-methylphenol	20.0	17.8		ug/L		89	41 - 128
4-Chlorophenyl phenyl ether	20.0	15.9		ug/L		80	38 - 145
4-Nitrophenol	20.0	8.68		ug/L		43	13 - 129
Acenaphthene	20.0	14.7		ug/L		74	60 - 132
Acenaphthylene	20.0	17.7		ug/L		89	54 - 126
Anthracene	20.0	17.5		ug/L		87	43 - 120
Benzidine	20.0	6.32		ug/L		32	20 - 164
Benzo[a]anthracene	20.0	19.7		ug/L		98	42 - 133

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-314349/2-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314349

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzo[a]pyrene	20.0	19.0		ug/L		95	32 - 148
Benzo[b]fluoranthene	20.0	18.3		ug/L		92	42 - 140
Benzo[g,h,i]perylene	20.0	17.1		ug/L		86	1 - 195
Benzo[k]fluoranthene	20.0	20.2		ug/L		101	25 - 146
bis (2-chloroisopropyl) ether	20.0	15.7		ug/L		78	63 - 139
Bis(2-chloroethoxy)methane	20.0	13.5		ug/L		68	49 - 165
Bis(2-chloroethyl)ether	20.0	15.1		ug/L		76	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	24.4		ug/L		122	29 - 137
Butyl benzyl phthalate	20.0	23.8		ug/L		119	1 - 140
Chrysene	20.0	19.1		ug/L		95	44 - 140
Dibenz(a,h)anthracene	20.0	17.1		ug/L		85	1 - 200
Diethyl phthalate	20.0	20.1		ug/L		100	1 - 120
Dimethyl phthalate	20.0	19.2		ug/L		96	1 - 120
Di-n-butyl phthalate	20.0	20.9		ug/L		105	8 - 120
Di-n-octyl phthalate	20.0	26.9	LQ	ug/L		134	19 - 132
Fluoranthene	20.0	18.7		ug/L		94	43 - 121
Fluorene	20.0	16.6		ug/L		83	70 - 120
Hexachlorobenzene	20.0	15.9		ug/L		80	8 - 142
Hexachlorobutadiene	20.0	8.88		ug/L		44	38 - 120
Hexachlorocyclopentadiene	20.0	13.9		ug/L		70	43 - 145
Hexachloroethane	20.0	10.0	LR	ug/L		50	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	17.1		ug/L		85	1 - 151
Isophorone	20.0	15.3		ug/L		77	47 - 180
Naphthalene	20.0	10.3		ug/L		52	36 - 120
Nitrobenzene	20.0	12.8		ug/L		64	54 - 158
N-Nitrosodimethylamine	20.0	9.98		ug/L		50	20 - 120
N-Nitrosodi-n-propylamine	20.0	18.0		ug/L		90	14 - 198
N-Nitrosodiphenylamine	20.0	19.2		ug/L		96	65 - 133
Pentachlorophenol	20.0	10.3		ug/L		51	38 - 152
Phenanthrene	20.0	16.1		ug/L		81	65 - 120
Phenol	20.0	7.13		ug/L		36	17 - 120
Pyrene	20.0	18.1		ug/L		91	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,9-zrimro: ophenol	*b3*		*2T - 127*
2-Fluoromiphenyl (Surr)	*71*		*61 - 128*
2-Fluorophenol	*47*		*17 - 128*
Nitromenf ene-d3	*97*		*27 - 128*
Phenol-d9 (Surr)	*67*		*18 - 128*
p-zerphenyl-d14 (Surr)	*bb*		*43 - 128*

Lab Sample ID: LCSD 570-314349/3-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314349

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	20.0	9.64	LR	ug/L		48	57 - 130	1	30
1,2-Dichlorobenzene	20.0	10.8		ug/L		54	40 - 120	2	20

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-314349/3-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314349

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Diphenylhydrazine(as Azobenzene)	20.0	15.5		ug/L		77	60 - 115	0	30
1,3-Dichlorobenzene	20.0	10.2		ug/L		51	37 - 120	1	20
1,4-Dichlorobenzene	20.0	10.7		ug/L		53	39 - 120	2	20
2,4,6-Trichlorophenol	20.0	16.9		ug/L		84	52 - 129	1	35
2,4-Dichlorophenol	20.0	14.5		ug/L		72	53 - 122	2	30
2,4-Dimethylphenol	20.0	14.1		ug/L		70	42 - 120	1	35
2,4-Dinitrophenol	20.0	15.9		ug/L		80	1 - 173	10	79
2,4-Dinitrotoluene	20.0	21.2		ug/L		106	48 - 127	6	25
2,6-Dinitrotoluene	20.0	20.4		ug/L		102	68 - 137	4	29
2-Chloronaphthalene	20.0	13.3		ug/L		66	65 - 120	1	15
2-Chlorophenol	20.0	14.6		ug/L		73	36 - 120	2	37
2-Nitrophenol	20.0	16.0		ug/L		80	45 - 167	1	33
3,3'-Dichlorobenzidine	20.0	18.6		ug/L		93	8 - 213	6	65
4,6-Dinitro-2-methylphenol	20.0	21.8		ug/L		109	53 - 130	8	122
4-Bromophenyl phenyl ether	20.0	14.8		ug/L		74	65 - 120	2	26
4-Chloro-3-methylphenol	20.0	17.4		ug/L		87	41 - 128	2	44
4-Chlorophenyl phenyl ether	20.0	15.1		ug/L		75	38 - 145	5	36
4-Nitrophenol	20.0	7.93		ug/L		40	13 - 129	9	79
Acenaphthene	20.0	14.5		ug/L		72	60 - 132	2	29
Acenaphthylene	20.0	17.4		ug/L		87	54 - 126	2	45
Anthracene	20.0	17.3		ug/L		87	43 - 120	1	40
Benzidine	20.0	5.40		ug/L		27	20 - 164	16	30
Benzo[a]anthracene	20.0	18.9		ug/L		94	42 - 133	4	32
Benzo[a]pyrene	20.0	17.1		ug/L		86	32 - 148	10	43
Benzo[b]fluoranthene	20.0	16.4		ug/L		82	42 - 140	11	43
Benzo[g,h,i]perylene	20.0	17.2		ug/L		86	1 - 195	0	61
Benzo[k]fluoranthene	20.0	18.0		ug/L		90	25 - 146	12	38
bis (2-chloroisopropyl) ether	20.0	15.2		ug/L		76	63 - 139	3	46
Bis(2-chloroethoxy)methane	20.0	13.1		ug/L		65	49 - 165	3	32
Bis(2-chloroethyl)ether	20.0	15.0		ug/L		75	43 - 126	1	65
Bis(2-ethylhexyl) phthalate	20.0	23.0		ug/L		115	29 - 137	6	50
Butyl benzyl phthalate	20.0	23.1		ug/L		115	1 - 140	3	36
Chrysene	20.0	18.1		ug/L		90	44 - 140	5	53
Dibenz(a,h)anthracene	20.0	16.4		ug/L		82	1 - 200	4	75
Diethyl phthalate	20.0	19.3		ug/L		96	1 - 120	4	60
Dimethyl phthalate	20.0	18.5		ug/L		93	1 - 120	4	110
Di-n-butyl phthalate	20.0	18.9		ug/L		95	8 - 120	10	28
Di-n-octyl phthalate	20.0	24.4		ug/L		122	19 - 132	9	42
Fluoranthene	20.0	17.6		ug/L		88	43 - 121	6	40
Fluorene	20.0	15.8		ug/L		79	70 - 120	5	23
Hexachlorobenzene	20.0	15.2		ug/L		76	8 - 142	4	33
Hexachlorobutadiene	20.0	9.09		ug/L		45	38 - 120	2	38
Hexachlorocyclopentadiene	20.0	14.3		ug/L		72	43 - 145	3	22
Hexachloroethane	20.0	10.2	LR	ug/L		51	55 - 120	2	32
Indeno[1,2,3-cd]pyrene	20.0	16.3		ug/L		82	1 - 151	4	60
Isophorone	20.0	15.0		ug/L		75	47 - 180	2	56
Naphthalene	20.0	10.1		ug/L		51	36 - 120	2	39
Nitrobenzene	20.0	13.0		ug/L		65	54 - 158	1	37

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-314349/3-A
Matrix: Water
Analysis Batch: 314965

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314349

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-Nitrosodimethylamine			20.0	11.5		ug/L		57	20 - 120	14	21
N-Nitrosodi-n-propylamine			20.0	17.2		ug/L		86	14 - 198	5	52
N-Nitrosodiphenylamine			20.0	18.1		ug/L		90	65 - 133	6	20
Pentachlorophenol			20.0	9.33		ug/L		47	38 - 152	10	52
Phenanthrene			20.0	15.5		ug/L		78	65 - 120	4	24
Phenol			20.0	6.85		ug/L		34	17 - 120	4	39
Pyrene			20.0	18.5		ug/L		93	70 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,9-zrimro: ophenol	*b8*		*2T - 127*
2-Fluoromiphenyl (Surr)	*9b*		*61 - 128*
2-Fluorophenol	*47*		*17 - 128*
Nitromenf ene-d3	*99*		*27 - 128*
Phenol-d9 (Surr)	*63*		*18 - 128*
p-zerphenyl-d14 (Surr)	*181*		*43 - 128*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-315315/5
Matrix: Water
Analysis Batch: 315315

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/28/23 12:37	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-5ro: oBuoromenf ene (Surr)	*122*		*28 - 144*		*860 2T026 12/67*	*1*

Lab Sample ID: LCS 570-315315/6
Matrix: Water
Analysis Batch: 315315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	2270		ug/L		118	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-5ro: oBuoromenf ene (Surr)	*124*		*28 - 144*

Lab Sample ID: LCSD 570-315315/4
Matrix: Water
Analysis Batch: 315315

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	2260		ug/L		118	71 - 120	0	20

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCSD 570-315315/4
Matrix: Water
Analysis Batch: 315315

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-5ro: oBuoromenf ene (Surr)	126		28 - 144

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-315947/1-A
Matrix: Water
Analysis Batch: 316730

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315947

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/29/23 21:24	04/01/23 12:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	182		36 - 131	8602b026 21/24	8408 1026 12/19	1

Lab Sample ID: LCS 570-315947/2-A
Matrix: Water
Analysis Batch: 316730

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315947

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C10-C28	4.00	3.85		mg/L		96	65 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
n-Octacosane (Surr)	bb		36 - 131

Lab Sample ID: LCSD 570-315947/3-A
Matrix: Water
Analysis Batch: 316730

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315947

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28	4.00	4.19		mg/L		105	65 - 129	8	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
n-Octacosane (Surr)	183		36 - 131

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-314002/5
Matrix: Water
Analysis Batch: 314002

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/23/23 03:16	1

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography) (Continued)

Lab Sample ID: LCS 570-314002/6
Matrix: Water
Analysis Batch: 314002

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.4		ug/L		101	95 - 107		

Lab Sample ID: LCSD 570-314002/7
Matrix: Water
Analysis Batch: 314002

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.5		ug/L		101	95 - 107	0	20

Lab Sample ID: MB 570-313991/1-A
Matrix: Water
Analysis Batch: 314002

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/23/23 08:03	1

Lab Sample ID: LCS 570-313991/2-A
Matrix: Water
Analysis Batch: 314002

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium			50.1	50.3		ug/L		100	95 - 107		

Lab Sample ID: LCSD 570-313991/3-A
Matrix: Water
Analysis Batch: 314002

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium			50.1	50.6		ug/L		101	95 - 107	1	20

Lab Sample ID: 570-132140-1 MS
Matrix: Water
Analysis Batch: 314002

Client Sample ID: BGBMP0003_20230322
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Hexavalent chromium	ND		50.1	52.5		ug/L		105	85 - 121		

Lab Sample ID: 570-132140-1 MSD
Matrix: Water
Analysis Batch: 314002

Client Sample ID: BGBMP0003_20230322
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	ND		50.1	52.3		ug/L		104	85 - 121	0	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-314004/5
Matrix: Water
Analysis Batch: 314004

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/23/23 04:38	1
Fluoride	ND		0.10	0.046	mg/L			03/23/23 04:38	1
Sulfate	ND		1.0	0.24	mg/L			03/23/23 04:38	1

Lab Sample ID: LCS 570-314004/6
Matrix: Water
Analysis Batch: 314004

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.2		mg/L		100	90 - 110
Fluoride	2.50	2.59		mg/L		104	90 - 110
Sulfate	50.0	49.3		mg/L		99	90 - 110

Lab Sample ID: LCSD 570-314004/7
Matrix: Water
Analysis Batch: 314004

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	50.2		mg/L		100	90 - 110	0	15
Fluoride	2.50	2.58		mg/L		103	90 - 110	1	15
Sulfate	50.0	49.1		mg/L		98	90 - 110	0	15

Lab Sample ID: MB 570-314005/5
Matrix: Water
Analysis Batch: 314005

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/23/23 04:38	1
Nitrate as N	ND		0.10	0.020	mg/L			03/23/23 04:38	1

Lab Sample ID: LCS 570-314005/6
Matrix: Water
Analysis Batch: 314005

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.44		mg/L		98	90 - 110
Nitrate as N	5.00	5.07		mg/L		101	90 - 110

Lab Sample ID: LCSD 570-314005/7
Matrix: Water
Analysis Batch: 314005

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.46		mg/L		98	90 - 110	1	15
Nitrate as N	5.00	5.09		mg/L		102	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-314154/7
Matrix: Water
Analysis Batch: 314154

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/23/23 12:31	1

Lab Sample ID: LCS 570-314154/8
Matrix: Water
Analysis Batch: 314154

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	24.3		ug/L		97	85 - 115		

Lab Sample ID: LCSD 570-314154/9
Matrix: Water
Analysis Batch: 314154

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.4		ug/L		98	85 - 115	0	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: 570-132140-1 MS
Matrix: Water
Analysis Batch: 314696

Client Sample ID: BGBMP0003_20230322
Prep Type: Total Recoverable
Prep Batch: 314371

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	50	J,DX	500	553		ug/L		101	80 - 120		

Lab Sample ID: 570-132140-1 MSD
Matrix: Water
Analysis Batch: 314696

Client Sample ID: BGBMP0003_20230322
Prep Type: Total Recoverable
Prep Batch: 314371

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	50	J,DX	500	555		ug/L		101	80 - 120	0	20

Lab Sample ID: MB 570-314176/1-A
Matrix: Water
Analysis Batch: 315061

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		500	3.5	ug/L			03/27/23 11:43	1

Lab Sample ID: LCS 570-314176/2-A
Matrix: Water
Analysis Batch: 315061

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			500	467	J,DX	ug/L		93	85 - 115		

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 570-314176/3-A
Matrix: Water
Analysis Batch: 315061

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			500	466	J,DX	ug/L		93	85 - 115	0	20

Lab Sample ID: 570-132140-1 MS
Matrix: Water
Analysis Batch: 315061

Client Sample ID: BGBMP0003_20230322
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	45	J,DX BU	500	511		ug/L		93	80 - 120		

Lab Sample ID: 570-132140-1 MSD
Matrix: Water
Analysis Batch: 315061

Client Sample ID: BGBMP0003_20230322
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	45	J,DX BU	500	508		ug/L		93	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-314378/1-A
Matrix: Water
Analysis Batch: 314523

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 314378

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		03/24/23 07:07	03/24/23 12:12	1
Silver	ND		1.0	0.23	ug/L		03/24/23 07:07	03/24/23 12:12	1
Arsenic	ND		1.0	0.16	ug/L		03/24/23 07:07	03/24/23 12:12	1
Beryllium	ND		0.50	0.26	ug/L		03/24/23 07:07	03/24/23 12:12	1
Cadmium	ND		1.0	0.13	ug/L		03/24/23 07:07	03/24/23 12:12	1
Chromium	ND		2.0	0.14	ug/L		03/24/23 07:07	03/24/23 12:12	1
Cobalt	ND		1.0	0.14	ug/L		03/24/23 07:07	03/24/23 12:12	1
Copper	ND		2.0	0.32	ug/L		03/24/23 07:07	03/24/23 12:12	1
Iron	ND		20	3.7	ug/L		03/24/23 07:07	03/24/23 12:12	1
Manganese	ND		1.0	0.41	ug/L		03/24/23 07:07	03/24/23 12:12	1
Lead	ND		1.0	0.12	ug/L		03/24/23 07:07	03/24/23 12:12	1
Antimony	ND		2.0	0.36	ug/L		03/24/23 07:07	03/24/23 12:12	1
Zinc	ND		20	2.8	ug/L		03/24/23 07:07	03/24/23 12:12	1
Selenium	ND		2.0	0.52	ug/L		03/24/23 07:07	03/24/23 12:12	1
Thallium	ND		1.0	0.11	ug/L		03/24/23 07:07	03/24/23 12:12	1

Lab Sample ID: MB 570-314378/1-A
Matrix: Water
Analysis Batch: 314974

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 314378

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		1.0	0.17	ug/L		03/24/23 07:07	03/27/23 09:38	1
Nickel	ND		2.0	0.17	ug/L		03/24/23 07:07	03/27/23 09:38	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-314378/2-A
Matrix: Water
Analysis Batch: 314523

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 314378

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	78.1		ug/L		98	85 - 115
Silver	80.0	78.5		ug/L		98	85 - 115
Arsenic	80.0	77.5		ug/L		97	85 - 115
Beryllium	80.0	79.7		ug/L		100	85 - 115
Cadmium	80.0	78.9		ug/L		99	85 - 115
Chromium	80.0	78.3		ug/L		98	85 - 115
Cobalt	80.0	76.1		ug/L		95	85 - 115
Copper	80.0	75.4		ug/L		94	85 - 115
Iron	800	797		ug/L		100	85 - 115
Manganese	80.0	79.3		ug/L		99	85 - 115
Lead	80.0	71.3		ug/L		89	85 - 115
Antimony	80.0	75.4		ug/L		94	85 - 115
Zinc	80.0	77.2		ug/L		97	85 - 115
Selenium	80.0	78.3		ug/L		98	85 - 115
Thallium	80.0	77.0		ug/L		96	85 - 115

Lab Sample ID: LCS 570-314378/2-A
Matrix: Water
Analysis Batch: 314974

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 314378

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	80.0	79.5		ug/L		99	85 - 115
Nickel	80.0	80.3		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-314378/3-A
Matrix: Water
Analysis Batch: 314523

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 314378

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	79.9		ug/L		100	85 - 115	2	20
Silver	80.0	79.9		ug/L		100	85 - 115	2	20
Arsenic	80.0	79.5		ug/L		99	85 - 115	3	20
Beryllium	80.0	79.9		ug/L		100	85 - 115	0	20
Cadmium	80.0	80.5		ug/L		101	85 - 115	2	20
Chromium	80.0	80.3		ug/L		100	85 - 115	3	20
Cobalt	80.0	78.9		ug/L		99	85 - 115	4	20
Copper	80.0	78.5		ug/L		98	85 - 115	4	20
Iron	800	824		ug/L		103	85 - 115	3	20
Manganese	80.0	81.8		ug/L		102	85 - 115	3	20
Lead	80.0	76.3		ug/L		95	85 - 115	7	20
Antimony	80.0	79.8		ug/L		100	85 - 115	6	20
Zinc	80.0	78.6		ug/L		98	85 - 115	2	20
Selenium	80.0	81.2		ug/L		101	85 - 115	4	20
Thallium	80.0	79.8		ug/L		100	85 - 115	4	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-314378/3-A
Matrix: Water
Analysis Batch: 314974

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 314378

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Barium			80.0	80.9		ug/L		101	85 - 115	2	20
Nickel			80.0	81.8		ug/L		102	85 - 115	2	20

Lab Sample ID: 570-132140-1 MS
Matrix: Water
Analysis Batch: 314523

Client Sample ID: BGBMP0003_20230322
Prep Type: Total Recoverable
Prep Batch: 314378

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	180		80.0	282	LM	ug/L		131	80 - 120
Silver	ND		80.0	79.4		ug/L		99	80 - 120
Arsenic	0.55	J,DX	80.0	81.5		ug/L		101	80 - 120
Beryllium	ND		80.0	79.0		ug/L		99	80 - 120
Cadmium	ND		80.0	80.7		ug/L		101	80 - 120
Chromium	0.45	J,DX	80.0	79.4		ug/L		99	80 - 120
Cobalt	0.20	J,DX	80.0	78.4		ug/L		98	80 - 120
Copper	1.4	J,DX	80.0	79.3		ug/L		97	80 - 120
Iron	200		800	1010		ug/L		101	80 - 120
Manganese	9.5		80.0	90.1		ug/L		101	80 - 120
Lead	0.19	J,DX	80.0	76.3		ug/L		95	80 - 120
Antimony	ND		80.0	83.2		ug/L		104	80 - 120
Zinc	ND		80.0	79.7		ug/L		100	80 - 120
Selenium	0.62	J,DX	80.0	82.9		ug/L		103	80 - 120
Thallium	ND		80.0	79.8		ug/L		100	80 - 120

Lab Sample ID: 570-132140-1 MS
Matrix: Water
Analysis Batch: 314974

Client Sample ID: BGBMP0003_20230322
Prep Type: Total Recoverable
Prep Batch: 314378

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	19		80.0	98.8		ug/L		100	80 - 120
Nickel	1.8	J,DX	80.0	82.0		ug/L		100	80 - 120

Lab Sample ID: 570-132140-1 MSD
Matrix: Water
Analysis Batch: 314523

Client Sample ID: BGBMP0003_20230322
Prep Type: Total Recoverable
Prep Batch: 314378

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	180		80.0	280	LM	ug/L		128	80 - 120	1	20
Silver	ND		80.0	77.6		ug/L		97	80 - 120	2	20
Arsenic	0.55	J,DX	80.0	77.7		ug/L		96	80 - 120	5	20
Beryllium	ND		80.0	83.3		ug/L		104	80 - 120	5	20
Cadmium	ND		80.0	78.3		ug/L		98	80 - 120	3	20
Chromium	0.45	J,DX	80.0	78.6		ug/L		98	80 - 120	1	20
Cobalt	0.20	J,DX	80.0	77.7		ug/L		97	80 - 120	1	20
Copper	1.4	J,DX	80.0	78.3		ug/L		96	80 - 120	1	20
Iron	200		800	985		ug/L		98	80 - 120	2	20
Manganese	9.5		80.0	88.8		ug/L		99	80 - 120	1	20
Lead	0.19	J,DX	80.0	73.8		ug/L		92	80 - 120	3	20
Antimony	ND		80.0	82.5		ug/L		103	80 - 120	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-132140-1 MSD
Matrix: Water
Analysis Batch: 314523

Client Sample ID: BGBMP0003_20230322
Prep Type: Total Recoverable
Prep Batch: 314378

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Zinc	ND		80.0	77.0		ug/L		96	80 - 120	3	20
Selenium	0.62	J,DX	80.0	78.7		ug/L		98	80 - 120	5	20
Thallium	ND		80.0	76.8		ug/L		96	80 - 120	4	20

Lab Sample ID: 570-132140-1 MSD
Matrix: Water
Analysis Batch: 314974

Client Sample ID: BGBMP0003_20230322
Prep Type: Total Recoverable
Prep Batch: 314378

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Barium	19		80.0	97.3		ug/L		98	80 - 120	2	20
Nickel	1.8	J,DX	80.0	80.3		ug/L		98	80 - 120	2	20

Lab Sample ID: MB 570-314134/1-A
Matrix: Water
Analysis Batch: 314184

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			03/23/23 12:26	1
Silver	ND		1.0	0.23	ug/L			03/23/23 12:26	1
Arsenic	ND		1.0	0.16	ug/L			03/23/23 12:26	1
Barium	ND		1.0	0.17	ug/L			03/23/23 12:26	1
Beryllium	ND		0.50	0.26	ug/L			03/23/23 12:26	1
Cadmium	ND		1.0	0.13	ug/L			03/23/23 12:26	1
Chromium	ND		2.0	0.14	ug/L			03/23/23 12:26	1
Cobalt	ND		1.0	0.14	ug/L			03/23/23 12:26	1
Copper	ND		2.0	0.32	ug/L			03/23/23 12:26	1
Iron	ND		20	3.7	ug/L			03/23/23 12:26	1
Manganese	ND		1.0	0.41	ug/L			03/23/23 12:26	1
Nickel	ND		2.0	0.17	ug/L			03/23/23 12:26	1
Lead	ND		1.0	0.12	ug/L			03/23/23 12:26	1
Antimony	ND		2.0	0.36	ug/L			03/23/23 12:26	1
Zinc	ND		20	2.8	ug/L			03/23/23 12:26	1
Selenium	ND		2.0	0.52	ug/L			03/23/23 12:26	1
Thallium	ND		1.0	0.11	ug/L			03/23/23 12:26	1

Lab Sample ID: LCS 570-314134/2-A
Matrix: Water
Analysis Batch: 314184

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	80.9		ug/L		101	85 - 115
Silver	80.0	78.8		ug/L		98	85 - 115
Arsenic	80.0	78.8		ug/L		98	85 - 115
Barium	80.0	78.1		ug/L		98	85 - 115
Beryllium	80.0	75.1		ug/L		94	85 - 115
Cadmium	80.0	78.1		ug/L		98	85 - 115
Chromium	80.0	78.8		ug/L		99	85 - 115
Cobalt	80.0	76.7		ug/L		96	85 - 115
Copper	80.0	76.3		ug/L		95	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-314134/2-A
Matrix: Water
Analysis Batch: 314184

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	800	811		ug/L		101	85 - 115
Manganese	80.0	80.1		ug/L		100	85 - 115
Nickel	80.0	75.1		ug/L		94	85 - 115
Lead	80.0	72.9		ug/L		91	85 - 115
Antimony	80.0	78.4		ug/L		98	85 - 115
Zinc	80.0	77.5		ug/L		97	85 - 115
Selenium	80.0	76.5		ug/L		96	85 - 115
Thallium	80.0	78.0		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-314134/3-A
Matrix: Water
Analysis Batch: 314184

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	82.1		ug/L		103	85 - 115	1	20
Silver	80.0	78.4		ug/L		98	85 - 115	1	20
Arsenic	80.0	77.7		ug/L		97	85 - 115	1	20
Barium	80.0	78.1		ug/L		98	85 - 115	0	20
Beryllium	80.0	77.9		ug/L		97	85 - 115	4	20
Cadmium	80.0	78.8		ug/L		99	85 - 115	1	20
Chromium	80.0	78.6		ug/L		98	85 - 115	0	20
Cobalt	80.0	77.0		ug/L		96	85 - 115	0	20
Copper	80.0	77.9		ug/L		97	85 - 115	2	20
Iron	800	818		ug/L		102	85 - 115	1	20
Manganese	80.0	79.9		ug/L		100	85 - 115	0	20
Nickel	80.0	76.4		ug/L		95	85 - 115	2	20
Lead	80.0	76.3		ug/L		95	85 - 115	4	20
Antimony	80.0	78.1		ug/L		98	85 - 115	0	20
Zinc	80.0	78.1		ug/L		98	85 - 115	1	20
Selenium	80.0	80.1		ug/L		100	85 - 115	5	20
Thallium	80.0	80.6		ug/L		101	85 - 115	3	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-315295/1-A
Matrix: Water
Analysis Batch: 316033

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315295

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/28/23 08:45	03/30/23 08:49	1

Lab Sample ID: LCS 570-315295/2-A
Matrix: Water
Analysis Batch: 316033

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	38.4		mg/L		96	78 - 114

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCSD 570-315295/3-A
Matrix: Water
Analysis Batch: 316033

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315295

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	37.9		mg/L		95	78 - 114	1	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-316971/5-B
Matrix: Water
Analysis Batch: 317033

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316971

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		04/03/23 10:18	04/03/23 12:09	1

Lab Sample ID: LCS 570-316971/6-B
Matrix: Water
Analysis Batch: 317033

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316971

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.492		mg/L		98	90 - 110		

Lab Sample ID: LCSD 570-316971/7-B
Matrix: Water
Analysis Batch: 317033

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 316971

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.481		mg/L		96	90 - 110	2	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-315871/11
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/29/23 13:56	1

Lab Sample ID: LCS 570-315871/12
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			250	249		ug/L		100	90 - 110		

Lab Sample ID: LCSD 570-315871/13
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	249		ug/L		100	90 - 110	0	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: MRL 570-315871/10
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.82	J,DX	ug/L		96	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-314198/1
Matrix: Water
Analysis Batch: 314198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		99.2	99.0 - 101.0

Lab Sample ID: LCSSRM 570-314198/2
Matrix: Water
Analysis Batch: 314198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		100.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-314198/3
Matrix: Water
Analysis Batch: 314198

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Lab Sample ID: 570-132140-1 DU
Matrix: Water
Analysis Batch: 314198

Client Sample ID: BGBMP0003_20230322
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	2.4		2.5		NTU		1	25

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-316225/10
Matrix: Water
Analysis Batch: 316225

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/30/23 11:38	1

Lab Sample ID: MB 570-316225/42
Matrix: Water
Analysis Batch: 316225

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/30/23 14:48	1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-315594/1
Matrix: Water
Analysis Batch: 315594

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/28/23 21:51	1

Lab Sample ID: LCS 570-315594/2
Matrix: Water
Analysis Batch: 315594

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1030		mg/L		103	84 - 108

Lab Sample ID: LCSD 570-315594/3
Matrix: Water
Analysis Batch: 315594

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1040		mg/L		104	84 - 108	1	10

Lab Sample ID: 570-132140-1 DU
Matrix: Water
Analysis Batch: 315594

Client Sample ID: BGBMP0003_20230322
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	110		113		mg/L		5	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-315496/1
Matrix: Water
Analysis Batch: 315496

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/28/23 16:55	1

Lab Sample ID: LCS 570-315496/2
Matrix: Water
Analysis Batch: 315496

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.0		mg/L		96	77 - 116

Lab Sample ID: LCSD 570-315496/3
Matrix: Water
Analysis Batch: 315496

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	102		mg/L		102	77 - 116	6	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 570-314145/1-A
Matrix: Water
Analysis Batch: 315483

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314145

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L		03/23/23 11:21	03/23/23 11:26	1

Lab Sample ID: LCS 570-314145/2-A
Matrix: Water
Analysis Batch: 315483

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314145

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	208		mg/L		105	84.6 - 115.4

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-317141/4
Matrix: Water
Analysis Batch: 317141

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			04/03/23 14:42	1

Lab Sample ID: LCS 570-317141/5
Matrix: Water
Analysis Batch: 317141

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon, Total Organic	5.03	4.82		mg/L		96	85 - 115

Lab Sample ID: LCSD 570-317141/6
Matrix: Water
Analysis Batch: 317141

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic	5.03	4.91		mg/L		98	85 - 115	2	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-314207/5-A
Matrix: Water
Analysis Batch: 314262

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314207

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/23/23 14:20	03/23/23 15:24	1

Lab Sample ID: LCS 570-314207/6-A
Matrix: Water
Analysis Batch: 314262

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314207

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
MBAS	0.500	0.527		mg/L		105	83 - 122

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: LCSD 570-314207/7-A
Matrix: Water
Analysis Batch: 314262

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314207

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.531		mg/L		106	83 - 122	1	10

Lab Sample ID: 570-132140-1 MS
Matrix: Water
Analysis Batch: 314262

Client Sample ID: BGBMP0003_20230322
Prep Type: Total/NA
Prep Batch: 314207

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS	0.063	J,DX	0.500	0.564		mg/L		100	64 - 141		

Lab Sample ID: 570-132140-1 MSD
Matrix: Water
Analysis Batch: 314262

Client Sample ID: BGBMP0003_20230322
Prep Type: Total/NA
Prep Batch: 314207

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.063	J,DX	0.500	0.568		mg/L		101	64 - 141	1	10

GC/MS VOA

Analysis Batch: 313824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	624.1	
MB 570-313824/6	Method Blank	Total/NA	Water	624.1	
LCS 570-313824/1003	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-313824/4	Lab Control Sample Dup	Total/NA	Water	624.1	

Analysis Batch: 313870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	8260B SIM	
570-132140-4	TB_20230322	Total/NA	Water	8260B SIM	
MB 570-313870/9	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-313870/5	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-313870/6	Lab Control Sample Dup	Total/NA	Water	8260B SIM	

Analysis Batch: 314233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-2	TB_20230322-2	Total/NA	Water	624.1	
MB 570-314233/7	Method Blank	Total/NA	Water	624.1	
LCS 570-314233/1004	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-314233/5	Lab Control Sample Dup	Total/NA	Water	624.1	

GC/MS Semi VOA

Prep Batch: 314349

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	625	
MB 570-314349/1-A	Method Blank	Total/NA	Water	625	
LCS 570-314349/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-314349/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 314965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-314349/1-A	Method Blank	Total/NA	Water	625.1 SIM	314349
LCS 570-314349/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	314349
LCSD 570-314349/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	314349

Analysis Batch: 315862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	625.1 SIM	314349

GC VOA

Analysis Batch: 315315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	8015B	
MB 570-315315/5	Method Blank	Total/NA	Water	8015B	
LCS 570-315315/6	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-315315/4	Lab Control Sample Dup	Total/NA	Water	8015B	

GC Semi VOA

Prep Batch: 315947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	3510C	
MB 570-315947/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-315947/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-315947/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 316730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	8015B	315947
MB 570-315947/1-A	Method Blank	Total/NA	Water	8015B	315947
LCS 570-315947/2-A	Lab Control Sample	Total/NA	Water	8015B	315947
LCSD 570-315947/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	315947

HPLC/IC

Filtration Batch: 313991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	Filtration	
MB 570-313991/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-313991/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-313991/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-132140-1 MS	BGBMP0003_20230322	Dissolved	Water	Filtration	
570-132140-1 MSD	BGBMP0003_20230322	Dissolved	Water	Filtration	

Analysis Batch: 314002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	218.6	313991
570-132140-1	BGBMP0003_20230322	Total/NA	Water	218.6	
MB 570-313991/1-A	Method Blank	Dissolved	Water	218.6	313991
MB 570-314002/5	Method Blank	Total/NA	Water	218.6	
LCS 570-313991/2-A	Lab Control Sample	Dissolved	Water	218.6	313991
LCS 570-314002/6	Lab Control Sample	Total/NA	Water	218.6	
LCSD 570-313991/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	313991
LCSD 570-314002/7	Lab Control Sample Dup	Total/NA	Water	218.6	
570-132140-1 MS	BGBMP0003_20230322	Dissolved	Water	218.6	313991
570-132140-1 MSD	BGBMP0003_20230322	Dissolved	Water	218.6	313991

Analysis Batch: 314004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	300.0	
MB 570-314004/5	Method Blank	Total/NA	Water	300.0	
LCS 570-314004/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-314004/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 314005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	300.0	
MB 570-314005/5	Method Blank	Total/NA	Water	300.0	
LCS 570-314005/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-314005/7	Lab Control Sample Dup	Total/NA	Water	300.0	

HPLC/IC

Analysis Batch: 314154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	314.0	
MB 570-314154/7	Method Blank	Total/NA	Water	314.0	
LCS 570-314154/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-314154/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 314475

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	NO2NO3 Calc	

Metals

Filtration Batch: 314134

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	Filtration	
MB 570-314134/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-314134/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-314134/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Filtration Batch: 314176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	Filtration	
MB 570-314176/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-314176/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-314176/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-132140-1 MS	BGBMP0003_20230322	Dissolved	Water	Filtration	
570-132140-1 MSD	BGBMP0003_20230322	Dissolved	Water	Filtration	

Analysis Batch: 314184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	200.8	314134
MB 570-314134/1-A	Method Blank	Dissolved	Water	200.8	314134
LCS 570-314134/2-A	Lab Control Sample	Dissolved	Water	200.8	314134
LCSD 570-314134/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	314134

Prep Batch: 314371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total Recoverable	Water	200.7	
570-132140-1 MS	BGBMP0003_20230322	Total Recoverable	Water	200.7	
570-132140-1 MSD	BGBMP0003_20230322	Total Recoverable	Water	200.7	

Prep Batch: 314378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total Recoverable	Water	200.8	
MB 570-314378/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-314378/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-314378/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-132140-1 MS	BGBMP0003_20230322	Total Recoverable	Water	200.8	
570-132140-1 MSD	BGBMP0003_20230322	Total Recoverable	Water	200.8	

Metals

Analysis Batch: 314523

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total Recoverable	Water	200.8	314378
MB 570-314378/1-A	Method Blank	Total Recoverable	Water	200.8	314378
LCS 570-314378/2-A	Lab Control Sample	Total Recoverable	Water	200.8	314378
LCSD 570-314378/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	314378
570-132140-1 MS	BGBMP0003_20230322	Total Recoverable	Water	200.8	314378
570-132140-1 MSD	BGBMP0003_20230322	Total Recoverable	Water	200.8	314378

Analysis Batch: 314696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total Recoverable	Water	200.7 Rev 4.4	314371
570-132140-1 MS	BGBMP0003_20230322	Total Recoverable	Water	200.7 Rev 4.4	314371
570-132140-1 MSD	BGBMP0003_20230322	Total Recoverable	Water	200.7 Rev 4.4	314371

Analysis Batch: 314974

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total Recoverable	Water	200.8	314378
MB 570-314378/1-A	Method Blank	Total Recoverable	Water	200.8	314378
LCS 570-314378/2-A	Lab Control Sample	Total Recoverable	Water	200.8	314378
LCSD 570-314378/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	314378
570-132140-1 MS	BGBMP0003_20230322	Total Recoverable	Water	200.8	314378
570-132140-1 MSD	BGBMP0003_20230322	Total Recoverable	Water	200.8	314378

Analysis Batch: 315061

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	200.7 Rev 4.4	314176
MB 570-314176/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	314176
LCS 570-314176/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	314176
LCSD 570-314176/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	314176
570-132140-1 MS	BGBMP0003_20230322	Dissolved	Water	200.7 Rev 4.4	314176
570-132140-1 MSD	BGBMP0003_20230322	Dissolved	Water	200.7 Rev 4.4	314176

General Chemistry

Prep Batch: 314145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	BOD Prep	
USB 570-314145/1-A	Method Blank	Total/NA	Water	BOD Prep	
LCS 570-314145/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	

Analysis Batch: 314198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	SM 2130B	
LCSSRM 570-314198/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-314198/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-314198/3	Lab Control Sample	Total/NA	Water	SM 2130B	
570-132140-1 DU	BGBMP0003_20230322	Total/NA	Water	SM 2130B	

Analysis Batch: 314206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	SM 2540F	

General Chemistry

Prep Batch: 314207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	SM 5540C	
MB 570-314207/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-314207/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-314207/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	
570-132140-1 MS	BGBMP0003_20230322	Total/NA	Water	SM 5540C	
570-132140-1 MSD	BGBMP0003_20230322	Total/NA	Water	SM 5540C	

Analysis Batch: 314262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	SM 5540C	314207
MB 570-314207/5-A	Method Blank	Total/NA	Water	SM 5540C	314207
LCS 570-314207/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	314207
LCSD 570-314207/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	314207
570-132140-1 MS	BGBMP0003_20230322	Total/NA	Water	SM 5540C	314207
570-132140-1 MSD	BGBMP0003_20230322	Total/NA	Water	SM 5540C	314207

Analysis Batch: 314522

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	218.6 CR3	

Prep Batch: 315295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	1664A	
MB 570-315295/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-315295/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-315295/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 315483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	SM 5210B	314145
USB 570-314145/1-A	Method Blank	Total/NA	Water	SM 5210B	314145
LCS 570-314145/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	314145

Analysis Batch: 315496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	SM 2540D	
MB 570-315496/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-315496/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-315496/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 315594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	SM 2540C	
MB 570-315594/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-315594/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-315594/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
570-132140-1 DU	BGBMP0003_20230322	Total/NA	Water	SM 2540C	

Analysis Batch: 315871

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	Kelada 01	

General Chemistry (Continued)

Analysis Batch: 315871 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-315871/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-315871/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-315871/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-315871/10	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 316033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	1664A	315295
MB 570-315295/1-A	Method Blank	Total/NA	Water	1664A	315295
LCS 570-315295/2-A	Lab Control Sample	Total/NA	Water	1664A	315295
LCSD 570-315295/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	315295

Analysis Batch: 316225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	SM 2510B	
MB 570-316225/10	Method Blank	Total/NA	Water	SM 2510B	
MB 570-316225/42	Method Blank	Total/NA	Water	SM 2510B	

Prep Batch: 316971

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	Distill/Ammonia	
MB 570-316971/5-B	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-316971/6-B	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-316971/7-B	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 317033

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	350.1	316971
MB 570-316971/5-B	Method Blank	Total/NA	Water	350.1	316971
LCS 570-316971/6-B	Lab Control Sample	Total/NA	Water	350.1	316971
LCSD 570-316971/7-B	Lab Control Sample Dup	Total/NA	Water	350.1	316971

Analysis Batch: 317141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	SM 5310D	
MB 570-317141/4	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-317141/5	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-317141/6	Lab Control Sample Dup	Total/NA	Water	SM 5310D	

Analysis Batch: 317495

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	218.6 CR3	

Geotechnical

Analysis Batch: 317524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	D4464	
LCS 570-317524/17	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-317524/19	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Client Sample ID: BGBMP0003_20230322

Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	313824	03/23/23 00:17	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	313870	03/23/23 01:10	UJHB	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			995.9 mL	2 mL	314349	03/24/23 05:15	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	315862	03/31/23 01:05	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	315315	03/28/23 19:29	P1R	EET CAL 4
	Instrument ID: GC73									
Total/NA	Prep	3510C			256.6 mL	2.5 mL	315947	03/29/23 21:24	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	316730	04/01/23 19:04	N1A	EET CAL 4
	Instrument ID: GC48									
Dissolved	Filtration	Filtration			100 mL	100 mL	313991	03/23/23 01:35	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	314002	03/23/23 08:16	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	314002	03/23/23 04:28	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	314004	03/23/23 09:13	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0		1	4 mL	4 mL	314005	03/23/23 09:13	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	314.0		1	4 mL	4 mL	314154	03/23/23 20:30	PS	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			314475	03/24/23 10:42	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Dissolved	Filtration	Filtration			50 mL	50 mL	314176	03/23/23 13:03	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			315061	03/27/23 11:51	K1UV	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	314371	03/24/23 06:38	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			314696	03/24/23 18:47	P1R	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	314134	03/23/23 10:49	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			314184	03/23/23 12:41	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	314378	03/24/23 07:07	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			314523	03/24/23 10:21	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	314378	03/24/23 07:07	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			314974	03/27/23 09:56	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total/NA	Prep	1664A			1044 mL	1000 mL	315295	03/28/23 08:45	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			316033	03/30/23 08:49	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Dissolved	Analysis	218.6 CR3		1			314522	03/24/23 12:34	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Client Sample ID: BGBMP0003_20230322

Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	218.6 CR3		1			317495	04/04/23 22:30	URMH	EET CAL 4
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	316971	04/03/23 10:18	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	317033	04/03/23 12:38	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	315871	03/29/23 15:41	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			314198	03/23/23 13:53	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			316225	03/30/23 16:35	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	315594	03/28/23 21:51	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	315496	03/28/23 16:55	UWCT	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	314206	03/23/23 14:13	TXA8	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	BOD Prep					314145	03/23/23 11:21	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	315483	03/23/23 12:11	TN8Z	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	SM 5310D		8	40 mL	40 mL	317141	04/04/23 02:38	UAPD	EET CAL 4
	Instrument ID: TOC12									
Total/NA	Prep	SM 5540C			100 mL	100 mL	314207	03/23/23 14:20	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	314262	03/23/23 15:29	TXA8	EET CAL 4
	Instrument ID: UV9									
Total/NA	Analysis	D4464		1			317524	04/05/23 07:43	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB_20230322-2

Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	314233	03/23/23 19:10	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Client Sample ID: TB_20230322

Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	313870	03/23/23 00:44	UJHB	EET CAL 4
	Instrument ID: GCMSFFF									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-134190-1

Method	Method Description	Protocol	Laboratory
649.1	2olatile Vrganic CoOmopndu s(C/MSG	EPA	EE) CAL 9
W460B SIM	2olatile Vrganic CoOmopndu s(C/MSG	ST W96	EE) CAL 9
645.1 SIM	SeOi8olatile Vrganic CoOmopndu (C/MS sSIMG	EPA	EE) CAL 9
W015B	(auoline Range Vrganicu - s(CG	ST W96	EE) CAL 9
W015B	Dieuel Range Vrganicu sDRVGs(CG	ST W96	EE) CAL 9
41W6	ChroOipO, Heva8alent slon ChroOatogramhyG	EPA	EE) CAL 9
300.0	Anionu, Ion ChroOatogramhy	EPA	EE) CAL 9
319.0	Perchlorate slCG	EPA	EE) CAL 9
x V4x V3 Calc	x itrogen, x itrate-x itrite	EPA	EE) CAL 9
400.7 Re8 9.9	Metalu slCPG	EPA	EE) CAL 9
400.W	Metalu slCP/MSG	EPA	EE) CAL 9
1669A	HEM and S( ) -HEM	1669A	EE) CAL 9
41W6 CR3	ChroOipO,) ri8alent sCalcplationG	EPA	EE) CAL 9
350.1	x itrogen, AOOonia	EPA	EE) CAL 9
Nelada 01	Cyanide,) otal, Acid Diuuociable and) hiocyanate	EPA	EE) CAL 9
SM 4130B	) prbidity	SM	EE) CAL 9
SM 4510B	Condpcti8ity, SmeciKc Condpctance	SM	EE) CAL 9
SM 4590C	Solidu,) otal Diuuol8ed s) DSG	SM	EE) CAL 9
SM 4590D	Solidu,) otal Spumended s) SSG	SM	EE) CAL 9
SM 4590F	Solidu, Settleable	SM	EE) CAL 9
SM 5410B	BVD, 5-Day	SM	EE) CAL 9
SM 5310D	Vrganic Carbon,) otal s) VCG	SM	EE) CAL 9
SM 5590C	Methylene Blpe Acti8e Spbutanceu sMBASG	SM	EE) CAL 9
D9969	Particle Sif e Diutribption oKCatalytic Material s Lauer light ucatteringG	AS) M	EE) CAL 9
1669A	HEM and S( ) -HEM sAzpeopuG	1669A	EE) CAL 9
400.7	Premaration,) otal Reco8erable Metalu	EPA	EE) CAL 9
400.W	Premaration,) otal Reco8erable Metalu	EPA	EE) CAL 9
3510C	Lizpid-Lizpid Evtraction sSemaratory FpnnelG	ST W96	EE) CAL 9
5030C	Pprge and) ram	ST W96	EE) CAL 9
645	Lizpid-Lizpid Evtraction	EPA	EE) CAL 9
BVD Prem	Premaration, BVD	SM	EE) CAL 9
Diutill/AOOonia	Diutillation, AOOonia	x one	EE) CAL 9
Filtration	SaOmle Filtration	x one	EE) CAL 9
SM 5590C	Premaration, Methylene Blpe Acti8e Spbutanceu sMBASG	SM	EE) CAL 9

Protocol References:

1669A q EPA-W41-=W004
AS) M q AS) M International
EPA q US En8ironOental Protection Agency
x one q x one
SM q "Standard Methodu For) he EvaOination VKT ater And T autewater"
ST W96 q ") eut Methodu For E8alpating Solid T aute, Phyuical/CheOical Methodu",) hird Edition, x o8eOber 1=W6 And Itu Umdateu.

Laboratory References:

EE) CAL 9 q EprokKnu Calucience) putin, 4W01 Dow A8enpe,) putin, CA =47W0,) EL s719GW=5-59=9

EprokKnu Calucience

4/6/2023

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132140-1	BGBMP0003_20230322	Water	03/22/23 09:20	03/22/23 18:25
570-132140-2	TB_20230322-2	Water	03/22/23 09:20	03/22/23 18:25
570-132140-4	TB_20230322	Water	03/22/23 09:20	03/22/23 18:25

VOCs - remove A+A.
KRM 3/23/23

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

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2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only ~~A+A~~+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315MOD/WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)
								2-500mL Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	2-40mL VOA	2-1L Amber	2-500mL Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	2-500mL Poly
1 — BGBMP0003_20230322	3-22-23	0920	G	WM	~~36~~ 38	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3 — TB_20230322	3-22-23	0920	TB	WM	3	N	N				X										~~X~~				
4 — TB_20230322	3-22-23	0920	TB	WM	3	N	N														X				

Revised COC received from Katherine Miller (H&A) on 03/23/23 at 09:37am.
- Virendra (ECI)

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dalla Costa	Company: H+A 13:52	Date/Time: 3-22-23	Received: EC		Date/Time: 3/23/23 1352
Relinquished by:	Company: EC	Date/Time: 3/23/23 1825	Received:		Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/6/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

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Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9906	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl, F, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Hach Labs in Hacienda Heights, CA	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221) Enthalpy Analytical in Orange, CA
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 L ~~1-250mL Poly~~ Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile
1 – BGBMP0003_20230322	3-22-23	0920	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2 – TB_20230322-2	3-22-23	0920	TB	WM	3	N	N														x			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #
Time of Readings 0920
DO (mg/L) 16.83
pH 7.93
Temp (°C/°F) 9.81 °C
TRC (mg/L)
Checked by: MMD
Date/Time: 3-22-23 1200

570-132140 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

	1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by: Michelle Dalbelet	Company: H+A	Date/Time: 3-22-23 1352	Received by: EC	Date/Time: 3/22/23 1352
Relinquished by: EC	Company: EC	Date/Time: 3/22/23 1825	Received by: EC	Date/Time: 3/22/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.1/2.1 1.9/1.9 2.8/2.8 2.3/2.3
Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

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Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315MOD-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
					38			2-500mL Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	2-500mL Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	2-500mL Poly	
1 — BGBMP0003_20230322	3-22-23	0920	G	WM	~~38~~	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3 — TB_20230322	3-22-23	0920	TB	WM	3	N	N				X										~~X~~ 0					
4 — TB_20230322	3-22-23	0920	TB	WM	3	N	N														X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

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Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dalla Costa	Company: H+A 13:52	Date/Time: 3-22-23	Received: EC	Date/Time: 3/22/23 1352
Relinquished by:	Company: EC	Date/Time: 3/22/23 1825	Received:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132140-1

Login Number: 132140
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132140-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

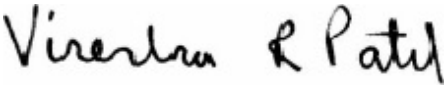
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-2

Qualifiers

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-2

Job ID: 570-132140-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132140-2

Receipt
The samples were received on 3/22/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9°C, 2.1°C, 2.3°C and 2.8°C

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-2

Client Sample ID: BGBMP0003_20230322 — Lab Sample ID: 570-132140-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0096	MB	0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0090	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0096	MB	0.00050	0.000079	ug/L			03/28/23 19:15	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0090	MB	0.00050	0.000079	ug/L			03/28/23 19:31	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-4916/ 5293
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000813	J,DX	0.00050	0.000079	ug/L			03/28/23 14:27	1

Lab Sample ID: MB 580-4916/ 5294
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/28/23 14:31	1

Lab Sample ID: MB 580-4916/ 5295
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/28/23 14:35	1

Lab Sample ID: LCS 580-4916/ 5296
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00466		ug/L		93	77 - 123		

Lab Sample ID: LCSD 580-4916/ 5297
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00473		ug/L		95	77 - 123	2	24

Lab Sample ID: MB 580-491366/21-A
Matrix: Water
Analysis Batch: 4916/ 5

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/28/23 18:37	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-2

Metals

Filtration Batch: 421366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	Filtration	
MB 580-421366/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 421695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	1631E	421366
570-132140-1	BGBMP0003_20230322	Total/NA	Water	1631E	
MB 580-421366/1-A	Method Blank	Dissolved	Water	1631E	421366
MB 580-421695/23	Method Blank	Total/NA	Water	1631E	
MB 580-421695/24	Method Blank	Total/NA	Water	1631E	
MB 580-421695/25	Method Blank	Total/NA	Water	1631E	
LCS 580-421695/26	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-421695/27	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-2

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	421366	03/24/23 14:10	DRM	EET SEA
Dissolved	Analysis	1631E		1			421695	03/28/23 19:31	D1C	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			421695	03/28/23 19:15	D1C	EET SEA
	Instrument ID: 2600-3									

Laboratory References:
EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-2

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132140-1	BGBMP0003_20230322	Water	03/22/23 09:20	03/22/23 18:25

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calsc

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

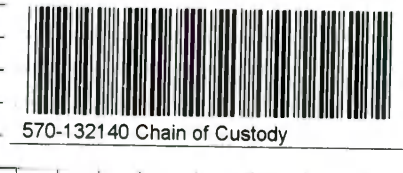
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9906	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl, F, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Hach Labs in Hacienda Heights, CA	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221) Enthalpy Analytical in Orange, CA
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 L ~~1-250mL Poly~~ Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile
1 – BGBMP0003_20230322	3-22-23	0920	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2 – TB_20230322-2	3-22-23	0920	TB	WM	3	N	N														x			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings	
Meter Serial #	
Time of Readings	0920
DO (mg/L)	16.83
pH	7.93
Temp (°C/°F)	9.81 °C
TRC (mg/L)	
Checked by:	MMD
Date/Time:	3-22-23 1200



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

	1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

	Company	Date/Time	Received by	Company	Date/Time
Relinquished by: Michelle Dalbelet	H+A	1352 3-22-23	Received by: EC		3/22/23 1352
Relinquished by: EC	EC	3/22/23 1825	Received by: EC		3/22/23 1825
Relinquished by:			Received in Laboratory by:		

2.1/2.1 1.9/1.9 2.8/2.8 2.3/2.3 Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315MOD-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
					38			2-500mL Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	2-500mL Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	2-500mL Poly	
1 — BGBMP0003_20230322	3-22-23	0920	G	WM	~~38~~	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3 — TB_20230322	3-22-23	0920	TB	WM	3	N	N				X										~~X~~ 0					
4 — TB_20230322	3-22-23	0920	TB	WM	3	N	N														X					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dalla Costa	Company: H+A 13:52	Date/Time: 3-22-23	Received: EC		Date/Time: 3/23/23 1352
Relinquished by:	Company: EC	Date/Time: 3/23/23 1825	Received:		Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212088.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-132140-2
Address: 5755 8th Street East, ,	Due Date Requested: 4/7/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
BGBMP0003_20230322 (570-132140-1)	3/22/23	09:20 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements: 6368 9235 4721
Empty Kit Relinquished by: Date:	Time: Method of Shipment:

Relinquished by:	Date/Time: 03/23/23 8:2[illegible]	Company: EC	Received by:	Date/Time: 3/24/23 9:4[illegible]	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: NA Sm Blu Ice | Cooler Temperature(s) °C and Other Remarks: 1.5 0.3 1.6

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132140-2

Login Number: 132140
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132140-2

Login Number: 132140
List Number: 4
Creator: Miller, Darren R

List Source: Eurofins Seattle
List Creation: 03/28/23 07:33 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:00:51 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132140-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

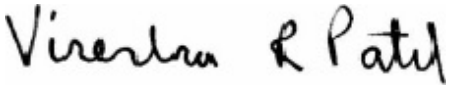
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/9/2023 10:00:51 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132140-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132140-3

Comments
No additional comments.

Receipt
The samples were received on 3/22/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9º C, 2.1º C, 2.3º C and 2.8º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-3

Method	Method Description	Protocol	Laboratory
Subcontract	Quant-Tray - E. Coli - level 4 required	None	Enthalpy

Protocol References:

None = None

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132140-1	BGBMP0003_20230322	Water	03/22/23 09:20	03/22/23 18:25

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 482039
Report Level: IV
Report Date: 03/31/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Location: Boeing SSFL ISRA and BMP - NEW #57014595

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	Lab Job #: Location: Date Received:	482039 Boeing SSFL ISRA and BMP - NEW #57014595 03/22/23

Sample ID	Lab ID	Collected	Matrix
BGBMP0003_20230322 (570-132140-1)	482039-001	03/22/23 09:20	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number: 482039 Location: Boeing SSFL ISRA and BMP - NEW #57014595 Date Received: 03/22/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/22/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

AS 3/22/23 ~~481~~ 482039

Chain of Custody Record

eurofins
Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212042.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132140-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/5/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
				Preservation Code:	X	X		X	
BGBMP0003_20230322 (570-132140-1)	3/22/23	09:20 Pacific		Water			X	3	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature] 3/22	3/22/23 1735	EC	[signature] 3/22	3/22/23 1735	CA

Custody Seals Intact: Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins

Project: Boeing SSFL ISRA and BMP NEW

Date Received: 3/22/23

Sampler's Name Present: ☑ Yes ☐ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 3.2 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 3.1 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✔		
Are sample IDs present?	✔		
Are sampling dates & times present?	✔		
Is a relinquished signature present?	✔		
Are the tests required clearly indicated on the COC?	✔		
Are custody seals present?		✔	
If custody seals are present, were they intact?			✔
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✔		
Did all samples arrive intact? If no, indicate in Section 4 below.	✔		
Did all bottle labels agree with COC? (ID, dates and times)	✔		
Were the samples collected in the correct containers for the required tests?	✔		
Are the containers labeled with the correct preservatives?	✔		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✔
Was a sufficient amount of sample submitted for the requested tests?	✔		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 3/22/23

Enthalpy Analytical, a subsidiary of Montrose Environmental Group ,Inc.
931 W. Barkley Ave, Orange, CA 92868 • T: (714) 771-6900 • F: (714) 538-1209
www.enthalpy.com/socal

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 482039 **Project#:** STANDARD

Client: Eurofins Calscience Tustin **Location:** Boeing SSFL ISRA and BMP - NEW #57...

Field ID:	BGBMP0003_20230322 (570-132140-1)	**Batch#:**	310281	**Analyzed:**	03/23/23 12:29
Lab ID:	482039-001	**Sampled:**	03/22/23 09:20	**Prep:**	
Matrix:	Water	**Received:**	03/22/23	**Analysis:**	SM 9223Bb
Dil n Fac:	1.000	**Prepared:**	03/22/23 18:15	**Analyst:**	JAA

482039-001 Analyte	Result	RL	Units	Qual
Coliform, E. Coli	**2.0**	1.0	MPN/100ml	H

Legend

H: Holding time was exceeded

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: JA Prep Date/Time: 3/22/23 1815 QC Batch ID: 310281 Batch Page 1 of 1

Read Analyst: VC Read Date/Time 3/23/23 1229

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: HU430 Pipette Lot #: A104222

Monthly Quanti-tray Sealer Check: Did it Pass? ☐Yes ☐No Date of last check*: 3/1/23 Bottle Lot #: DU006V Comparator Lot #: HU148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 1821 34.8°C Incubator Out, Temp/Time: 35.2°C 1228

Fecal Coliform: Water Bath ID: NA Water Bath In, Temp/Time: NA Water Bath Out, Temp/Time: NA

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts		MPN Table Value	Final Result, MPN	E. coli Counts		MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only)		MPN Table Value	Final Result, MPN	Comments
				Large Wells	Small Wells			Large Wells	Small Wells			Large Wells	Small Wells			
		U82039-001	1X	49	47	2419.6	2400	1	1	2.0	2.0					EN-9
		↓	10X	46	9	142.1	1400	0	0	<1	<1					↓ 10X
		↓	100X	13	2	17.1	1700	0	0	<1	<1					↓ 100X
Quality Control		Culture ID														
Positive +/+ (E. Coli)		3/19/23		49	48	>2419.6	>2400	49	48	>2419.6	>2400					
Positive +/- (K. Pneumonia)		↓		49	48	>2419.6	>2400	0	0	<1	<1					
Negative -/- (P. Aeruginosa)				0	0	<1	<1	0	0	<1	<1					

Data Entered By: JA 3/25/23 Data Reviewed By:

Enthalpy Analytical, Orange, Logbook # BK1064

Loc: 570
132140

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calsc

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9906	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl, F, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Hach Labs in Hacienda Heights, CA	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 L ~~1-250mL Poly~~ Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
1 – BGBMP0003_20230322	3-22-23	0920	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
2 – TB_20230322-2	3-22-23	0920	TB	WM	3	N	N														x				
																									Field Readings
																									Meter Serial #
																									Time of Readings 0920
																									DO (mg/L) 16.83
																									pH 7.93
																									Temp (°C/°F) 9.81 °C
																									TRC (mg/L)
																									Checked by: MMD
																									Date/Time: 3-22-23 1200
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6	



Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by: Michelle Dalbelet	Company: H+A	Date/Time: 3-22-23 1352	Received by: EC	Date/Time: 3/22/23 1352
Relinquished by:	Company: EC	Date/Time: 3/22/23 1825	Received by: EC	Date/Time: 3/22/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.1/2.1 1.9/1.9 2.8/2.8 2.3/2.3
Soil

SAP COC 2019/2020 VERSION 3

4/9/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315MOD-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
					38			2-500mL Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	2-500mL Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	2-500mL Poly	
1 — BGBMP0003_20230322	3-22-23	0920	G	WM	~~38~~	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3 — TB_20230322	3-22-23	0920	TB	WM	3	N	N				X										~~X~~ 0					
4 — TB_20230322	3-22-23	0920	TB	WM	3	N	N														X					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.:

	Company	Date/Time		Date/Time
Relinquished by: Michelle Dalla Lana	H+A 13:52	3-22-23	Received: EC	3/22/23 1352
Relinquished by:	EC	3/23/23 1825	Received:	
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132140-3

Login Number: 132140
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/14/2023 4:57:53 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132140-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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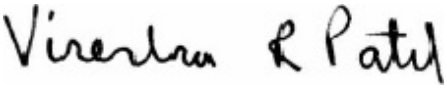

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Authorized for release by
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(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-4

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132140-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132140-4

Comments
No additional comments.

Receipt
The samples were received on 3/22/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9º C, 2.1º C, 2.3º C and 2.8º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument 12D5 exceeded this criteria: (CCV 320-667328/2), (LCS 320-666115/2-A), (LCSD 320-666115/3-A) and (MB 320-666115/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument 12D5 exceeded this criteria: BGBMP0003_20230322 (570-132140-1) and (CCV 320-667636/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-4

Client Sample ID: BGBMP0003_20230322 — Lab Sample ID: 570-132140-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.0000023	J,DX MB q	0.000050	0.00000084	ug/L	1		1613B	Total/NA
1,2,3,6,7,8-HxCDD	0.0000029	J,DX MB	0.000050	0.00000079	ug/L	1		1613B	Total/NA
1,2,3,7,8,9-HxCDF	0.0000016	J,DX q	0.000050	0.00000093	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDD	0.000056	MB	0.000050	0.0000046	ug/L	1		1613B	Total/NA
1,2,3,4,6,7,8-HpCDF	0.0000048	J,DX MB q	0.000050	0.0000017	ug/L	1		1613B	Total/NA
OCDD	0.00019	MB	0.000099	0.0000035	ug/L	1		1613B	Total/NA
OCDF	0.000011	J,DX MB	0.000099	0.0000013	ug/L	1		1613B	Total/NA
Total TCDD	0.0000011	J,DX MB q	0.0000099	0.00000061	ug/L	1		1613B	Total/NA
Total HxCDD	0.000014	J,DX MB q	0.000050	0.00000078	ug/L	1		1613B	Total/NA
Total HxCDF	0.0000016	J,DX MB q	0.000050	0.00000069	ug/L	1		1613B	Total/NA
Total HpCDD	0.000089	MB	0.000050	0.0000046	ug/L	1		1613B	Total/NA
Total HpCDF	0.0000091	J,DX MB q	0.000050	0.0000020	ug/L	1		1613B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 08:20
Date Received: 03/22/23 1y:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analzte	Result	f uali.ier	RL	EDL	Qnit	D	Prepared	AnalzUed	Dil Fac
2,3,7,8-TCDD	ND		0.0000099	0.00000061	ug/L		04/07/23 06:53	04/14/23 02:26	1
2,3,7,8-TCDF	ND		0.0000099	0.00000029	ug/L		04/07/23 06:53	04/14/23 02:26	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000066	ug/L		04/07/23 06:53	04/14/23 02:26	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000047	ug/L		04/07/23 06:53	04/14/23 02:26	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000054	ug/L		04/07/23 06:53	04/14/23 02:26	1
1,2,3,4,7,8-HxCDD	0.0000023	, JD9 MB q	0.000050	0.00000084	ug/L		04/07/23 06:53	04/14/23 02:26	1
1,2,3,6,7,8-HxCDD	0.0000028	, JD9 MB	0.000050	0.00000079	ug/L		04/07/23 06:53	04/14/23 02:26	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000072	ug/L		04/07/23 06:53	04/14/23 02:26	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000066	ug/L		04/07/23 06:53	04/14/23 02:26	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000060	ug/L		04/07/23 06:53	04/14/23 02:26	1
1,2,3,7,8,9-HxCDF	0.0000016	, JD9 q	0.000050	0.00000093	ug/L		04/07/23 06:53	04/14/23 02:26	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000059	ug/L		04/07/23 06:53	04/14/23 02:26	1
1,2,3,4,6,7,8-HpCDD	0.000056	MB	0.000050	0.0000046	ug/L		04/07/23 06:53	04/14/23 02:26	1
1,2,3,4,6,7,8-HpCDF	0.000004y	, JD9 MB q	0.000050	0.0000017	ug/L		04/07/23 06:53	04/14/23 02:26	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.0000023	ug/L		04/07/23 06:53	04/14/23 02:26	1
OCDD	0.00018	MB	0.000099	0.0000035	ug/L		04/07/23 06:53	04/14/23 02:26	1
OCDF	0.000011	, JD9 MB	0.000099	0.0000013	ug/L		04/07/23 06:53	04/14/23 02:26	1
Total TCDD	0.0000011	, JD9 MB q	0.0000099	0.00000061	ug/L		04/07/23 06:53	04/14/23 02:26	1
Total TCDF	ND		0.0000099	0.00000029	ug/L		04/07/23 06:53	04/14/23 02:26	1
Total PeCDD	ND		0.000050	0.00000066	ug/L		04/07/23 06:53	04/14/23 02:26	1
Total PeCDF	ND		0.000050	0.00000056	ug/L		04/07/23 06:53	04/14/23 02:26	1
Total HxCDD	0.000014	, JD9 MB q	0.000050	0.00000078	ug/L		04/07/23 06:53	04/14/23 02:26	1
Total HxCDF	0.0000016	, JD9 MB q	0.000050	0.00000069	ug/L		04/07/23 06:53	04/14/23 02:26	1
Total HpCDD	0.0000y8	MB	0.000050	0.0000046	ug/L		04/07/23 06:53	04/14/23 02:26	1
Total HpCDF	0.0000081	, JD9 MB q	0.000050	0.0000020	ug/L		04/07/23 06:53	04/14/23 02:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*02*		*25 - 106*	*46/47/23 40:53*	*46/16/23 42:20*	*1*
13C-2,3,7,8-TCDF	*55*		*26 - 109*	*46/47/23 40:53*	*46/16/23 42:20*	*1*
13C-1,2,3,7,8-PeCDD	*04*		*25 - 181*	*46/47/23 40:53*	*46/16/23 42:20*	*1*
13C-1,2,3,7,8-PeCDF	*57*		*26 - 185*	*46/47/23 40:53*	*46/16/23 42:20*	*1*
13C-2,3,6,7,8-PeCDF	*50*		*21 - 178*	*46/47/23 40:53*	*46/16/23 42:20*	*1*
13C-1,2,3,6,7,8-HxCDD	*53*		*32 - 161*	*46/47/23 40:53*	*46/16/23 42:20*	*1*
13C-1,2,3,0,7,8-HxCDD	*09*		*28 - 134*	*46/47/23 40:53*	*46/16/23 42:20*	*1*
13C-1,2,3,6,7,8-HxCDF	*54*		*20 - 152*	*46/47/23 40:53*	*46/16/23 42:20*	*1*
13C-1,2,3,0,7,8-HxCDF	*02*		*20 - 123*	*46/47/23 40:53*	*46/16/23 42:20*	*1*
13C-1,2,3,7,8,9-HxCDF	*50*		*29 - 167*	*46/47/23 40:53*	*46/16/23 42:20*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 08:20
Date Received: 03/22/23 1y:25

Lab Sample ID: 570-132140-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,6,0,7,8-HxCDF	02		28 - 130	46/47/23 40:53	46/16/23 42:20	1
13C-1,2,3,6,0,7,8-HpCDD	58		23 - 164	46/47/23 40:53	46/16/23 42:20	1
13C-1,2,3,6,0,7,8-HpCDF	53		28 - 163	46/47/23 40:53	46/16/23 42:20	1
13C-1,2,3,6,7,8,9-HpCDF	52		20 - 138	46/47/23 40:53	46/16/23 42:20	1
13C-OCDD	65		17 - 157	46/47/23 40:53	46/16/23 42:20	1
13C-OCDF	63		17 - 157	46/47/23 40:53	46/16/23 42:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	88		35 - 197	46/47/23 40:53	46/16/23 42:20	1

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (35-197)
570-132140-1	BGBMP0003_20230322	88
MB 320-666115/1-A	Method Blank	85

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	37TCDD (31-191)
LCS 320-666115/2-A	Lab Control Sample	85
LCSD 320-666115/3-A	Lab Control Sample Dup	86

Surrogate Legend

37TCDD = 37Cl4-2,3,7,8-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(25-164)	(24-169)	(25-181)	(24-185)	(21-178)	(32-141)	(28-130)	(26-152)
570-132140-1	BGBMP0003_20230322	62	55	60	57	56	53	69	50
MB 320-666115/1-A	Method Blank	66	58	65	59	57	59	69	51

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(26-123)	(29-147)	(28-136)	(23-140)	(28-143)	(26-138)	(17-157)	(17-157)
570-132140-1	BGBMP0003_20230322	62	56	62	58	53	52	45	43
MB 320-666115/1-A	Method Blank	65	62	68	66	58	60	56	54

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	PeCF	HxCDD	HxDD	HxCDF
Lab Sample ID	Client Sample ID	(20-175)	(22-152)	(21-227)	(21-192)	(13-328)	(21-193)	(25-163)	(19-202)
LCS 320-666115/2-A	Lab Control Sample	65	57	66	63	61	58	73	51
LCSD 320-666115/3-A	Lab Control Sample Dup	66	63	69	68	65	54	66	44

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HxDF	HxCF	13CHxCF	HpCDD	HpCDF	HpCDF2	OCDD	OCDF
Lab Sample ID	Client Sample ID	(21-159)	(17-205)	(22-176)	(26-166)	(21-158)	(20-186)	(13-199)	(13-199)
LCS 320-666115/2-A	Lab Control Sample	69	60	68	65	59	59	51	52
LCSD 320-666115/3-A	Lab Control Sample Dup	60	63	66	68	58	63	61	59

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-4
Project/Site: Boeing SSFL ISRA and BMP

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-666115/1-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 666115

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
4,2,7,3-8CDD	TD		0.000010	0.0000010	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
4,2,7,3-8CDF	TD		0.000010	0.000000u9	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
1,4,2,7,3-PeCDD	TD		0.000050	0.0000003u	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
1,4,2,7,3-PeCDF	0.00000111	J,D6 X	0.000050	0.0000050	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
4,2,9,7,3-PeCDF	TD		0.000050	0.000000u1	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
1,4,2,9,7,3-HxCDD	0.0000045q	J,D6 X	0.000050	0.0000003 9	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
1,4,2,u,7,3-HxCDD	0.000001u2	J,D6 X	0.000050	0.0000007u	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
1,4,2,7,3,q-HxCDD	0.000001u7	J,D6	0.000050	0.0000007 1	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
1,4,2,9,7,3-HxCDF	0.00000121	J,D6	0.000050	0.000000u3	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
1,4,2,u,7,3-HxCDF	TD		0.000050	0.000000u4	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
1,4,2,7,3,q-HxCDF	TD		0.000050	0.0000003 7	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
4,2,9,u,7,3-HxCDF	TD		0.000050	0.0000005q	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
1,4,2,9,u,7,3-HpCDD	0.00000911	J,D6	0.000050	0.000000q9	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
1,4,2,9,u,7,3-HpCDF	0.00000447	J,D6 X	0.000050	0.0000007q	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
1,4,2,9,7,3,q-HpCDF	TD		0.000050	0.000000qq	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
OCDD	0.0000901	J,D6	0.00010	0.0000011	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
OCDF	0.0000072u	J,D6 X	0.00010	0.0000014	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
8otal 8CDD	0.00000131	J,D6	0.000010	0.0000010	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
8otal 8CDF	TD		0.000010	0.000000u9	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
8otal PeCDD	TD		0.000050	0.0000003u	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
8otal PeCDF	0.00000174	J,D6 X	0.000050	0.0000005u	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
8otal HxCDD	0.0000053q	J,D6 X	0.000050	0.0000007 7	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
8otal HxCDF	0.00000121	J,D6	0.000050	0.000000uq	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
8otal HpCDD	0.00000uuq	J,D6 X	0.000050	0.000000q9	Ng/L		09/07/42 0u:52	09/12/42 04:19	1
8otal HpCDF	0.00000447	J,D6 X	0.000050	0.0000003q	Ng/L		09/07/42 0u:52	09/12/42 04:19	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*00*		*25 - 106*	*46/47/23 40:53*	*46/13/23 42:16*	*1*
13C-2,3,7,8-TCDF	*58*		*26 - 109*	*46/47/23 40:53*	*46/13/23 42:16*	*1*
13C-1,2,3,7,8-PeCDD	*05*		*25 - 181*	*46/47/23 40:53*	*46/13/23 42:16*	*1*
13C-1,2,3,7,8-PeCDF	*59*		*26 - 185*	*46/47/23 40:53*	*46/13/23 42:16*	*1*
13C-2,3,6,7,8-PeCDF	*57*		*21 - 178*	*46/47/23 40:53*	*46/13/23 42:16*	*1*
13C-1,2,3,6,7,8-HxCDD	*59*		*32 - 161*	*46/47/23 40:53*	*46/13/23 42:16*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-666115/1-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 666115

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,0,7,8-HxCDD	09		28 - 134	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,6,7,8-HxCDF	51		20 - 152	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,0,7,8-HxCDF	05		20 - 123	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,7,8,9-HxCDF	02		29 - 167	46/47/23 40:53	46/13/23 42:16	1
13C-2,3,6,0,7,8-HxCDF	08		28 - 130	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,6,0,7,8-HpCDD	00		23 - 164	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,6,0,7,8-HpCDF	58		28 - 163	46/47/23 40:53	46/13/23 42:16	1
13C-1,2,3,6,7,8,9-HpCDF	04		20 - 138	46/47/23 40:53	46/13/23 42:16	1
13C-OCDD	50		17 - 157	46/47/23 40:53	46/13/23 42:16	1
13C-OCDF	56		17 - 157	46/47/23 40:53	46/13/23 42:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl6-2,3,7,8-TCDD	85		35 - 197	46/47/23 40:53	46/13/23 42:16	1

Lab Sample ID: LCS 320-666115/2-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 666115

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
4,2,7,3-8CDD	0.000400	0.00017u		Ng/L		33	u7 - 153
4,2,7,3-8CDF	0.000400	0.000137		Ng/L		q2	75 - 153
1,4,2,7,3-PeCDD	0.00100	0.0003uu		Ng/L		37	70 - 194
1,4,2,7,3-PeCDF	0.00100	0.000357		Ng/L		3u	30 - 129
4,2,9,7,3-PeCDF	0.00100	0.000377		Ng/L		33	u3 - 1u0
1,4,2,9,7,3-HxCDD	0.00100	0.000345		Ng/L		34	70 - 1u9
1,4,2,u,7,3-HxCDD	0.00100	0.0003q9		Ng/L		3q	7u - 129
1,4,2,7,3,q-HxCDD	0.00100	0.000333		Ng/L		3q	u9 - 1u4
1,4,2,9,7,3-HxCDF	0.00100	0.000310		Ng/L		31	74 - 129
1,4,2,u,7,3-HxCDF	0.00100	0.000399		Ng/L		39	39 - 120
1,4,2,7,3,q-HxCDF	0.00100	0.00035u		Ng/L		3u	73 - 120
4,2,9,u,7,3-HxCDF	0.00100	0.000392		Ng/L		39	70 - 15u
1,4,2,9,u,7,3-HpCDD	0.00100	0.000399		Ng/L		39	70 - 190
1,4,2,9,u,7,3-HpCDF	0.00100	0.0003q2		Ng/L		3q	34 - 144
1,4,2,9,7,3,q-HpCDF	0.00100	0.000350		Ng/L		35	73 - 123
OCDD	0.00400	0.00134		Ng/L		q1	73 - 199
OCDF	0.00400	0.00173		Ng/L		3q	u2 - 170

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	05		24 - 175
13C-2,3,7,8-TCDF	57		22 - 152
13C-1,2,3,7,8-PeCDD	00		21 - 227
13C-1,2,3,7,8-PeCDF	03		21 - 192
13C-2,3,6,7,8-PeCDF	01		13 - 328
13C-1,2,3,6,7,8-HxCDD	58		21 - 193
13C-1,2,3,0,7,8-HxCDD	73		25 - 103
13C-1,2,3,6,7,8-HxCDF	51		19 - 242
13C-1,2,3,0,7,8-HxCDF	09		21 - 159
13C-1,2,3,7,8,9-HxCDF	04		17 - 245

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-666115/2-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 666115

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,6,0,7,8-HxCDF	08		22 - 170
13C-1,2,3,6,0,7,8-HpCDD	05		20 - 100
13C-1,2,3,6,0,7,8-HpCDF	59		21 - 158
13C-1,2,3,6,7,8,9-HpCDF	59		24 - 180
13C-OCDD	51		13 - 199
13C-OCDF	52		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl6-2,3,7,8-TCDD	85		31 - 191

Lab Sample ID: LCSD 320-666115/3-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 666115

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
4,2,7,3-8CDD			0.000400	0.0001q9		Ng/L		q7	u7 - 153	10	50
4,2,7,3-8CDF			0.000400	0.00040u		Ng/L		102	75 - 153	10	50
1,4,2,7,3-PeCDD			0.00100	0.000q49		Ng/L		q4	70 - 194	7	50
1,4,2,7,3-PeCDF			0.00100	0.000q92		Ng/L		q9	30 - 129	10	50
4,2,9,7,3-PeCDF			0.00100	0.000quq		Ng/L		q7	u3 - 1u0	10	50
1,4,2,9,7,3-HxCDD			0.00100	0.00032q		Ng/L		39	70 - 1u9	4	50
1,4,2,u,7,3-HxCDD			0.00100	0.000q40		Ng/L		q4	7u - 129	2	50
1,4,2,7,3,q-HxCDD			0.00100	0.000q79		Ng/L		q7	u9 - 1u4	q	50
1,4,2,9,7,3-HxCDF			0.00100	0.000357		Ng/L		3u	74 - 129	u	50
1,4,2,u,7,3-HxCDF			0.00100	0.000357		Ng/L		3u	39 - 120	4	50
1,4,2,7,3,q-HxCDF			0.00100	0.000391		Ng/L		39	73 - 120	4	50
4,2,9,u,7,3-HxCDF			0.00100	0.0003u2		Ng/L		3u	70 - 15u	4	50
1,4,2,9,u,7,3-HpCDD			0.00100	0.00032q		Ng/L		39	70 - 190	1	50
1,4,2,9,u,7,3-HpCDF			0.00100	0.000q0u		Ng/L		q1	34 - 144	1	50
1,4,2,9,7,3,q-HpCDF			0.00100	0.00037u		Ng/L		33	73 - 123	2	50
OCDD			0.00400	0.0017q		Ng/L		3q	73 - 199	4	50
OCDF			0.00400	0.00177		Ng/L		3q	u2 - 170	0	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	00		24 - 175
13C-2,3,7,8-TCDF	03		22 - 152
13C-1,2,3,7,8-PeCDD	09		21 - 227
13C-1,2,3,7,8-PeCDF	08		21 - 192
13C-2,3,6,7,8-PeCDF	05		13 - 328
13C-1,2,3,6,7,8-HxCDD	56		21 - 193
13C-1,2,3,0,7,8-HxCDD	00		25 - 103
13C-1,2,3,6,7,8-HxCDF	66		19 - 242
13C-1,2,3,0,7,8-HxCDF	04		21 - 159
13C-1,2,3,7,8,9-HxCDF	03		17 - 245
13C-2,3,6,0,7,8-HxCDF	00		22 - 170
13C-1,2,3,6,0,7,8-HpCDD	08		20 - 100
13C-1,2,3,6,0,7,8-HpCDF	58		21 - 158
13C-1,2,3,6,7,8,9-HpCDF	03		24 - 180

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-666115/3-A
Matrix: Water
Analysis Batch: 667328

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 666115

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-OCDD	01		13 - 199
13C-OCDF	59		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl6-2,3,7,8-TCDD	80		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-4

Specialty Organics

Prep Batch: 666115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	1613B	
MB 320-666115/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-666115/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-666115/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 667328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-666115/1-A	Method Blank	Total/NA	Water	1613B	666115
LCS 320-666115/2-A	Lab Control Sample	Total/NA	Water	1613B	666115
LCSD 320-666115/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	666115

Analysis Batch: 667636

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	1613B	666115

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-4
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: BGBMP0003_20230322
Lab Sample ID: 570-132140-1
Date Collected: 03/22/23 09:20
Matrix: Water
Date Received: 03/22/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1005.6 mL	20.0 uL	666115	04/07/23 06:53	FC	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	667636	04/14/23 02:26	DB	EET SAC
	Instrument ID: 12D5									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-124190-9
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-040	04-40-49
ANAB	Dept. of Defense ELAP	L4968	01-40-49
ANAB	Dept. of Energy	L4968.01	01-40-49
ANAB	ISO/IEC 17045	L4968	01-40-49
Arizona	State	AZ0708	08-11-42
Arkansas DE3	State	88-06Q1	06-17-42
California	State	48Q7	01-44-49
Colorado	State	CA0009	08-21-42
Florida	NELAP	E87570	06-20-42
Georgia	State	9090	01-4Q-49
Hawaii	State	<cert No.>	01-4Q-49
Illinois	NELAP	400060	02-17-49
Kansas	NELAP	E-10275	10-21-42
Louisiana	NELAP	01Q99	06-20-42
Louisiana (All)	NELAP	01Q99	06-20-42
Maine	State	CA00009	09-19-49
Michigan	State	QQ97	06-01-42
Ne*ada	State	CA00099	07-21-42
New Hav pshire	NELAP	4QQ7	09-18-42
New Jersey	NELAP	CA005	06-20-42
New mork	NELAP	11666	09-01-49
Ohio	State	91454	01-4Q-49
Oregon	NELAP	9090	01-4Q-49
TeYas	NELAP	T1097092QQ-1Q-12	05-21-42
US Fish & x ildlife	US Federal Prograv s	58998	09-20-42
USDA	US Federal Prograv s	P220-18-0042Q	04-48-46
Utah	NELAP	CA000994041-14	04-48-42 W
Virginia	NELAP	960478	02-19-49
x ashington	State	C581	05-05-42
x est Virginia (Dx)	State	QQ20C	14-21-42
x isconsin	State	QQ8409680	08-21-42
x yov ing	State Prograv	8TMS-L	01-48-1QW

WAccreditation/Certification renewal pending - accreditation/certification considered *alid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-4

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132140-1	BGBMP0003_20230322	Water	03/22/23 09:20	03/22/23 18:25

Loc: 570
132140

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calsc

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9906	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl, F, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Mark Labs in Hacienda Heights, CA	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221) Enthalpy Analytical in Orange, CA
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1L ~~1-250mL Poly~~ Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile
1 – BGBMP0003_20230322	3-22-23	0920	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2 – TB_20230322-2	3-22-23	0920	TB	WM	3	N	N														x			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6

570-132140 Chain of Custody

Field Readings
Meter Serial #
Time of Readings 0920
DO (mg/L) 16.83
pH 7.93
Temp (°C/°F) 9.81 °C
TRC (mg/L)
Checked by: MMD
Date/Time: 3-22-23 1200

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____	
Relinquished by: Michelle Dalbelet	Company: H+A	Date/Time: 3-22-23 1352	Received by: EC	Date/Time: 3/22/23 1352
Relinquished by:	Company: EC	Date/Time: 3/22/23 1825	Received by: EC	Date/Time: 3/22/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.1/2.1 1.9/1.9 2.8/2.8 2.3/2.3
Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/14/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315MOD-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
					38			2-500mL Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	2-500mL Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	2-500mL Poly	
1 — BGBMP0003_20230322	3-22-23	0920	G	WM	~~38~~	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3 — TB_20230322	3-22-23	0920	TB	WM	3	N	N				X										~~X~~ 10					
4 — TB_20230322	3-22-23	0920	TB	WM	3	N	N														X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dalla Costa	Company: H+A 13:52	Date/Time: 3-22-23	Received: EC	Date/Time: 3/22/23 1352
Relinquished by:	Company: EC	Date/Time: 3/23/23 1825	Received:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212218.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-132140-4
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/7/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGBMP0003_20230322 (570-132140-1)	3/22/23	09:20 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 03/23/23 13:12	Company: EC	Received by: [signature]	Date/Time: 3.24.23 900	Company: BGTSAC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 1 °C

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132140-4

Login Number: 132140
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132140-4

Login Number: 132140
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/24/23 02:17 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.7c 1.4c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 6/8/2023 12:06:55 PM Revision 1

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132140-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

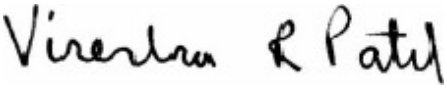
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-5

Job ID: 570-132140-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132140-5

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 5/12/2023. The report (revision 1) is being revised due to: The clients office requested the full EPA 608.3 list to be reported..

Receipt
The samples were received on 3/22/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9º C, 2.1º C, 2.3º C and 2.8º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods EPA 608 - Pesticides/PCBs - PP list, VOCs-2CVE only (E624), Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-5

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs-2CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132140-1	BGBMP0003_20230322	Water	03/22/23 09:20	03/22/23 18:25
570-132140-3	TB_20230322	Water	03/22/23 09:20	03/22/23 18:25

Certificate of Analysis

FINAL REPORT

Work Orders: 3C23055

Project: 570-132140-5

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 6/02/2023
Received Date: 3/22/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #:
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/22/23 with the Chain-of-Custody document. The samples were received in good condition, at 5.7 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: BGBMP0003_20230322(570-132140-1) Sampled: 03/22/23 9:20 by Client
3C23055-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C2119 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/24/23 07:59				**Analyst:** RJG
4,4´-DDD	ND	0.0027	0.050	ug/l	1	03/28/23	
4,4´-DDE	ND	0.0018	0.050	ug/l	1	03/28/23	
4,4´-DDT	ND	0.0028	0.050	ug/l	1	03/28/23	
Aldrin	ND	0.0010	0.050	ug/l	1	03/28/23	
alpha-BHC	ND	0.0011	0.050	ug/l	1	03/28/23	
Aroclor 1016	ND	0.029	1.0	ug/l	1	03/28/23	
Aroclor 1221	ND	0.060	1.0	ug/l	1	03/28/23	
Aroclor 1232	ND	0.083	1.0	ug/l	1	03/28/23	
Aroclor 1242	ND	0.095	1.0	ug/l	1	03/28/23	
Aroclor 1248	ND	0.083	1.0	ug/l	1	03/28/23	
Aroclor 1254	ND	0.040	1.0	ug/l	1	03/28/23	
Aroclor 1260	ND	0.055	1.0	ug/l	1	03/28/23	
beta-BHC	ND	0.0015	0.050	ug/l	1	03/28/23	
Chlordane (tech)	ND	0.043	0.50	ug/l	1	03/28/23	
delta-BHC	ND	0.0050	0.050	ug/l	1	03/28/23	
Dieldrin	ND	0.0017	0.050	ug/l	1	03/28/23	
Endosulfan I	ND	0.0019	0.050	ug/l	1	03/28/23	Q-ME
Endosulfan II	ND	0.0019	0.050	ug/l	1	03/28/23	
Endosulfan sulfate	ND	0.0013	0.050	ug/l	1	03/28/23	
Endrin	ND	0.0017	0.050	ug/l	1	03/28/23	

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Sample Results

(Continued)

Sample: BGBMP0003_20230322(570-132140-1) Sampled: 03/22/23 9:20 by Client
3C23055-01 (Water) (Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C2119 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/24/23 07:59				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.050	ug/l	1	03/28/23	
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l	1	03/28/23	
Heptachlor	ND	0.0023	0.050	ug/l	1	03/28/23	
Heptachlor epoxide	ND	0.0018	0.050	ug/l	1	03/28/23	
Methoxychlor	ND	0.0038	0.050	ug/l	1	03/28/23	
Toxaphene	ND	0.085	2.0	ug/l	1	03/28/23	
Surrogate(s)							
Decachlorobiphenyl	*75%*		*33-133*	*Conc: 0.0751*		*03/28/23*	
Tetrachloro-meta-xylene	*71%*		*32-130*	*Conc: 0.0714*		*03/28/23*	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2119-BLK1)					**Prepared: 03/24/23 Analyzed: 03/28/23**						
4,4´-DDD	ND	0.0027	0.050	ug/l							
4,4´-DDE	ND	0.0018	0.050	ug/l							
4,4´-DDT	ND	0.0028	0.050	ug/l							
Aldrin	ND	0.0010	0.050	ug/l							
alpha-BHC	ND	0.0011	0.050	ug/l							
Aroclor 1016	ND	0.029	1.0	ug/l							
Aroclor 1221	ND	0.060	1.0	ug/l							
Aroclor 1232	ND	0.083	1.0	ug/l							
Aroclor 1242	ND	0.095	1.0	ug/l							
Aroclor 1248	ND	0.083	1.0	ug/l							
Aroclor 1254	ND	0.040	1.0	ug/l							
Aroclor 1260	ND	0.055	1.0	ug/l							
beta-BHC	ND	0.0015	0.050	ug/l							
Chlordane (tech)	ND	0.043	0.50	ug/l							
delta-BHC	ND	0.0019	0.050	ug/l							
Dieldrin	ND	0.0017	0.050	ug/l							
Endosulfan I	ND	0.0019	0.050	ug/l							
Endosulfan II	ND	0.0019	0.050	ug/l							
Endosulfan sulfate	ND	0.0013	0.050	ug/l							
Endrin	ND	0.0017	0.050	ug/l							
Endrin aldehyde	ND	0.0019	0.050	ug/l							
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l							
Heptachlor	ND	0.0023	0.050	ug/l							
Heptachlor epoxide	ND	0.0018	0.050	ug/l							
Methoxychlor	ND	0.0038	0.050	ug/l							
Toxaphene	ND	0.085	2.0	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.106*			*ug/l*	*0.100*		*106*	*33-133*			
Tetrachloro-meta-xylene	*0.0780*			*ug/l*	*0.100*		*78*	*32-130*			
LCS (W3C2119-BS1)					**Prepared: 03/24/23 Analyzed: 03/28/23**						
4,4´-DDD	0.188	0.0027	0.050	ug/l	0.200		94	48-130			
4,4´-DDE	0.168	0.0018	0.050	ug/l	0.200		84	54-130			
4,4´-DDT	0.210	0.0028	0.050	ug/l	0.200		105	46-137			
Aldrin	0.160	0.0010	0.050	ug/l	0.200		80	54-130			
alpha-BHC	0.196	0.0011	0.050	ug/l	0.200		98	49-130			
beta-BHC	0.184	0.0015	0.050	ug/l	0.200		92	39-130			
delta-BHC	0.165	0.0019	0.050	ug/l	0.200		83	51-130			
Dieldrin	0.158	0.0017	0.050	ug/l	0.200		79	58-130			
Endosulfan I	0.109	0.0019	0.050	ug/l	0.200		55	57-141			Q-ME
Endosulfan II	0.128	0.0019	0.050	ug/l	0.200		64	22-171			
Endosulfan sulfate	0.157	0.0013	0.050	ug/l	0.200		78	38-132			
Endrin	0.172	0.0017	0.050	ug/l	0.200		86	51-130			
Endrin aldehyde	0.168	0.0019	0.050	ug/l	0.200		84	18-130			

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www.wecklabs.com

Quality Control Results

(Continued)

Chlorinated Pesticides and/or PCBs by GC/ECD (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
LCS (W3C2119-BS1)					**Prepared: 03/24/23**	**Analyzed: 03/28/23**					
gamma-BHC (Lindane)	0.192	0.0015	0.050	ug/l	0.200		96	43-130			
Heptachlor	0.199	0.0023	0.050	ug/l	0.200		100	43-130			
Heptachlor epoxide	0.186	0.0018	0.050	ug/l	0.200		93	57-132			
Methoxychlor	0.194	0.0038	0.050	ug/l	0.200		97	50-130			
Surrogate(s)											
Decachlorobiphenyl	*0.0947*			*ug/l*	*0.100*		*95*	*33-133*			
Tetrachloro-meta-xylene	*0.0792*			*ug/l*	*0.100*		*79*	*32-130*			
LCS Dup (W3C2119-BSD1)					**Prepared: 03/24/23**	**Analyzed: 03/28/23**					
4,4´-DDD	0.218	0.0027	0.050	ug/l	0.200		109	48-130	14	30	
4,4´-DDE	0.188	0.0018	0.050	ug/l	0.200		94	54-130	11	30	
4,4´-DDT	0.265	0.0028	0.050	ug/l	0.200		133	46-137	23	30	
Aldrin	0.172	0.0010	0.050	ug/l	0.200		86	54-130	7	30	
alpha-BHC	0.222	0.0011	0.050	ug/l	0.200		111	49-130	12	30	
beta-BHC	0.191	0.0015	0.050	ug/l	0.200		95	39-130	4	30	
delta-BHC	0.177	0.0019	0.050	ug/l	0.200		88	51-130	7	30	
Dieldrin	0.179	0.0017	0.050	ug/l	0.200		89	58-130	12	30	
Endosulfan I	0.124	0.0019	0.050	ug/l	0.200		62	57-141	13	30	
Endosulfan II	0.146	0.0019	0.050	ug/l	0.200		73	22-171	13	30	
Endosulfan sulfate	0.220	0.0013	0.050	ug/l	0.200		110	38-132	33	30	Q-12
Endrin	0.208	0.0017	0.050	ug/l	0.200		104	51-130	19	30	
Endrin aldehyde	0.198	0.0019	0.050	ug/l	0.200		99	18-130	16	30	
gamma-BHC (Lindane)	0.229	0.0015	0.050	ug/l	0.200		114	43-130	18	30	
Heptachlor	0.241	0.0023	0.050	ug/l	0.200		121	43-130	19	30	
Heptachlor epoxide	0.216	0.0018	0.050	ug/l	0.200		108	57-132	15	30	
Methoxychlor	0.232	0.0038	0.050	ug/l	0.200		116	50-130	18	30	
Surrogate(s)											
Decachlorobiphenyl	*0.0678*			*ug/l*	*0.100*		*68*	*33-133*			
Tetrachloro-meta-xylene	*0.0853*			*ug/l*	*0.100*		*85*	*32-130*			

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Notes and Definitions

Item	Definition
Q-12	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on the percent recoveries and/or other acceptable QC data.
Q-ME	Acceptable QC with marginal exceedance
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

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Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

3023055

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212047.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132140-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/12/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
BGBMP0003_20230322 (570-132140-1)	3/22/23	09:20 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB_20230322 (570-132140-3)	3/22/23	09:20 Pacific		Water			X				3	See Attached Instructions
												Pe Virendra, please preserve and quantify for Hydrazine. -PN 3/22/23

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	3/22/23 1616	EC	[signature]	03/22/23 1621	
2				[signature]		
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.7C TW278

ICOC No:
570-212047

Containers

Count	Container Type	Preservative
5	Amber Glass 1 liter - unpreserved	None
6	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (EPA 608 - Pesticides/PCBs - PP list)	Level IV package, MDL, EQUIS 5C
1	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	525.2- 24 hour extraction for Diaznon and Chyloriphrous- level IV package needed.
1	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV package, MDL, EQUIS 5C
1, 3	SUBCONTRACT	SUB (VOCs-2CVE only (E624))	Level IV package, MDL, EQUIS 5C

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: 3C23055
WKO Logged by: Jerald Ancheta
Samples Checked by: Jerald Ancheta
Date/Time Received: 03/22/23 @ 16:21
# of Samples: 2
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	5.7°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	Wet			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot# 3011190
	Free Chlorine Tested <0.1 (Organics Analyses)	☐	☐	☒	Cl Test Strip Lot# 061221E
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: / Acid Lot# / Amt added:
	Project Manager notified?	☐	☐	☒	

PM Comments

Sample Receipt Checklist Prepared by:
Signature: Jerald Ancheta Date: 03/23/2023

VOCs - remove A+A.
KRM 3/23/23

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only ~~A+A~~+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315MOD/WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-500mL Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	4-40mL VOA	2-1L Amber	2-500mL Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	2-500mL Poly	
1 — BGBMP0003_20230322	3-22-23	0920	G	WM	~~36~~ 38	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3 — TB_20230322	3-22-23	0920	TB	WM	3	N	N				X										~~X~~					
4 — TB_20230322	3-22-23	0920	TB	WM	3	N	N														X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Revised COC received from Katherine Miller (H&A) on 03/23/23 at 09:37am.
- Virendra (ECI)

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ☐ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.:

	Company	Date/Time		Date/Time
Relinquished by: Michelle Dalla Costa	Company: H+A 13:52	Date/Time: 3-22-23	Received: EC	Date/Time: 3/22/23 1352
Relinquished by:	Company: EC	Date/Time: 3/22/23 1925	Received:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Loc: 570
132140

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calsc

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9906	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl, F, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221)
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 L ~~1-250mL Poly~~ Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile
1 – BGBMP0003_20230322	3-22-23	0920	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2 – TB_20230322-2	3-22-23	0920	TB	WM	3	N	N														x			

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

								1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6

Field Readings
Meter Serial #
Time of Readings 0920
DO (mg/L) 16.83
pH 7.93
Temp (°C/°F) 9.81 °C
TRC (mg/L)
Checked by: MMD
Date/Time: 3-22-23 1200

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

570-132140 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by: Michelle Dalbelet	Company: H+A	1352 3-22-23	Received by: EC		3/22/23 1352
Relinquished by: EC	Company: EC	3/22/23 1825	Received by: EC		3/22/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

2.1/2.1 1.9/1.9 2.8/2.8 2.3/2.3 Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315MOD-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
					38			2-500mL Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	2-500mL Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	2-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
1 – BGBMP0003_20230322	3-22-23	0920	G	WM	~~38~~	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	~~X~~	x	x	x	x	
3 – TB_20230322	3-22-23	0920	TB	WM	3	N	N				X										~~X~~					
4 – TB_20230322	3-22-23	0920	TB	WM	3	N	N														X					
								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dalla Lana	Company: H+A 13:52	Date/Time: 3-22-23	Received: EC	Date/Time: 3/22/23 1352
Relinquished by:	Company: EC	Date/Time: 3/22/23 1825	Received:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132140-5

Login Number: 132140
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132140-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

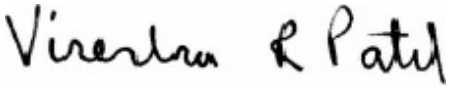
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-6

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129140-6

Job ID: 570-132140-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132140-6

Comments
No additional comments.

Receipt
The samples were received on 2/99/9092 6:95 PM. 3nless otherwise noted below, the samples arrived in good condition, and where reUqired, properly preserved and on ice. The temperatqres outhe 4 coolers at receipt time were 1.f º C, 9.1º C, 9.2º C and 9.Gº C.

Lab Admin
No analytical or Uqality issqes were noted, other than those described in the Deuinitions/x lossary page.

Subcontract Work
Method Chronic To(icity - Ceriodaphnia EBPA-G91-R-09-012): This method was sqbcontracted to AUqatic Bioassay & Consqlting. The sqbcontract laboratory certiuication is diuerent urom that outhe uacility issqing the uinal report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132140-1	BGBMP0003_20230322	Water	03/22/23 09:20	03/22/23 18:25

aquatic bioassay & consulting laboratories, inc

April 6, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	BGBMP0003_20230322
DATE RECEIVED:	23 March - 2023
ABC LAB. NO.:	CSE0323.234

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = -25.58 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Report Date: 06 Apr-23 12:42 (p 1 of 1)
Test Code/ID: CSE0323.234 / 08-7445-0381

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	07-7204-3703	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	23 Mar-23 15:18	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	30 Mar-23 14:45	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 23h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	11-5939-2667	Code:	CSE0323.234	Project:	
Sample Date:	22 Mar-23 09:20	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	23 Mar-23 14:05	CAS (PC):		Station:	BGBMP0003_20230322
Sample Age:	30h (4.3 °C)	Client:	Eurofins Calscience		

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
02-0004-3655	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
16-5746-9535	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits Lower	TAC Limits Upper	Overlap	Decision
02-0004-3655	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
16-5746-9535	Reproduction	Control Resp	23.85	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	23.85	21.61	26.09	10	32	1.072	4.793	20.10%	0.00%
100		20	29.95	27.61	32.29	21	38	1.116	4.989	16.66%	-25.58%

7d Survival Rate Detail

MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail

MD5: 9391B548945F8738DF1053E21583EF2F

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	25	23	10	23	23	27	20	23	22	17
100		23	24	31	26	32	26	27	29	23	23
		28	31	34	38	21	30	32	33	24	25
		35	35	31	34	31	22	36	30	26	23

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	16-5746-9535	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:38	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	04 Apr-23 12:35	**MD5 Hash:**	9391B548945F8738DF1053E21583EF2F	**Editor ID:**	009-702-627-3
Batch ID:	07-7204-3703	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	23 Mar-23 15:18	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	30 Mar-23 14:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	6d 23h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	11-5939-2667	**Code:**	CSE0323.234	**Project:**	
Sample Date:	22 Mar-23 09:20	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	23 Mar-23 14:05	**CAS (PC):**		**Station:**	BGBMP0003_20230322
Sample Age:	30h (4.3 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	34	8.772	0.8523	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	23.85	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	372.1	372.1	1	15.55	0.0003	Significant Effect
Error	909.5	23.9342	38			
Total	1281.6		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	0.7081	7.353	0.4053	Equal Variances
	Mod Levene Equality of Variance Test	0.5584	7.353	0.4595	Equal Variances
	Variance Ratio F Test	1.083	3.432	0.8632	Equal Variances
Distribution	Anderson-Darling A2 Test	0.5032	3.878	0.2089	Normal Distribution
	D'Agostino Kurtosis Test	0.9484	2.576	0.3429	Normal Distribution
	D'Agostino Skewness Test	1.734	2.576	0.0829	Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	3.906	9.21	0.1418	Normal Distribution
	Kolmogorov-Smirnov D Test	0.1551	0.1617	0.0165	Normal Distribution
	Shapiro-Wilk W Normality Test	0.9641	0.9236	0.2304	Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	23.85	21.61	26.09	23	10	32	1.072	20.10%	0.00%
100		20	29.95	27.61	32.29	31	21	38	1.116	16.66%	-25.58%

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	25	23	10	23	23	27	20	23	22	17
		23	24	31	26	32	26	27	29	23	23
100		28	31	34	38	21	30	32	33	24	25
		35	35	31	34	31	22	36	30	26	23

Analysis ID:	16-5746-9535	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:38	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	04 Apr-23 12:35	**MD5 Hash:**	9391B548945F8738DF1053E21583EF2F	**Editor ID:**	009-702-627-3

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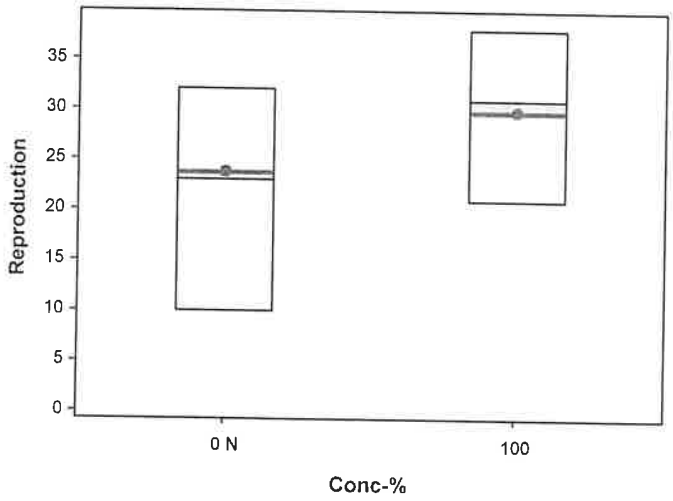
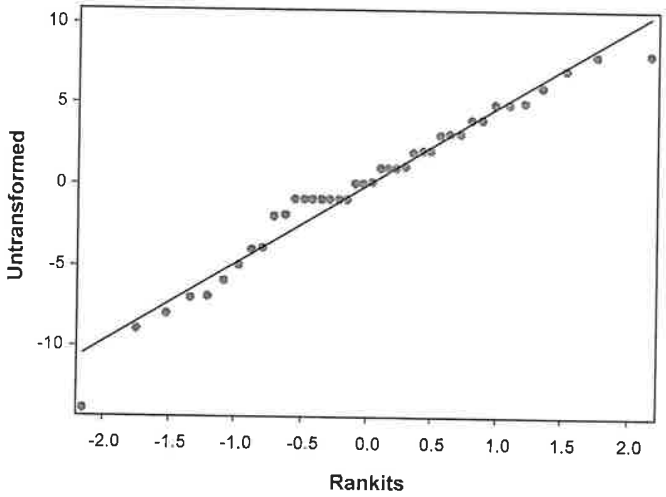




CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	02-0004-3655	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:38	Analysis:	Single 2x2 Contingency Table	Status Level:	1
Edit Date:	04 Apr-23 12:35	MD5 Hash:	E2FCA10CAEB5BD33B061F6901431A2E1	Editor ID:	009-702-627-3
Batch ID:	07-7204-3703	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	23 Mar-23 15:18	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	30 Mar-23 14:45	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 23h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	11-5939-2667	Code:	CSE0323.234	Project:	
Sample Date:	22 Mar-23 09:20	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	23 Mar-23 14:05	CAS (PC):		Station:	BGBMP0003_20230322
Sample Age:	30h (4.3 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

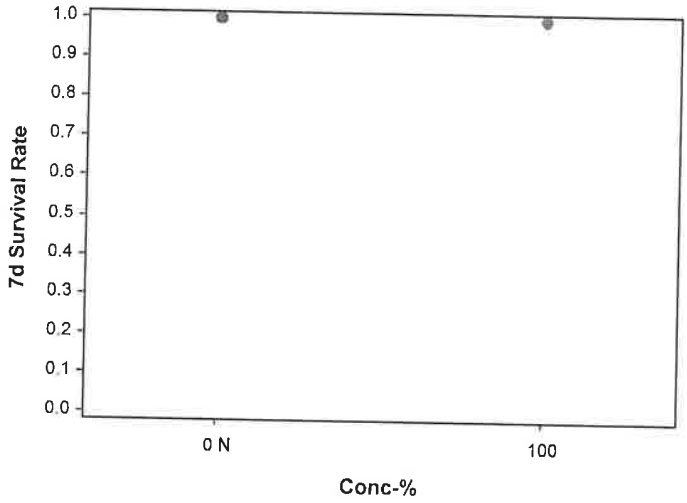
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analysis ID:	02-0004-3655	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:38	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	04 Apr-23 12:35	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	009-702-627-3

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	07-7204-3703	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**			
Start Date:	23 Mar-23 15:18	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water		
Ending Date:	30 Mar-23 14:45	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable		
Test Length:	6d 23h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:**	<24
Sample ID:	11-5939-2667	**Code:**	CSE0323.234	**Project:**			
Sample Date:	22 Mar-23 09:20	**Material:**	Sample Water	**Source:**	Bioassay Report		
Receipt Date:	23 Mar-23 14:05	**CAS (PC):**		**Station:**	BGBMP0003_20230322		
Sample Age:	30h (4.3 °C)	**Client:**	Eurofins Calscience				

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60	60	60	60	60	0	0	0.00%	0
100		8	36	36	36	36	36	0	0	0.00%	0
Overall		16	48	41.4	54.6	36	60	3.098	12.39	25.82%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	376.5	372.8	380.2	370	383	0.555	4.44	1.18%	0
100		8	141.5	139.6	143.4	138	144	0.2835	2.268	1.60%	0
Overall		16	259	194.3	323.7	138	383	30.35	121.4	46.87%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.838	7.535	8.14	7	8.2	0.04529	0.3623	4.62%	0
100		8	7.85	7.481	8.219	7	8.6	0.0551	0.4408	5.62%	0
Overall		16	7.844	7.636	8.051	7	8.6	0.09745	0.3898	4.97%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
100		8	32	32	32	32	32	0	0	0.00%	0
Overall		16	56	42.79	69.21	32	80	6.197	24.79	44.26%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8.038	7.994	8.081	8	8.1	0.00647	0.05176	0.64%	0
100		8	8.063	8	8.125	8	8.2	0.009301	0.07441	0.92%	0
Overall		16	8.05	8.016	8.084	8	8.2	0.01581	0.06325	0.79%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24.01	23.98	24.04	24	24.1	0.004414	0.03531	0.15%	0
Overall		16	24.01	23.99	24.02	24	24.1	0.00625	0.025	0.10%	0 (0%)

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Hand Delivered by H&A w/thiscopy of the COC	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	
.284 BGBMP0003_20230322	3/22/23	0920	G	WM	35	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Temp. deg. C = 0.3 °C
NOAA correction factor = +0.3
Chlorine (mg/L) = <0.1
NH3 (mg/L) = <0.1

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by: Michelle Dallalah	Company: H+A 1405	Date/Time: 3/23/2023	Received: Elizabeth Martinez	Date/Time: 3-23-23 / 1425
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 21 March - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 18.33 ug/l
EC50 = 26.67 ug/l

ENDPOINT: REPRODUCTION

NOEC = 5.00 ug/l

IC25 = 6.63 ug/l
IC50 = 8.45 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
14-9937-9653	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test		10	30	17.32	---	1
02-6188-0498	Reproduction	Steel Many-One Rank Sum Test	✓	5	10	7.071	12.9%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
05-0363-9181	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	15	13.33	20	1
				EC20	16.67	14.44	23.33	
				EC25	18.33	15.56	26.67	
				EC40	23.33	18.89	34	
				EC50	26.67	21.11	37.5	
08-0930-0440	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	5.896	5.417	6.089	1
			✓	IC20	6.261	5.815	6.452	
			✓	IC25	6.626	6.225	6.819	
			✓	IC40	7.722	7.388	7.929	
			✓	IC50	8.452	8.156	8.664	

Test Acceptability

Analysis ID	Endpoint	Attribute	Test Stat	TAC Limits Lower	Upper	Overlap	Decision
05-0363-9181	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
14-9937-9653	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
02-6188-0498	Reproduction	Control Resp	25.7	15	<<	Yes	Passes Criteria
08-0930-0440	Reproduction	Control Resp	25.7	15	<<	Yes	Passes Criteria
02-6188-0498	Reproduction	PMSD	0.1292	0.13	0.47	Yes	Below Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.4000	0.0306	0.7694	0.0000	1.0000	0.1633	0.5164	129.10%	60.00%
50		10	0.1000	-0.1262	0.3262	0.0000	1.0000	0.1000	0.3162	316.23%	90.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	25.7	23.85	27.55	21	30	0.8172	2.584	10.06%	0.00%
3		10	23.9	22.49	25.31	20	27	0.6227	1.969	8.24%	7.00%
5		10	26.1	24.47	27.73	22	31	0.7219	2.283	8.75%	-1.56%
10		10	7.4	6.175	8.625	5	11	0.5416	1.713	23.14%	71.21%
30		10	3.2	-0.3656	6.766	0	15	1.576	4.984	155.76%	87.55%
50		10	1.4	-1.767	4.567	0	14	1.4	4.427	316.23%	94.55%

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail

MD5: F4B702ADEF230AEDBE9418B3CD886DE2

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail

MD5: 983E619D3592AAD83E9946B3BFA7BC58

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Report Date: 06 Apr-23 12:25 (p 1 of 2)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	02-6188-0498	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	Nonparametric-Control vs Treatments	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	983E619D3592AAD83E9946B3BFA7BC58	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	5	10	7.071	---	3.321	12.92%

Steel Many-One Rank Sum Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	82.5	75	4	CDF	0.1507	Non-Significant Effect
		5	18	112	75	2	CDF	0.9455	Non-Significant Effect
		10*	18	55	75	0	CDF	0.0004	Significant Effect
		30*	18	55	75	0	CDF	0.0004	Significant Effect
		50*	18	55	75	0	CDF	0.0004	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	25.7	15	<<	Yes	Passes Criteria
PMSD	0.1292	0.13	0.47	Yes	Below Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	6979.88	1395.98	5	132.6	<1.0E-05	Significant Effect
Error	568.3	10.5241	54			
Total	7548.18		59			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	16.85	15.09	0.0048	Unequal Variances
	Levene Equality of Variance Test	1.972	3.377	0.0977	Equal Variances
	Mod Levene Equality of Variance Test	0.6306	3.377	0.6771	Equal Variances
Distribution	Anderson-Darling A2 Test	2.812	3.878	<1.0E-05	Non-Normal Distribution
	D'Agostino Kurtosis Test	4.038	2.576	5.4E-05	Non-Normal Distribution
	D'Agostino Skewness Test	5.011	2.576	<1.0E-05	Non-Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	41.42	9.21	<1.0E-05	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.1629	0.1331	0.0004	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.818	0.9459	<1.0E-05	Non-Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	25.7	23.85	27.55	25.5	21	30	0.8172	10.06%	0.00%
3		10	23.9	22.49	25.31	23.2	20	27	0.6227	8.24%	7.00%
5		10	26.1	24.47	27.73	26	22	31	0.7219	8.75%	-1.56%
10		10	7.4	6.175	8.625	7	5	11	0.5416	23.14%	71.21%
30		10	3.2	-0.3656	6.766	0	0	15	1.576	155.76%	87.55%
50		10	1.4	-1.767	4.567	0	0	14	1.4	316.23%	94.55%

CETIS Analytical Report

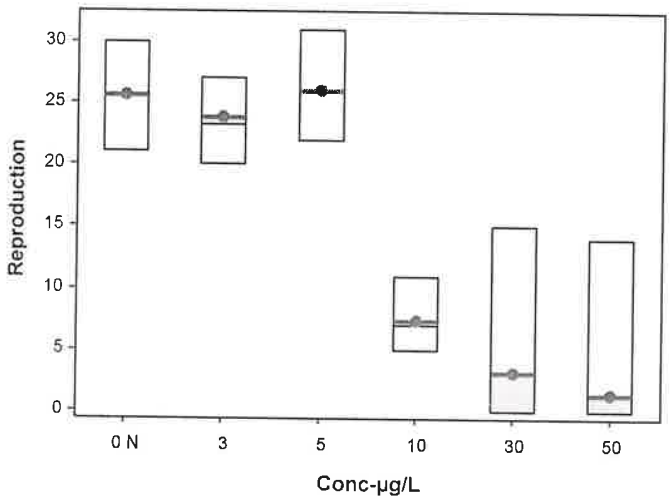
Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

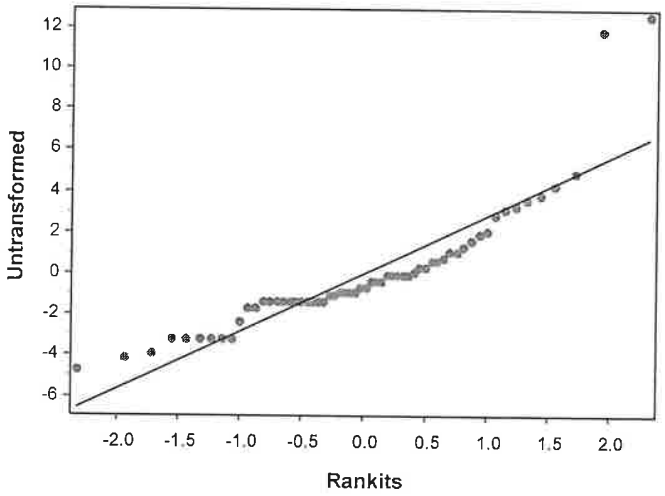
Analysis ID:	02-6188-0498	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	983E619D3592AAD83E9946B3BFA7BC58	**Editor ID:**	009-702-627-3

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

Graphics





CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-0363-9181	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	F4B702ADEF230AEDBE9418B3CD886DE	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	15	13.33	20
EC20	16.67	14.44	23.33
EC25	18.33	15.56	26.67
EC40	23.33	18.89	34
EC50	26.67	21.11	37.5

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣA/ΣB	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.4000	0.0000	0.0000	1.0000	129.10%	60.00%	4/10	0.4000	60.00%
50		10	0.1000	0.0000	0.0000	1.0000	316.23%	90.00%	1/10	0.1000	90.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

7d Survival Rate Binomials

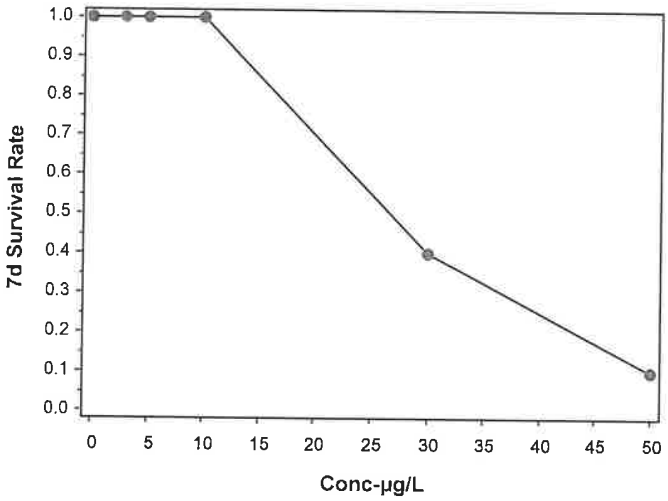
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-0363-9181	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	F4B702ADEF230AEDBE9418B3CD886DE	**Editor ID:**	009-702-627-3

Graphics



CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	08-0930-0440	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	983E619D3592AAD83E9946B3BFA7BC58	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	49588	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	25.7	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	5.896	5.417	6.089
IC20	6.261	5.815	6.452
IC25	6.626	6.225	6.819
IC40	7.722	7.388	7.929
IC50	8.452	8.156	8.664

Reproduction Summary

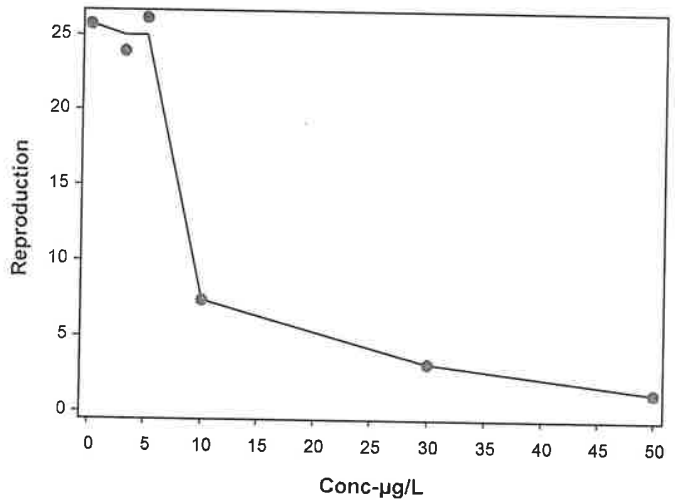
			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	25.7	25.5	21	30	10.06%	0.00%	25.7	0.00%
3		10	23.9	23.2	20	27	8.24%	7.00%	25	2.72%
5		10	26.1	26	22	31	8.75%	-1.56%	25	2.72%
10		10	7.4	7	5	11	23.14%	71.21%	7.4	71.21%
30		10	3.2	0	0	15	155.76%	87.55%	3.2	87.55%
50		10	1.4	0	0	14	316.23%	94.55%	1.4	94.55%

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

Analysis ID:	08-0930-0440	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	983E619D3592AAD83E9946B3BFA7BC58	**Editor ID:**	009-702-627-3

Graphics



CETIS Analytical Report

Report Date: 06 Apr-23 12:26 (p 1 of 2)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	14-9937-9653	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	F4B702ADEF230AEDBE9418B3CD886DE	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0054	Exact	0.0217	Significant Effect
		50*	0.0001	Exact	0.0003	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		4	6	10	0.4000	0.6000	60.00%
50		1	9	10	0.1000	0.9000	90.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.4000	0.0306	0.7694	0.0000	0.0000	1.0000	0.1633	129.10%	60.00%
50		10	0.1000	0.0000	0.3262	0.0000	0.0000	1.0000	0.1000	316.23%	90.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

Ceriodaphnia 7-d Survival and Reproduction Test

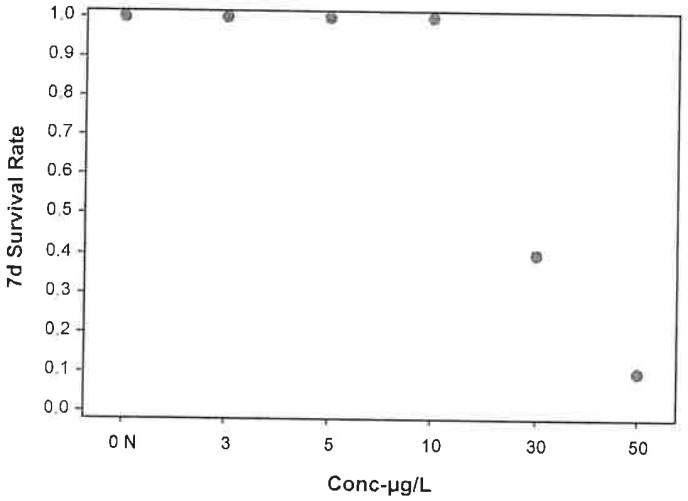
Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	14-9937-9653	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	F4B702ADEF230AEDBE9418B3CD886DE	**Editor ID:**	009-702-627-3

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	13-3375-5897	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	21 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	28 Mar-23 14:05	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	03-4411-3507	**Code:**	CER032123	**Project:**	REF TOX
Sample Date:	21 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	61.25	59.31	63.19	60	65	0.2893	2.315	3.78%	0
50		8	60	60	60	60	60	0	0	0.00%	0
Overall		16	60.62	59.71	61.54	60	65	0.427	1.708	2.82%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	376.2	371	381.5	370	387	0.7785	6.228	1.66%	0
3		8	369.2	368.7	369.8	368	370	0.08839	0.7071	0.19%	0
5		8	375.1	366.4	383.9	369	394	1.312	10.49	2.80%	0
10		8	374.5	366.5	382.5	367	390	1.203	9.621	2.57%	0
30		8	375.2	367.3	383.2	367	391	1.191	9.528	2.54%	0
50		8	375.6	367.7	383.6	365	391	1.191	9.531	2.54%	0
Overall		48	374.3	371.9	376.7	365	394	1.196	8.286	2.21%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.825	7.529	8.121	7	8.2	0.04419	0.3536	4.52%	0
3		8	7.763	7.491	8.034	7	8.1	0.04061	0.3249	4.19%	0
5		8	7.725	7.469	7.981	7	8	0.03824	0.3059	3.96%	0
10		8	7.688	7.449	7.926	7	7.9	0.03563	0.285	3.71%	0
30		8	7.688	7.445	7.93	7	7.9	0.03625	0.29	3.77%	0
50		8	7.688	7.445	7.93	7	7.9	0.03625	0.29	3.77%	0
Overall		48	7.729	7.643	7.815	7	8.2	0.04283	0.2968	3.84%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
50		8	99	99	99	99	99	0	0	0.00%	0
Overall		16	89.5	84.27	94.73	80	99	2.453	9.812	10.96%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.975	7.901	8.049	7.8	8.1	0.01108	0.08864	1.11%	0
3		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
5		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
10		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
30		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
50		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
Overall		48	7.985	7.966	8.004	7.8	8.1	0.009411	0.0652	0.82%	0 (0%)

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		8	24	24	24	24	24	0	0	0.00%	0
50		8	24	24	24	24	24	0	0	0.00%	0
Overall		48	24	24	24	24	24	0	0	0.00%	0 (0%)

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calsc

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

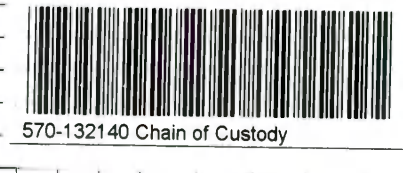
TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9906	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl, F, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Check Labs in Hacienda Heights, CA	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221) Enthalpy Analytical in Orange, CA
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 L ~~1-250mL Poly~~ Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile
1 – BGBMP0003_20230322	3-22-23	0920	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2 – TB_20230322-2	3-22-23	0920	TB	WM	3	N	N														x			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings	
Meter Serial #	
Time of Readings	0920
DO (mg/L)	16.83
pH	7.93
Temp (°C/°F)	9.81 °C
TRC (mg/L)	
Checked by:	MMD
Date/Time:	3-22-23 1200



Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

	1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

	Company	Date/Time	Received by	Company	Date/Time
Relinquished by: Michelle Dalbelet	H+A	1352 3-22-23	Received by: EC		3/22/23 1352
Relinquished by: EC	EC	3/22/23 1825	Received by: EC		3/22/23 1825
Relinquished by:			Received in Laboratory by:		

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.1/2.1 1.9/1.9 2.8/2.8 2.3/2.3
Soil

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

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Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315MOD-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
					38			2-500mL Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	2-500mL Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	2-500mL Poly	
1 — BGBMP0003_20230322	3-22-23	0920	G	WM	~~36~~	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	~~x~~	x	x	x	x	
3 — TB_20230322	3-22-23	0920	TB	WM	3	N	N				X										~~X~~					
4 — TB_20230322	3-22-23	0920	TB	WM	3	N	N														X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ☐ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.:

	Company	Date/Time		Date/Time
Relinquished by: Michelle Dalla Costa	H+A 13:52	3-22-23	Received: EC	3/22/23 1352
Relinquished by:	EC	3/23/23 1825	Received:	
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132140-6

Login Number: 132140
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:43:27 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132140-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

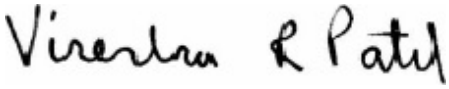
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
4/9/2023 10:43:27 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-7

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-7

Job ID: 570-132140-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132140-7

Receipt
The samples were received on 3/22/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9°C, 2.1°C, 2.3°C and 2.8°C

SUBCONTRACTING

The following analysis was subcontracted to EMSL Analytical, Inc.:
Asbestos 100.2 - "Wastewater" matrix

Subcontract Lab non-Sister Lab
See attached subcontract report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-7

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132140-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132140-1	BGBMP0003_20230322	Water	03/22/23 09:20	03/22/23 18:25

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322307653
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/24/2023
Analyzed: 04/03/2023

Proj: 570-212086.1 | 570-132140-7 | Boeing SSFL ISRA and BMP - NEW | 57014595

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS					
						Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
								MFL (million fibers per liter)		
BGBMP0003_20230322 (570-132140-1) 322307653-0001	3/24/2023 01:50 PM	30	1288	0.2193	≥ 0.5 µm	None Detected	ND	0.20	<0.20	0.00 - 0.72
					> 10 µm only	None Detected	ND	0.20	<0.20	0.00 - 0.72

Collection Date/Time: *03/22/2023 09:20 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Kyeong Corbin (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 04/06/2023 18:05:00

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

#3223076 53
Chain of Custody Record

eurofins | Environment Testing

OrderID: 322307653

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212086.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132140-7
Address: 520 Mission Street,	Due Date Requested: 4/5/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

0.4°c

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BGBMP0003_20230322 (570-132140-1)	3/22/23	09:20 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/23/23 8135	FC	Annette Mckissack	03/24/23 1000	LA Testing
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

#322307653

OrderID: 322307653

ICOC No:
570-212086

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Level IV package needed. Screen as Wastewater matrix

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

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Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9906	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl, F, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Hach Labs in Hacienda Heights, CA	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221) Enthalpy Analytical in Orange, CA
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 L ~~1-250mL Poly~~ Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile
1 – BGBMP0003_20230322	3-22-23	0920	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2 – TB_20230322-2	3-22-23	0920	TB	WM	3	N	N														x			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #
Time of Readings 0920
DO (mg/L) 16.83
pH 7.93
Temp (°C/°F) 9.81 °C
TRC (mg/L)
Checked by: MMD
Date/Time: 3-22-23 1200

570-132140 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

	1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
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Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ | Therm ID No.: ____

Relinquished by: Michelle Dalbelet	Company: H+A	Date/Time: 3-22-23 1352	Received by: EC	Date/Time: 3/22/23 1352
Relinquished by: EC	Company: EC	Date/Time: 3/22/23 1825	Received by: EC	Date/Time: 3/22/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.1/2.1 1.9/1.9 2.8/2.8 2.3/2.3
Soil

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

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5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315MOD-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
					38			2-500mL Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	2-500mL Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	2-500mL Poly	
1 BGBMP0003_20230322	3-22-23	0920	G	WM	~~38~~	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
3 TB_20230322	3-22-23	0920	TB	WM	3	N	N				X										~~X~~ 0					
4 TB_20230322	3-22-23	0920	TB	WM	3	N	N														X					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.:

	Company	Date/Time		Date/Time
Relinquished by: Michelle Dalla Costa	H+A 13:52	3-22-23	Received: EC	3/22/23 1352
Relinquished by:	EC	3/23/23 1825	Received:	
Relinquished by:			Received:	

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132140-7

Login Number: 132140
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/26/2023 8:13:07 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMp

JOB NUMBER

570-132140-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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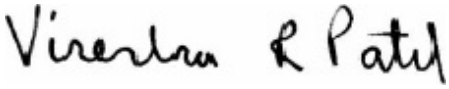
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132140-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132140-8

Comments
No additional comments.

Receipt
The samples were received on 3/22/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.9º C, 2.1º C, 2.3º C and 2.8º C.

RAD
Methods 900.0, 9310: Gross Alpha Beta prep batch 160-607836:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230322 (570-132140-1), (LCS 160-607836/2-A), (LCSB 160-607836/3-A), (MB 160-607836/1-A), (570-132013-J-1-C), (570-132013-J-1-F DU), (570-132013-J-1-D MS) and (570-132013-J-1-E MSBT)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20230322 (570-132140-1), (570-131073-AT-1-B) and (570-131073-AT-1-C DU)

Method 901.1: Gamma Prep Batch 160-605774
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often,

Job ID: 570-132140-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

BGBMP0003_20230322 (570-132140-1), (570-132015-K-1-D) and (570-132015-K-1-E DU)

Methods 903.0, 9315: Radium-226 prep batch 160-605743:

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date. BGBMP0003_20230322 (570-132140-1), (LCS 160-605743/2-A), (MB 160-605743/1-A), (240-182534-F-2-A) and (240-182534-E-2-A DU)

Methods 904.0, 9320: Radium-228 Batch 605748
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230322 (570-132140-1), (LCS 160-605748/2-A), (MB 160-605748/1-A), (240-182534-F-2-B) and (240-182534-E-2-B DU)

Method 905: Strontium-90 batch 606565
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230322 (570-132140-1), (LCS 160-606565/2-A), (LCSD 160-606565/3-A) and (MB 160-606565/1-A)

Method 905: Strontium-90 batch 607355
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230322 (570-132140-1), (LCS 160-607355/2-A), (MB 160-607355/1-A), (280-174032-D-4-A) and (280-174032-C-4-A DU)

Job ID: 570-132140-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 906.0: Tritium 607890
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are decay corrected to sample date and time as the Activity Reference Date. BGBMP0003_20230322 (570-132140-1), (LCS 160-607890/2-A), (MB 160-607890/1-A), (570-131938-I-1-A), (570-131938-I-1-B DU), (570-132136-Q-1-A) and (570-132136-Q-1-B MS)

Methods A-01-R, U-02-RC: Isotopic Uranium batch 607182
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230322 (570-132140-1), (LCS 160-607182/2-A), (MB 160-607182/1-A), (570-131945-N-1-E) and (570-131945-N-1-F DU)

Method A-01-R: Isotopic Uranium batch 607366
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
BGBMP0003_20230322 (570-132140-1), (LCS 160-607366/2-A), (MB 160-607366/1-A), (570-132013-K-1-E) and (570-132013-K-1-F DU)

Method ExtChrom:

Method ExtChrom: Uranium Prep Batch 160-607366:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: BGBMP0003_20230322 (570-132140-1).

Method PrecSep_0:

Method PrecSep-21:

Method PrecSep-7: Strontium-90 Prep Batch 606565

The following sample was prepared at a reduced aliquot due to Matrix: BGBMP0003_20230322 (570-132140-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Client Sample ID: BGBMP0003_20230322
Lab Sample ID: 570-132140-1

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: BGBMP0003_20230322
Lab Sample ID: 570-132140-1
Date Collected: 03/22/23 09:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.19	U	1.07	1.08	3.00	1.69	pCi/L	04/17/23 13:56	04/25/23 16:49	1
Gross Beta	**1.62**		0.660	0.680	4.00	0.901	pCi/L	04/17/23 13:56	04/25/23 16:49	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMp

Job ID: 570-132140-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.16	U	1.07	1.08	3.00	1.70	pCi/L	04/17/23 13:56	04/25/23 16:50	1
Gross Beta	**1.21**		0.677	0.688	4.00	1.00	pCi/L	04/17/23 13:56	04/25/23 16:50	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: BGBMP0003_20230322
Lab Sample ID: 570-132140-1
Date Collected: 03/22/23 09:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.518	U	7.03	7.04	20.0	8.82	pCi/L	03/28/23 16:33	04/12/23 16:54	1
Potassium-40	-39.6	U	72.3	72.5		112	pCi/L	03/28/23 16:33	04/12/23 16:54	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: BGBMP0003_20230322
Lab Sample ID: 570-132140-1
Date Collected: 03/22/23 09:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-5.01	U	9.11	9.13	20.0	10.8	pCi/L	03/31/23 15:10	04/13/23 14:39	1
Potassium-40	-78.6	U	83.0	83.5		155	pCi/L	03/31/23 15:10	04/13/23 14:39	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMp

Job ID: 570-132140-8

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0171	U	0.140	0.140	1.00	0.267	pCi/L	03/31/23 10:18	04/25/23 20:50	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.1*		*30 - 110*	*03/31/23 10:18*	*04/25/23 20:50*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMp

Job ID: 570-132140-8

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.132	U	0.133	0.134	1.00	0.212	pCi/L	03/31/23 10:18	04/25/23 20:52	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.1*		*30 - 110*	*03/31/23 10:18*	*04/25/23 20:52*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMp

Job ID: 570-132140-8

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.261	U	0.367	0.367	1.00	0.619	pCi/L	03/31/23 10:42	04/21/23 12:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.1*		*30 - 110*	*03/31/23 10:42*	*04/21/23 12:28*	*1*
Y Carrier	*85.2*		*30 - 110*	*03/31/23 10:42*	*04/21/23 12:28*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMp

Job ID: 570-132140-8

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230322
Date Collected: 03/22/23 09:20
Date Received: 03/22/23 18:25

Lab Sample ID: 570-132140-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	**0.694**		0.405	0.410	1.00	0.568	pCi/L	03/31/23 10:42	04/21/23 12:28	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*90.1*		*30 - 110*	*03/31/23 10:42*	*04/21/23 12:28*	*1*
Y Carrier	*93.8*		*30 - 110*	*03/31/23 10:42*	*04/21/23 12:28*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: BGBMP0003_20230322
Lab Sample ID: 570-132140-1
Date Collected: 03/22/23 09:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.981		0.519	0.525	3.00	0.757	pCi/L	04/07/23 11:12	04/17/23 19:13	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*88.8*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:13*	*1*
Y Carrier	*63.2*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:13*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: BGBMP0003_20230322
Lab Sample ID: 570-132140-1
Date Collected: 03/22/23 09:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	**0.695**		0.394	0.398	3.00	0.582	pCi/L	04/13/23 14:59	04/24/23 19:24	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.6*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:24*	*1*
Y Carrier	*83.0*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:24*	*1*

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: BGBMP0003_20230322
Lab Sample ID: 570-132140-1
Date Collected: 03/22/23 09:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-194	U	204	205	500	412	pCi/L	04/18/23 11:12	04/19/23 10:07	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: BGBMP0003_20230322
Lab Sample ID: 570-132140-1
Date Collected: 03/22/23 09:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.185	U	0.198	0.199	1.00	0.236	pCi/L	04/12/23 15:01	04/17/23 22:46	1

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: BGBMP0003_20230322
Lab Sample ID: 570-132140-1
Date Collected: 03/22/23 09:20
Matrix: Water
Date Received: 03/22/23 18:25

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.295	U	0.273	0.274	1.00	0.356	pCi/L	04/13/23 16:15	04/20/23 11:24	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMp

Job ID: 570-132140-8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Ba							
Lab Sample ID	Client Sample ID	(30-110)							
570-132140-1	BGBMP0003_20230322	86.1							
LCS 160-605743/2-A	Lab Control Sample	83.5							
MB 160-605743/1-A	Method Blank	91.9							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)							
		Ba							
Lab Sample ID	Client Sample ID	(30-110)							
570-132140-1	BGBMP0003_20230322	90.1							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Ba	Y						
Lab Sample ID	Client Sample ID	(30-110)	(30-110)						
570-132140-1	BGBMP0003_20230322	86.1	85.2						
LCS 160-605748/2-A	Lab Control Sample	83.5	96.4						
MB 160-605748/1-A	Method Blank	91.9	95.3						

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water — **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)							
		Ba	Y						
Lab Sample ID	Client Sample ID	(30-110)	(30-110)						
570-132140-1	BGBMP0003_20230322	90.1	93.8						

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Sr	Y						
Lab Sample ID	Client Sample ID	(30-110)	(30-110)						
570-132140-1	BGBMP0003_20230322	88.8	63.2						
LCS 160-606565/2-A	Lab Control Sample	86.3	77.0						
LCS 160-607355/2-A	Lab Control Sample	86.2	84.1						

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc. Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Method: 905 - Strontium-90 (GFPC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
LCSD 160-606565/3-A	Lab Control Sample Dup	85.1	69.9
MB 160-606565/1-A	Method Blank	86.6	81.9
MB 160-607355/1-A	Method Blank	87.8	85.6

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-132140-1	BGBMP0003_20230322	87.6	83.0

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-607182/2-A	Lab Control Sample	76.8
LCS 160-607366/2-A	Lab Control Sample	78.6
MB 160-607182/1-A	Method Blank	81.7
MB 160-607366/1-A	Method Blank	81.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-607836/1-A
Matrix: Water
Analysis Batch: 608625

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607836

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.3289	U	0.689	0.690	3.00	1.20	pCi/L	04/17/23 13:56	04/24/23 19:44	1
Gross Beta	-0.3433	U	0.470	0.471	4.00	0.893	pCi/L	04/17/23 13:56	04/24/23 19:44	1

Lab Sample ID: LCS 160-607836/2-A
Matrix: Water
Analysis Batch: 608625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607836

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	65.01		9.17	3.00	2.07	pCi/L	129	75 - 125

Lab Sample ID: LCSB 160-607836/3-A
Matrix: Water
Analysis Batch: 608669

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607836

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.3	73.26		7.85	4.00	0.822	pCi/L	100	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-605283/1-A
Matrix: Water
Analysis Batch: 607160

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605283

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.793	U	6.67	6.68	20.0	7.49	pCi/L	03/28/23 16:33	04/12/23 04:01	1
Potassium-40	27.15	U	82.6	82.7		106	pCi/L	03/28/23 16:33	04/12/23 04:01	1

Lab Sample ID: LCS 160-605283/2-A
Matrix: Water
Analysis Batch: 607188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605283

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	139700		16600		562	pCi/L	103	75 - 125
Cesium-137	40800	39690		4740	20.0	156	pCi/L	97	75 - 125
Cobalt-60	17700	17220		2060		78.1	pCi/L	97	75 - 125

Lab Sample ID: MB 160-605774/1-A
Matrix: Water
Analysis Batch: 607321

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605774

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-7.022	U	12.9	12.9	20.0	15.4	pCi/L	03/31/23 15:10	04/13/23 14:40	1
Potassium-40	-5.858	U	119	119		163	pCi/L	03/31/23 15:10	04/13/23 14:40	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-605774/2-A
Matrix: Water
Analysis Batch: 607326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605774

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	154200		18300		291	pCi/L	114	75 - 125
Cesium-137	40800	42460		5060	20.0	81.7	pCi/L	104	75 - 125
Cobalt-60	17700	18450		2200		56.4	pCi/L	104	75 - 125

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-605743/1-A
Matrix: Water
Analysis Batch: 608689

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605743

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.004855	U	0.0609	0.0609	1.00	0.127	pCi/L	03/31/23 10:18	04/25/23 18:44	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.9*		*30 - 110*	*03/31/23 10:18*	*04/25/23 18:44*	*1*

Lab Sample ID: LCS 160-605743/2-A
Matrix: Water
Analysis Batch: 608689

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605743

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	11.92		1.29	1.00	0.143	pCi/L	105	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*83.5*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-605748/1-A
Matrix: Water
Analysis Batch: 608478

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605748

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.07730	U	0.234	0.234	1.00	0.422	pCi/L	03/31/23 10:42	04/21/23 12:15	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.9*		*30 - 110*	*03/31/23 10:42*	*04/21/23 12:15*	*1*
Y Carrier	*95.3*		*30 - 110*	*03/31/23 10:42*	*04/21/23 12:15*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-605748/2-A
Matrix: Water
Analysis Batch: 608478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605748

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.02	9.911		1.33	1.00	0.456	pCi/L	124	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*83.5*		*30 - 110*
Y Carrier	*96.4*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-606565/1-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606565

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1675	U	0.204	0.204	3.00	0.337	pCi/L	04/07/23 11:12	04/17/23 19:03	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.6*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*
Y Carrier	*81.9*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*

Lab Sample ID: LCS 160-606565/2-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.570		0.853	3.00	0.305	pCi/L	103	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*86.3*		*30 - 110*
Y Carrier	*77.0*		*30 - 110*

Lab Sample ID: LCSD 160-606565/3-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.34	7.501		0.887	3.00	0.401	pCi/L	102	75 - 125	0.04	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.1*		*30 - 110*
Y Carrier	*69.9*		*30 - 110*

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: MB 160-607355/1-A
Matrix: Water
Analysis Batch: 608494

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607355

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1022	U	0.206	0.206	3.00	0.351	pCi/L	04/13/23 14:59	04/24/23 19:21	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.8*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:21*	*1*
Y Carrier	*85.6*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:21*	*1*

Lab Sample ID: LCS 160-607355/2-A
Matrix: Water
Analysis Batch: 608494

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607355

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.33	7.451		0.832	3.00	0.288	pCi/L	102	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*86.2*		*30 - 110*
Y Carrier	*84.1*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-607890/1-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607890

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-102.7	U	224	224	500	433	pCi/L	04/18/23 11:12	04/19/23 06:41	1

Lab Sample ID: LCS 160-607890/2-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607890

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2090	1604		396	500	420	pCi/L	77	75 - 125		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-607182/1-A
Matrix: Water
Analysis Batch: 607712

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607182

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.08287	U	0.138	0.138	1.00	0.229	pCi/L	04/12/23 15:01	04/17/23 22:47	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-607182/2-A
Matrix: Water
Analysis Batch: 607726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607182

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	14.02		1.67	1.00	0.196	pCi/L	110	75 - 125		
Uranium-238			13.0	15.41		1.79	1.00	0.168	pCi/L	118	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*76.8*		*30 - 110*

Lab Sample ID: MB 160-607366/1-A
Matrix: Water
Analysis Batch: 608244

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607366

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.04490	U	0.1166	0.1166	1.00	0.179	pCi/L	04/13/23 16:15	04/20/23 11:24	1

Lab Sample ID: LCS 160-607366/2-A
Matrix: Water
Analysis Batch: 608246

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607366

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.15		1.59	1.00	0.240	pCi/L	103	75 - 125		
Uranium-238			13.0	13.65		1.63	1.00	0.159	pCi/L	105	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*78.6*		*30 - 110*

Rad

Filtration Batch: 605051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	Filtration	
570-132140-1	BGBMP0003_20230322	Dissolved	Water	Filtration	

Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	Fill_Geo-0	
MB 160-605283/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605283/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 605743

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	PrecSep-21	605051
570-132140-1	BGBMP0003_20230322	Total/NA	Water	PrecSep-21	
MB 160-605743/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-605743/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 605748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	PrecSep_0	605051
570-132140-1	BGBMP0003_20230322	Total/NA	Water	PrecSep_0	
MB 160-605748/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-605748/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 605774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	Fill_Geo-0	605051
MB 160-605774/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605774/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 606565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	PrecSep-7	
MB 160-606565/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-606565/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-606565/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 607182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	ExtChrom	
MB 160-607182/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-607182/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 607355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	PrecSep-7	605051
MB 160-607355/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-607355/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 607366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	ExtChrom	605051

Rad (Continued)

Prep Batch: 607366 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 160-607366/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-607366/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 607836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Dissolved	Water	Evaporation	605051
570-132140-1	BGBMP0003_20230322	Total/NA	Water	Evaporation	
MB 160-607836/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-607836/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-607836/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 607890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132140-1	BGBMP0003_20230322	Total/NA	Water	LSC_Dist_Susp	
MB 160-607890/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-607890/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Client Sample ID: BGBMP0003_20230322
Lab Sample ID: 570-132140-1

Date Collected: 03/22/23 09:20
Matrix: Water

Date Received: 03/22/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			3800 mL	3800 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	Evaporation			200 mL	1.0 g	607836	04/17/23 13:56	MST	EET SL
Dissolved	Analysis	900.0		1	1.0 mL	1.0 mL	608689	04/25/23 16:50	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			199.99 mL	1.0 g	607836	04/17/23 13:56	MST	EET SL
Total/NA	Analysis	900.0		1	1.0 mL	1.0 mL	608689	04/25/23 16:49	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	605774	03/31/23 15:10	AJP	EET SL
Dissolved	Analysis	901.1		1			607330	04/13/23 14:39	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Total/NA	Analysis	901.1		1			607192	04/12/23 16:54	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	PrecSep-21			743.12 mL	1.0 g	605743	03/31/23 10:18	DJP	EET SL
Dissolved	Analysis	903.0		1			608691	04/25/23 20:52	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	PrecSep-21			756.66 mL	1.0 g	605743	03/31/23 10:18	DJP	EET SL
Total/NA	Analysis	903.0		1			608689	04/25/23 20:50	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	PrecSep_0			743.12 mL	1.0 g	605748	03/31/23 10:42	DJP	EET SL
Dissolved	Analysis	904.0		1			608479	04/21/23 12:28	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			756.66 mL	1.0 g	605748	03/31/23 10:42	DJP	EET SL
Total/NA	Analysis	904.0		1			608479	04/21/23 12:28	FLC	EET SL
	Instrument ID: GFPCORANGE									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	PrecSep-7			496.26 mL	1.0 g	607355	04/13/23 14:59	KAC	EET SL
Dissolved	Analysis	905		1			608494	04/24/23 19:24	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			499.49 mL	1.0 g	606565	04/07/23 11:12	DJP	EET SL
Total/NA	Analysis	905		1			607842	04/17/23 19:13	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	LSC_Dist_Susp			99.45 mL	1.0 g	607890	04/18/23 11:12	ZR	EET SL
Total/NA	Analysis	906.0		1			608161	04/19/23 10:07	REV	EET SL
	Instrument ID: LSC3180									
Dissolved	Filtration	Filtration			3800 mL	3800 mL	605051	03/26/23 16:23	SRE	EET SL
Dissolved	Prep	ExtChrom			255.03 mL	1.0 mL	607366	04/13/23 16:15	SEH	EET SL
Dissolved	Analysis	A-01-R		1			608250	04/20/23 11:24	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			500.54 mL	1.0 mL	607182	04/12/23 15:01	SRE	EET SL
Total/NA	Analysis	A-01-R		1			607725	04/17/23 22:46	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client: Haley & Aldrich, Inc.
Job ID: 570-132140-8
Project/Site: Boeing SSFL ISRA and BMp

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
j ro/ectSBite: goeinF BBLRIBMA and gNE

Job ID: 570-132140-P

Laboratory: Eurofins St. Louis

All accreditationW8certisicationWheld by thiWlaboratory are liWed. f ot all accreditationW8certisicationWare aEEIicable to thiWreEort.

Authority	Program	Identification Number	Expiration Date
AlaWpa k(BUT	Btate	20-001	05-0) -25
Af Ag	DeEt. osDesenWe 6RAj	R2305	04-0) -25
Af Ag	DeEt. os6nerFy	R2305.01	04-0) -25
Af Ag	IBOS36C 17025	R2305	04-0) -25
Arizona	Btate	AZ0P13	12-0P-23
Calisornia	RoWAnFeleWCo8nty Banitation DiWtrictW	1025u	0) -30-22 9
Calisornia	Btate	2PP)	0) -30-23
LIorida	f 6RAj	6P7) Pu	0) -30-23
HI - MadChe* MecoFnition	Btate	nSa	0) -30-23
IllinoiW	f 6RAj	200023	11-30-23
Ioma	Btate	373	12-01-24
wanWaW	f 6RAj	6-1023)	10-31-23
went8cpy kDK T	Btate	wYu0125	12-31-23
went8cpy kK K T	Btate	wYu0125 kj er* it wY000404uT	12-31-23
Ro8iWana kAIIT	f 6RAj	040P0	0) -30-23
Ro8iWana kDK T	Btate	RA011	12-31-23
Naryland	Btate	310	0u-30-23
NI - MadChe* MecoFnition	Btate	u005	0) -30-23
NiWt8ri	Btate	7P0	0) -30-25
f evada	Btate	NO000542020-1	07-31-23
f em JerWey	f 6RAj	NO002	0) -30-23
f em Yorp	f 6RAj	11) 1)	03-31-24
f orth Carolina kDK T	Btate	2u700	07-31-23
f orth Dapota	Btate	M-207	0) -30-23
Oplaho* a	f 6RAj	uuu7	0P-31-23
OreFon	f 6RAj	4157	0u-01-23
j ennWylvania	f 6RAj	) P-00540	02-2P-24
Bo8th Carolina	Btate	P5002001	0) -30-23
UexaW	f 6RAj	U1047041u3	07-31-23
(B LiWh & K ildlise	(B Lederal j roFra* W	05P44P	07-31-23
(BDA	(B Lederal j roFra* W	j 330-17-0002P	0) -11-23
(tah	f 6RAj	NO000542021-14	07-31-23
VirFinia	f 6RAj	10310	0) -14-23
K aWhinFton	Btate	C5u2	0P-30-23
K eWt VirFinia D6j	Btate	3P1	10-31-23

9 AccreditationSCertisication renemal EendinF - accreditationSertisication conWidered valid.

68rosinWCalWcience

Method Summary

Client: Haylin & Ardiroen, . It hP
Job ID: 570-124160-C
jco/nhHSBeln: gonet F BBLRIBMd yt r gE 9

Method	Method Description	Protocol	Laboratory
s00P0	pcovv di9, y yt r pcovv gnHy Myr eoyhHeTeH&	Gjd	GGu BR
s01P1	Invem3 127 A OH,Incp y3 3 y G3 eHnov (p B)	Gjd	GGu BR
s02P0	Myr em3 -448 (p Lj I)	Gjd	GGu BR
s06P0	Myr em3 -44C (p Lj I)	Gjd	GGu BR
s05	BHot Hem3 -s0 (p Lj I)	Gjd	GGu BR
s08P0	uoeHem3 . uoHyi (RBI)	Gjd	GGu BR
d-01-M	Ivoho9en Uoyt em3 (di9, y B9nhHo3 nHo&)	DOG	GGu BR
GTy9ocyHot	jcn9yoyHot . GTy9ocyHot	Not n	GGu BR
GxHI , co3	jcn9yoyHot . GxHoyhHot I , co3 yHoFoy9, & Mnvet dhHeter n Bn9yoyHot	Not n	GGu BR
Leii_p no-0	Leii p no3 nHo& No It -p cowH,	Not n	GGu BR
LeiHoyHot	By3 9in LeiHoyHot	Not n	GGu BR
RBI _DevH_Bmv9	DevHeiyHot yt r Bmv9nt veot (RBI)	Not n	GGu BR
jcnhBn9_0	jcn9yoyHot . jcnhe9eHyHn Bn9yoyHot	Not n	GGu BR
jcnhBn9-41	jcn9yoyHot . jcnhe9eHyHn Bn9yoyHot (41-Dy& It -p cowH,)	Not n	GGu BR
jcnhBn9-7	jcn9yoyHot . jcnhe9eHyHn Bn9yoyHot (7-Dy& It -p cowH,)	Not n	GGu BR

Protocol References:

DOG = UPBPDn9ydH3 nt Hof Gt ncF&

Gjd = UB Gt Teoot 3 nt Hyi jcoHnhHot d Fnt h&

Not n = Not n

Laboratory References:

GGu BR = Gmcofet v BHPRome v. 12715 Mer ncucyei NodH, . GydH, I eH& E O 82065. uGR (216)4sC-C588

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMp

Job ID: 570-132140-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132140-1	BGBMP0003_20230322	Water	03/22/23 09:20	03/22/23 18:25

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calsc

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9906	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl, F, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624) Hack Labs in Hacienda Heights, CA	bis (2-ethylhexyl) phthalate (E625.1)	Cyanide (SM 4500-CN-E)	E. coli (SM9221) Enthalpy Analytical in Orange, CA
								2-1L Amber	1-1L Poly	1-1L Poly	1-2.5 Gal Cube	1-2.5 Gal Cube	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1 L ~~1-250mL Poly~~ Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	2-1L Amber	1-500mL Poly	3-125 mL sterile
1 – BGBMP0003_20230322	3-22-23	0920	G	WM	23	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2 – TB_20230322-2	3-22-23	0920	TB	WM	3	N	N														x			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #
Time of Readings 0920
DO (mg/L) 16.83
pH 7.93
Temp (°C/°F) 9.81 °C
TRC (mg/L)
Checked by: MMD
Date/Time: 3-22-23 1200

570-132140 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

	1	1	1	1	1	1	1	1	1	1	1	4	2	1	2	1	5	6

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.: | Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.: ____

Relinquished by: Michelle Dalbelet	Company: H+A	1352 3-22-23	Received by: EC		3/22/23 1352
Relinquished by: EC	Company: EC	3/22/23 1825	Received by: EC		3/22/23 1825
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

2.1/2.1 1.9/1.9 2.8/2.8 2.3/2.3
Soil

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3-22-23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only A+A+2CVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315MOD-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	
					38			2-500mL Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	2-500mL Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	2-500mL Poly	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
1 – BGBMP0003_20230322	3-22-23	0920	G	WM	~~38~~	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	~~x~~	x	x	x	x	
3 – TB_20230322	3-22-23	0920	TB	WM	3	N	N				X										~~X~~					
4 – TB_20230322	3-22-23	0920	TB	WM	3	N	N														X					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ___ Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dalla Costa	Company: H+A 13:52	Date/Time: 3-22-23	Received: EC		Date/Time: 3/23/23 1352
Relinquished by:	Company: EC	Date/Time: 3/23/23 1825	Received:		Date/Time:
Relinquished by:	Company:	Date/Time:	Received:		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212339.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132140-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/24/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP - NEW	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha/Beta - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
BGBMP0003_20230322 (570-132140-1)	3/22/23	09:20 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	3	Boeing SSFL; DO NOT FILTER; use prep date from preservation



Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/23/23 15:15	EC		3/24/23 0910	EBSL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/26/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132140-8

Login Number: 132140

List Number: 1

Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132140-8

Login Number: 132140
List Number: 3
Creator: Awalt, Jayna K

List Source: Eurofins St. Louis
List Creation: 03/24/23 06:52 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132333-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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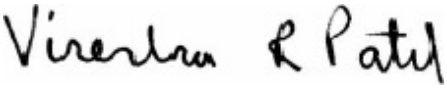

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Authorized for release by
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-1

Qualifiers

GC/MS mV O

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Sep i mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LR	LCS/LCSD recovery below method control limits

HPLC/IC

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier DesAriction
BB	Sample > 4X spike concentration
BU	Sample was prepped beyond the specified holding time
IB	CCV recovery above limit; analyte not detected
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits
MB	Analyte present in the method blank

General Chep istry

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)

Glossary (Continued)

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132333-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132333-1

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.9º C and 3.1º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-314233. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-314624.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 570-316081 and analytical batch 570-316467 recovered outside control limits for the following analytes: Benzidine.

Method 625.1 SIM: The laboratory control sample (LCS) for preparation batch 570-316081 and analytical batch 570-316467 recovered outside acceptance limits for 1,2,4-Trichlorobenzene. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

Method 625.1 SIM: The continuing calibration verification (CCV) associated with batch 570-316467 recovered above the upper control limit for Benzidine. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: EPBMC_20230323 (570-132333-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.7 Rev 4.4: The matrix spike duplicate (MSD) recoveries and precision of Calcium and Magnesium for preparation batch 570-314531 and analytical batch 570-315160 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) was within acceptance limits

Method 200.8: The continuing calibration verification (CCV) associated with batch 570-314988 recovered above the upper control limit for Beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: EPBMC_20230323 (570-132333-1).

Method 200.8: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-314528 and analytical batch 570-314988 recovered outside control limits for the following analytes: Beryllium. These analytes were biased high in

Job ID: 570-132333-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 200.8: The continuing calibration verification (CCV) associated with batch 570-315053 recovered above the upper control limit for Beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: EPBMC_20230323 (570-132333-1).

Method 200.8: The method blank for preparation batch 570-314924 and analytical batch 570-315053 contained Manganese above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBMC_20230323 (570-132333-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBMC_20230323 (570-132333-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method Kelada 01: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 570-315871 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method SM 2540F: Insufficient sample volume was available to perform a sample duplicate (DUP) associated with analytical batch 570-314439.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Methods 1664A, 1664B: The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-315782.
Method: 1664.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-315947. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 8015B_DRO.

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-316081. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-1

Client Sample ID: EPBMC_20230323 — Lab Sample ID: 570-132333-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.027	J,DX	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.022	J,DX	0.20	0.019	ug/L	1		218.6	Dissolved
Chloride	57		2.0	0.72	mg/L	2		300.0	Total/NA
Fluoride	0.50		0.20	0.092	mg/L	2		300.0	Total/NA
Nitrate as N	2.4		0.20	0.039	mg/L	2		300.0	Total/NA
Sulfate - DL	360		10	2.4	mg/L	10		300.0	Total/NA
Perchlorate	24		2.0	0.91	ug/L	1		314.0	Total/NA
Nitrate Nitrite as N	2.4		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	0.32	J,DX	0.50	0.0035	mg/L	1		200.7 Rev 4.4	Total Recoverable
Boron	0.29	J,DX BU	0.50	0.0035	mg/L	1		200.7 Rev 4.4	Dissolved
Aluminum	2200		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	1.5		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	70		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	4.1		2.0	0.14	ug/L	1		200.8	Total Recoverable
Cobalt	1.8		1.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	3.3		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	4000		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	97	MB	1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	3.4		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	1.5		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	0.88	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Zinc	11	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	4.1		2.0	0.52	ug/L	1		200.8	Total Recoverable
Arsenic	0.68	J,DX BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	50	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.18	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Cobalt	0.28	J,DX BU	1.0	0.14	ug/L	1		200.8	Dissolved
Copper	1.0	J,DX BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	11	J,DX BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	27	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	0.83	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Selenium	3.2	BU	2.0	0.52	ug/L	1		200.8	Dissolved
Hardness as calcium carbonate	560		7.1	0.50	mg/L	1		SM 2340B	Total Recoverable
Hardness as calcium carbonate	510		7.1	0.50	mg/L	1		SM 2340B	Dissolved
HEM (Oil & Grease)	0.67	J,DX	0.95	0.49	mg/L	1		1664A	Total/NA
Cr (III)	0.0041	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Ammonia	0.039	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	85		0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	1300		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	980		10	8.7	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPBMC_20230323 (Continued)
Lab Sample ID: 570-132333-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	260		1.3	1.0	mg/L	1		SM 2540D	Total/NA
Settleable Solids	1.0		0.10	0.10	mL/L	1		SM 2540F	Total/NA
Carbon, Total Organic	8.2		2.0	1.1	mg/L	4		SM 5310D	Total/NA
MBAS	0.067	J,DX	0.20	0.050	mg/L	1		SM 5540C	Total/NA
Clay (less than 0.00391 mm)	11.73		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	10.94		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	56.86		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	68.59		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	20.47		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: TB-20230323-1
Lab Sample ID: 570-132333-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBMC_20230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1h1h2-Ti rdHr c@dbi ncHei	MD		0,50	0,17	NBjF			03j2uj23 00:21	1
1h1h1-Tdr c@dbi ncHei	MD		0,50	0,25	NBjF			03j2uj23 00:21	1
1h1h2h2-Ti rdHr c@dbi ncHei	MD		0,50	0,20	NBjF			03j2uj23 00:21	1
1h1h2-Tdr c@db-1h2h2-rdfCbdbi ncHei	MD		2,0	0,33	NBjF			03j2uj23 00:21	1
1h1h2-Tdr c@dbi ncHei	MD		0,50	0,17	NBjF			03j2uj23 00:21	1
1h1-Dlr c@dbi ncHei	MD		0,50	0,39	NBjF			03j2uj23 00:21	1
1h1-Dlr c@dbi nci ei	MD		0,50	0,33	NBjF			03j2uj23 00:21	1
1h1-Dlr c@dbpdbpi ei	MD		0,50	0,22	NBjF			03j2uj23 00:21	1
1h2h3-Tdr c@dbbi ezi ei	MD		1,0	0,19	NBjF			03j2uj23 00:21	1
1h2h3-Tdr c@dbpdbpHei	MD		1,0	0,31	NBjF			03j2uj23 00:21	1
1h2hu-Tdr c@dbbi ezi ei	MD		1,0	0,29	NBjF			03j2uj23 00:21	1
1h2hu-Tdmi rcaC@i ezi ei	MD		0,50	0,28	NBjF			03j2uj23 00:21	1
1h2-Dlbdbmo-3-4 c@dbpdbpHei	MD		1,0	0,51	NBjF			03j2uj23 00:21	1
1h2-Dlbdbmoi ncHei	MD		0,50	0,19	NBjF			03j2uj23 00:21	1
1h2-Dlr c@db-1h1h2-rdfCbdbi ncHei	MD		2,0	0,58	NBjF			03j2uj23 00:21	1
1h2-Dlr c@dbbi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 00:21	1
1h2-Dlr c@dbi ncHei	MD		0,50	0,15	NBjF			03j2uj23 00:21	1
1h2-Dlr c@dbpdbpHei	MD		0,50	0,17	NBjF			03j2uj23 00:21	1
1h3h5-Tdmi rcaC@i ezi ei	MD		0,50	0,17	NBjF			03j2uj23 00:21	1
1h3-Dlr c@dbbi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 00:21	1
1h3-Dlr c@dbpdbpHei	MD		0,50	0,21	NBjF			03j2uj23 00:21	1
1hu-Dlr c@dbbi ezi ei	MD		0,50	0,11	NBjF			03j2uj23 00:21	1
2h2-Dlr c@db-1h1h1-rdfCbdbi ncHei	MD		10	5,0	NBjF			03j2uj23 00:21	1
2h2-Dlr c@dbpdbpHei	MD		1,0	0,25	NBjF			03j2uj23 00:21	1
2-SNHeoei (REK)	MD		5,0	2,5	NBjF			03j2uj23 00:21	1
2-4 c@dbi rcaCvleaCl rci d	MD		2,0	1,1	NBjF			03j2uj23 00:21	1
2-4 c@dbroCNi ei	MD		0,50	0,11	NBjF			03j2uj23 00:21	1
2-t i xHeoei	MD		5,0	2,2	NBjF			03j2uj23 00:21	1
u-4 c@dbroCNi ei	MD		0,50	0,22	NBjF			03j2uj23 00:21	1
u-Ri rcaC2-pi erHeoei (RISK)	MD		5,0	2,6	NBjF			03j2uj23 00:21	1
&ri roei	MD		20	16	NBjF			03j2uj23 00:21	1
&rdbCle	MD		5,0	u,6	NBjF			03j2uj23 00:21	1
&rda@elrdC	MD		2,0	1,u	NBjF			03j2uj23 00:21	1
Si ezi ei	MD		0,50	0,28	NBjF			03j2uj23 00:21	1
Sdbmobi ezi ei	MD		0,50	0,23	NBjF			03j2uj23 00:21	1
Sdbmor c@dbmi ncHei	MD		0,50	0,21	NBjF			03j2uj23 00:21	1
SdbmoAlr c@dbmi ncHei	MD		0,50	0,19	NBjF			03j2uj23 00:21	1
Sdbmofodm	MD		1,0	0,25	NBjF			03j2uj23 00:21	1
Sdbmomi ncHei	MD		0,50	0,22	NBjF			03j2uj23 00:21	1
4 Hdboe AlsNCIAi	MD		1,0	0,61	NBjF			03j2uj23 00:21	1
4 Hdboe ni rdHr c@dAi	MD		0,50	0,28	NBjF			03j2uj23 00:21	1
4 c@dbbi ezi ei	MD		0,50	0,19	NBjF			03j2uj23 00:21	1
4 c@dbi ncHei	MD		1,0	0,29	NBjF			03j2uj23 00:21	1
4 c@dbfodm	MD		0,50	0,19	NBjF			03j2uj23 00:21	1
4 c@dbmi ncHei	MD		0,50	0,30	NBjF			03j2uj23 00:21	1
r ls-1h2-Dlr c@dbi nci ei	MD		0,50	0,21	NBjF			03j2uj23 00:21	1
r ls-1h3-Dlr c@dbpdbpi ei	MD		0,50	0,30	NBjF			03j2uj23 00:21	1
4 ar@ci xHei	MD		2,0	0,79	NBjF			03j2uj23 00:21	1
Dlbdbmor c@dbmi ncHei	MD		0,50	0,15	NBjF			03j2uj23 00:21	1

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Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: EPBMC_20230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dlbcbmomi rcHei	MD		0,50	0,19	NBjF			03j2uj23 00:21	1
DIr cCcbAlfCNbcbmi rcHei	MD		1,0	0,u6	NBjF			03j2uj23 00:21	1
DI-Isopcbpa Cl rci d(DI. E)	MD		0,50	0,21	NBjF			03j2uj23 00:21	1
EncHeoC	MD		100	65	NBjF			03j2uj23 00:21	1
EncaCn+bNnaCl rci d(ETSE)	MD		0,50	0,27	NBjF			03j2uj23 00:21	1
EncaCbi ezi ei	MD		0,50	0,25	NBjF			03j2uj23 00:21	1
t i xHr cCcb-1f8-bNrHAli ei	MD		0,50	0,21	NBjF			03j2uj23 00:21	1
IsopcbpHeoC	MD		250	120	NBjF			03j2uj23 00:21	1
Isopcbpa Cbi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 00:21	1
Ri ncaCn+SNnaCEnci d(RTSE)	MD		0,50	0,22	NBjF			03j2uj23 00:21	1
Ri ncaCei 4 cCdAi	MD		2,0	0,57	NBjF			03j2uj23 00:21	1
MHpcrcHCei	MD		1,0	0,33	NBjF			03j2uj23 00:21	1
e-SNnaCbi ezi ei	MD		1,0	0,22	NBjF			03j2uj23 00:21	1
M-. dbpaCbi ezi ei	MD		0,50	0,30	NBjF			03j2uj23 00:21	1
o-XaCei	MD		0,50	0,15	NBjF			03j2uj23 00:21	1
mhp-XaCei	MD		1,0	0,17	NBjF			03j2uj23 00:21	1
p-Isopcbpa CbCNi ei	MD		0,50	0,18	NBjF			03j2uj23 00:21	1
si r-SNnaCbi ezi ei	MD		0,50	0,20	NBjF			03j2uj23 00:21	1
/ nad ei	MD		0,50	0,19	NBjF			03j2uj23 00:21	1
Ti ch+HmaCmi rcaCl rci d(T&RE)	MD		0,50	0,32	NBjF			03j2uj23 00:21	1
ni ch+SNnaCHCocoC(TS&)	MD		10	3,8	NBjF			03j2uj23 00:21	1
ni ch+SNnaCbi ezi ei	MD		0,50	0,17	NBjF			03j2uj23 00:21	1
Ti rdHr cCcbi rci ei	MD		0,50	0,21	NBjF			03j2uj23 00:21	1
Ti rdHcaAcbfNdHe	MD		10	6,8	NBjF			03j2uj23 00:21	1
ToCNi ei	MD		0,50	0,23	NBjF			03j2uj23 00:21	1
rdHes-1f2-DIr cCcbi rci ei	MD		0,50	0,2u	NBjF			03j2uj23 00:21	1
rdHes-1f8-DIr cCcbpcbpi ei	MD		0,50	0,18	NBjF			03j2uj23 00:21	1
Tdr cCcbi rci ei	MD		0,50	0,17	NBjF			03j2uj23 00:21	1
Tdr cCcbfCNbcbmi rcHei	MD		0,50	0,29	NBjF			03j2uj23 00:21	1
VleaCHri rHri	MD		u,0	3,1	NBjF			03j2uj23 00:21	1
VleaCr cCdAi	MD		0,50	0,u7	NBjF			03j2uj23 00:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*76 - 146*		*603243 20 66/21*	*1*
4-: ro5 oBuoromenf ene (Surr)	*162*		*76 - 146*		*603243 20 66/21*	*1*
Dimro5 oBuoro5 ethane (Surr)	*84*		*76 - 146*		*603243 20 66/21*	*1*
boluene-d8 (Surr)	*z9*		*76 - 146*		*603243 20 66/21*	*1*

Client Sample ID: TB-20230323-1
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1h1h1h2-Ti rdHr cCcbi rcHei	MD		0,50	0,17	NBjF			03j2uj23 01:27	1
1h1h1-Tdr cCcbi rcHei	MD		0,50	0,25	NBjF			03j2uj23 01:27	1
1h1h2h2-Ti rdHr cCcbi rcHei	MD		0,50	0,20	NBjF			03j2uj23 01:27	1
1h1h2-Tdr cCcb-1h2h2-rdfCNbcbi rcHei	MD		2,0	0,33	NBjF			03j2uj23 01:27	1
1h1h2-Tdr cCcbi rcHei	MD		0,50	0,17	NBjF			03j2uj23 01:27	1
1h1-DIr cCcbi rcHei	MD		0,50	0,39	NBjF			03j2uj23 01:27	1
1h1-DIr cCcbi rci ei	MD		0,50	0,33	NBjF			03j2uj23 01:27	1
1h1-DIr cCcbpcbpi ei	MD		0,50	0,22	NBjF			03j2uj23 01:27	1

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Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-20230323-1
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1h2h8-Tdr c@dbbi ezi ei	MD		1,0	0,19	NBjF			03j2uj23 01:27	1
1h2h8-Tdr c@dbpdbpHei	MD		1,0	0,31	NBjF			03j2uj23 01:27	1
1h2hu-Tdr c@dbbi ezi ei	MD		1,0	0,29	NBjF			03j2uj23 01:27	1
1h2hu-Tdmi rcaC@i ezi ei	MD		0,50	0,28	NBjF			03j2uj23 01:27	1
1h2-Dlbdbmo-3-4 c@dbpdbpHei	MD		1,0	0,51	NBjF			03j2uj23 01:27	1
1h2-Dlbdbmoi rcHei	MD		0,50	0,19	NBjF			03j2uj23 01:27	1
1h2-Dlr c@db-1h1h2-rdfCbdbi rcHei	MD		2,0	0,58	NBjF			03j2uj23 01:27	1
1h2-Dlr c@dbbi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 01:27	1
1h2-Dlr c@dbi rcHei	MD		0,50	0,15	NBjF			03j2uj23 01:27	1
1h2-Dlr c@dbpdbpHei	MD		0,50	0,17	NBjF			03j2uj23 01:27	1
1h8h5-Tdmi rcaC@i ezi ei	MD		0,50	0,17	NBjF			03j2uj23 01:27	1
1h8-Dlr c@dbbi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 01:27	1
1h8-Dlr c@dbpdbpHei	MD		0,50	0,21	NBjF			03j2uj23 01:27	1
1hu-Dlr c@dbbi ezi ei	MD		0,50	0,11	NBjF			03j2uj23 01:27	1
2h2-Dlr c@db-1h1h1-rdfCbdbi rcHei	MD		10	5,0	NBjF			03j2uj23 01:27	1
2h2-Dlr c@dbpdbpHei	MD		1,0	0,25	NBjF			03j2uj23 01:27	1
2-SNHeoei (REK)	MD		5,0	2,5	NBjF			03j2uj23 01:27	1
2-4 c@dbi rcaCvleaCl rci d	MD		2,0	1,1	NBjF			03j2uj23 01:27	1
2-4 c@dbroCNi ei	MD		0,50	0,11	NBjF			03j2uj23 01:27	1
2-t i xHeoei	MD		5,0	2,2	NBjF			03j2uj23 01:27	1
u-4 c@dbroCNi ei	MD		0,50	0,22	NBjF			03j2uj23 01:27	1
u-Ri rcaC2-pi erHeoei (RISK)	MD		5,0	2,6	NBjF			03j2uj23 01:27	1
&ri roei	MD		20	16	NBjF			03j2uj23 01:27	1
&rdbCle	MD		5,0	u,6	NBjF			03j2uj23 01:27	1
&rdaCelrdC	MD		2,0	1,u	NBjF			03j2uj23 01:27	1
Si ezi ei	MD		0,50	0,28	NBjF			03j2uj23 01:27	1
Sdbmobi ezi ei	MD		0,50	0,23	NBjF			03j2uj23 01:27	1
Sdbmor c@dbmi rcHei	MD		0,50	0,21	NBjF			03j2uj23 01:27	1
SdbmoAlr c@dbmi rcHei	MD		0,50	0,19	NBjF			03j2uj23 01:27	1
Sdbmofodm	MD		1,0	0,25	NBjF			03j2uj23 01:27	1
Sdbmomi rcHei	MD		0,50	0,22	NBjF			03j2uj23 01:27	1
4 Hdboe AlsNCIAi	MD		1,0	0,61	NBjF			03j2uj23 01:27	1
4 Hdboe ri rdHr c@dAi	MD		0,50	0,28	NBjF			03j2uj23 01:27	1
4 c@dbbi ezi ei	MD		0,50	0,19	NBjF			03j2uj23 01:27	1
4 c@dbi rcHei	MD		1,0	0,29	NBjF			03j2uj23 01:27	1
4 c@dbfodm	MD		0,50	0,19	NBjF			03j2uj23 01:27	1
4 c@dbmi rcHei	MD		0,50	0,30	NBjF			03j2uj23 01:27	1
r ls-1h2-Dlr c@dbi rci ei	MD		0,50	0,21	NBjF			03j2uj23 01:27	1
r ls-1h8-Dlr c@dbpdbpi ei	MD		0,50	0,30	NBjF			03j2uj23 01:27	1
4 ar@ci xHei	MD		2,0	0,79	NBjF			03j2uj23 01:27	1
Dlbdbmor c@dbmi rcHei	MD		0,50	0,15	NBjF			03j2uj23 01:27	1
Dlbdbmomi rcHei	MD		0,50	0,19	NBjF			03j2uj23 01:27	1
Dlr c@dbAlfCbdbmi rcHei	MD		1,0	0,u6	NBjF			03j2uj23 01:27	1
Dl-lsopdbpaCl rci d(Dl. E)	MD		0,50	0,21	NBjF			03j2uj23 01:27	1
EncHeoC	MD		100	65	NBjF			03j2uj23 01:27	1
EncaC>bNnaCl rci d(ETSE)	MD		0,50	0,27	NBjF			03j2uj23 01:27	1
Encaci ezi ei	MD		0,50	0,25	NBjF			03j2uj23 01:27	1
t i xHr c@db-1h8-bNHAli ei	MD		0,50	0,21	NBjF			03j2uj23 01:27	1
lsopdbpHeoC	MD		250	120	NBjF			03j2uj23 01:27	1

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Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-20230323-1 **Lab Sample ID: 570-132333-2**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopdopa0bi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 01:27	1
Ri ncaQn-SNnaOEnci d(RTSE)	MD		0,50	0,22	NBjF			03j2uj23 01:27	1
Ri ncaCei 4 cOdAi	MD		2,0	0,57	NBjF			03j2uj23 01:27	1
MHpcncHCei	MD		1,0	0,33	NBjF			03j2uj23 01:27	1
e-SNnaOi ezi ei	MD		1,0	0,22	NBjF			03j2uj23 01:27	1
M-. dopa0bi ezi ei	MD		0,50	0,30	NBjF			03j2uj23 01:27	1
o-XaCei	MD		0,50	0,15	NBjF			03j2uj23 01:27	1
mhp-XaCei	MD		1,0	0,17	NBjF			03j2uj23 01:27	1
p-Isopdopa0oONi ei	MD		0,50	0,18	NBjF			03j2uj23 01:27	1
si r-SNnaOi ezi ei	MD		0,50	0,20	NBjF			03j2uj23 01:27	1
/ nad ei	MD		0,50	0,19	NBjF			03j2uj23 01:27	1
Ti dn-HmaQmi ncaCl nci d(T&RE)	MD		0,50	0,32	NBjF			03j2uj23 01:27	1
ni dn-SNnaCHCocoO(TS&)	MD		10	3,8	NBjF			03j2uj23 01:27	1
ni dn-SNnaOi ezi ei	MD		0,50	0,17	NBjF			03j2uj23 01:27	1
Ti ndHr cOdbi nci ei	MD		0,50	0,21	NBjF			03j2uj23 01:27	1
Ti ndHcaAdofNdHe	MD		10	6,8	NBjF			03j2uj23 01:27	1
ToONi ei	MD		0,50	0,23	NBjF			03j2uj23 01:27	1
ndHes-1h2-DIr cOdbi nci ei	MD		0,50	0,2u	NBjF			03j2uj23 01:27	1
ndHes-1h3-DIr cOdopdopi ei	MD		0,50	0,18	NBjF			03j2uj23 01:27	1
Tdr cOdbi nci ei	MD		0,50	0,17	NBjF			03j2uj23 01:27	1
Tdr cOdofONodbmi ncHei	MD		0,50	0,29	NBjF			03j2uj23 01:27	1
VleaCHri nHni	MD		u,0	3,1	NBjF			03j2uj23 01:27	1
VleaOr cOdAi	MD		0,50	0,u7	NBjF			03j2uj23 01:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*164*		*76 - 146*		*603243 20 61/29*	*1*
4-: ro5 oBuoromenf ene (Surr)	*161*		*76 - 146*		*603243 20 61/29*	*1*
Dimro5 oBuoro5 ethane (Surr)	*z6*		*76 - 146*		*603243 20 61/29*	*1*
boluene-d8 (Surr)	*166*		*76 - 146*		*603243 20 61/29*	*1*

Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1hu-DloxHei	MD		1,0	0,55	NBjF			03j2uj23 21:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichloromutane (Surr)	*106*		*79 - 100*		*603243 20 21/T7*	*1*

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Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBMC_20230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1h2hu-Tdrc@dbbi ezi ei	MD	FL	0,20	0,13	NBjF		03j30j23 10:27	03j31j23 21:59	1
1h2-Dlrc@dbbi ezi ei	MD		0,20	0,12	NBjF		03j30j23 10:27	03j31j23 21:59	1
1h2-Dlpci ea@aAd-Hzlei (Hs &zobi ezi ei)	MD		0,20	0,091	NBjF		03j30j23 10:27	03j31j23 21:59	1
1h8-Dlrc@dbbi ezi ei	MD		0,20	0,12	NBjF		03j30j23 10:27	03j31j23 21:59	1
1hu-Dlrc@dbbi ezi ei	MD		0,20	0,1u	NBjF		03j30j23 10:27	03j31j23 21:59	1
2huh6-Tdrc@dbpci eoC	MD		1,0	0,1u	NBjF		03j30j23 10:27	03j31j23 21:59	1
2hu-Dlrc@dbpci eoC	MD		1,0	0,1u	NBjF		03j30j23 10:27	03j31j23 21:59	1
2hu-Dlmi rca@pci eoC	MD		0,20	0,13	NBjF		03j30j23 10:27	03j31j23 21:59	1
2hu-Dlelrdbpci eoC	MD		5,0	u,3	NBjF		03j30j23 10:27	03j31j23 21:59	1
2hu-Dlelrdbro@Ni ei	MD		0,20	0,12	NBjF		03j30j23 10:27	03j31j23 21:59	1
2h6-Dlelrdbro@Ni ei	MD		0,20	0,18	NBjF		03j30j23 10:27	03j31j23 21:59	1
2-4 c@dbeHpcrcHCei	MD		0,20	0,1u	NBjF		03j30j23 10:27	03j31j23 21:59	1
2-4 c@dbpci eoC	MD		0,20	0,096	NBjF		03j30j23 10:27	03j31j23 21:59	1
2-Mlrdbpci eoC	MD		5,0	3,5	NBjF		03j30j23 10:27	03j31j23 21:59	1
3h8'-Dlrc@dbbi ezlAlei	MD		5,0	3,0	NBjF		03j30j23 10:27	03j31j23 21:59	1
uh6-Dlelrdb-2-mi rca@pci eoC	MD		5,0	u,6	NBjF		03j30j23 10:27	03j31j23 21:59	1
u-Sdbmopci ea@pci ea@ rci d	MD		0,20	0,10	NBjF		03j30j23 10:27	03j31j23 21:59	1
u-4 c@db-3-mi rca@pci eoC	MD		1,0	0,13	NBjF		03j30j23 10:27	03j31j23 21:59	1
u-4 c@dbpci ea@pci ea@ rci d	MD		0,20	0,17	NBjF		03j30j23 10:27	03j31j23 21:59	1
u-Mlrdbpci eoC	MD		5,0	3,u	NBjF		03j30j23 10:27	03j31j23 21:59	1
&ri eHpcrci ei	MD		0,20	0,099	NBjF		03j30j23 10:27	03j31j23 21:59	1
&ri eHpcrcaCei	MD		0,20	0,13	NBjF		03j30j23 10:27	03j31j23 21:59	1
&ercd-Hri ei	MD		0,20	0,085	NBjF		03j30j23 10:27	03j31j23 21:59	1
Si ezlAlei	MD	S&	5,0	2,7	NBjF		03j30j23 10:27	03j31j23 21:59	1
Si ezo[H]Hercd-Hri ei	MD		0,20	0,12	NBjF		03j30j23 10:27	03j31j23 21:59	1
Si ezo[H]pad ei	MD		0,20	0,15	NBjF		03j30j23 10:27	03j31j23 21:59	1
Si ezo[b]f@bod-Herci ei	MD		0,20	0,11	NBjF		03j30j23 10:27	03j31j23 21:59	1
Si ezo[Brch]pi da@ei	MD		0,20	0,11	NBjF		03j30j23 10:27	03j31j23 21:59	1
Si ezo[k]f@bod-Herci ei	MD		0,20	0,11	NBjF		03j30j23 10:27	03j31j23 21:59	1
bls (2-rc@dblsopdbpa@i rci d	MD		0,20	0,13	NBjF		03j30j23 10:27	03j31j23 21:59	1
Sls(2-rc@dbi rcoxa)mi rcHei	MD		0,20	0,11	NBjF		03j30j23 10:27	03j31j23 21:59	1
Sls(2-rc@dbi rca@ rci d	MD		0,20	0,10	NBjF		03j30j23 10:27	03j31j23 21:59	1
Sls(2-i rca@i xa@pcrcHCHi	MD		5,0	3,6	NBjF		03j30j23 10:27	03j31j23 21:59	1
SNrdbi ezaCpcrcHCHi	MD		1,0	0,68	NBjF		03j30j23 10:27	03j31j23 21:59	1
4 cdasi ei	MD		0,20	0,11	NBjF		03j30j23 10:27	03j31j23 21:59	1
Dlbi ez(Hrc)Hercd-Hri ei	MD		0,20	0,16	NBjF		03j30j23 10:27	03j31j23 21:59	1
Dli rca@pcrcHCHi	MD		2,0	0,18	NBjF		03j30j23 10:27	03j31j23 21:59	1
Dlmi rca@pcrcHCHi	MD		2,0	0,098	NBjF		03j30j23 10:27	03j31j23 21:59	1
Dl-e-bNrdbCpcrcHCHi	MD		2,0	1,9	NBjF		03j30j23 10:27	03j31j23 21:59	1
Dl-e-or rdbCpcrcHCHi	MD		3,0	0,5u	NBjF		03j30j23 10:27	03j31j23 21:59	1
g@bod-Herci ei	MD		0,20	0,10	NBjF		03j30j23 10:27	03j31j23 21:59	1
g@bod ei	MD		0,20	0,095	NBjF		03j30j23 10:27	03j31j23 21:59	1
t i xHrc@dbbi ezi ei	MD		0,20	0,1u	NBjF		03j30j23 10:27	03j31j23 21:59	1
t i xHrc@dbbNrHAli ei	MD		0,20	0,15	NBjF		03j30j23 10:27	03j31j23 21:59	1
t i xHrc@dbrar@pi erHAli ei	MD		0,20	0,15	NBjF		03j30j23 10:27	03j31j23 21:59	1
t i xHrc@dbi rcHei	MD		0,20	0,13	NBjF		03j30j23 10:27	03j31j23 21:59	1
leAi eo[1h2h8-r A]pad ei	MD		0,20	0,13	NBjF		03j30j23 10:27	03j31j23 21:59	1
Isopcodbei	MD		0,20	0,10	NBjF		03j30j23 10:27	03j31j23 21:59	1
MHpcrcHCei	MD		0,20	0,11	NBjF		03j30j23 10:27	03j31j23 21:59	1

ENbofles 4 HGrli er i

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MIndobi ezi ei	MD		0,20	0,1u	NBjF		03j30j23 10:27	03j31j23 21:59	1
M-MIndosoAlmi ncaCHmlei	MD		0,20	0,19	NBjF		03j30j23 10:27	03j31j23 21:59	1
M-MIndosoAl-e-pdopaCHmlei	MD		0,20	0,15	NBjF		03j30j23 10:27	03j31j23 21:59	1
M-MIndosoAlpci eaCHmlei	MD		0,20	0,11	NBjF		03j30j23 10:27	03j31j23 21:59	1
. i enHr cCodopci eoC	MD		1,0	0,85	NBjF		03j30j23 10:27	03j31j23 21:59	1
. ci eHencd ei	MD		0,20	0,17	NBjF		03j30j23 10:27	03j31j23 21:59	1
. ci eoC	MD		1,0	0,53	NBjF		03j30j23 10:27	03j31j23 21:59	1
. ad ei	MD		0,20	0,087	NBjF		03j30j23 10:27	03j31j23 21:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,7-brimro5 ophenol	*88*		*28 - 129*	*603063 20 16/29*	*603013 20 21/Tz*	*1*
2-Fluoromiphenyl (Surr)	*T8*		*01 - 126*	*603063 20 16/29*	*603013 20 21/Tz*	*1*
2-Fluorophenol	*0z*		*19 - 126*	*603063 20 16/29*	*603013 20 21/Tz*	*1*
Nitromenf ene-dT	*77*		*29 - 126*	*603063 20 16/29*	*603013 20 21/Tz*	*1*
Phenol-d7 (Surr)	*29*		*16 - 126*	*603063 20 16/29*	*603013 20 21/Tz*	*1*
p-berphenyl-d14 (Surr)	*91*		*4T - 126*	*603063 20 16/29*	*603013 20 21/Tz*	*1*

Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
QL G (4 u-4 12)	MD		50	30	NBjF			03j30j23 03:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-: ro5 oBuoromenf ene (Surr)	*76*		*26 - 144*		*603063 20 60/10*	*1*

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4 13-4 28	MD		0,051	0,037	mBjF		03j29j23 21:2u	0uj01j23 20:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*164*		*T0 - 1T1*	*603z320 21/24*	*643613 20 26/T6*	*1*

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.027	J,DX	0,20	0,019	NBjF			03j2uj23 06:17	1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.022	J,DX	0,20	0,019	NBjF			03j2uj23 07:53	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**57**		2,0	0,72	mBjF			03j2uj23 05:25	2
Mlndni Hs M	MD		0,20	0,086	mBjF			03j2uj23 05:25	2
Fluoride	**0.50**		0,20	0,092	mBjF			03j2uj23 05:25	2
Nitrate as N	**2.4**		0,20	0,039	mBjF			03j2uj23 05:25	2

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Client Sample Results

4 Client HCay & Adrchler, . obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-132333-1

Method: EPA 300.0 - Anions, Ion Chromatography - DL

Client Sample ID: EPBMC_20230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	360		10	2,u	mBjF			03j2uj23 05:u3	10

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Client Sample Results

4 Client HC ay & Adrchler, . obPrrj/ In : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-132333-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBMC_20230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	24		2,0	0,91	NBjF			03j25j23 03:37	1

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Client Sample Results

4 Client HCay & Adrchler,
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.
Job ID: 570-132333-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: EPBMC_20230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	2.4		0,10	0,020	mBjF			03j27j23 16:56	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.32	J,DX	0,50	0,0035	mBjF		03j27j23 08:29	03j28j23 11:58	1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.29	J,DX BU	0,50	0,0035	mBjF			03j27j23 18:33	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**2200**		15	8,6	NBjF		03j27j23 08:51	03j27j23 12:59	1
/ IOi d	MD		1,0	0,23	NBjF		03j27j23 08:51	03j27j23 12:59	1
Arsenic	**1.5**		1,0	0,16	NBjF		03j27j23 08:51	03j27j23 12:59	1
Barium	**70**		1,0	0,17	NBjF		03j27j23 08:51	03j27j23 12:59	1
Si daCCNm	MD	IS	0,50	0,26	NBjF		03j27j23 08:51	03j27j23 12:59	1
4 HAmlNm	MD		1,0	0,13	NBjF		03j27j23 08:51	03j27j23 12:59	1
Chromium	**4.1**		2,0	0,1u	NBjF		03j27j23 08:51	03j27j23 12:59	1
Cobalt	**1.8**		1,0	0,1u	NBjF		03j27j23 08:51	03j27j23 12:59	1
Copper	**3.3**		2,0	0,32	NBjF		03j27j23 08:51	03j27j23 12:59	1
Iron	**4000**		20	3,7	NBjF		03j27j23 08:51	03j27j23 12:59	1
Manganese	**97**	**MB**	1,0	0,u1	NBjF		03j27j23 08:51	03j27j23 12:59	1
Nickel	**3.4**		2,0	0,17	NBjF		03j27j23 08:51	03j27j23 12:59	1
Lead	**1.5**		1,0	0,12	NBjF		03j27j23 08:51	03j27j23 12:59	1
Antimony	**0.88**	**J,DX**	2,0	0,36	NBjF		03j27j23 08:51	03j27j23 12:59	1
Zinc	**11**	**J,DX**	20	2,8	NBjF		03j27j23 08:51	03j27j23 12:59	1
Selenium	**4.1**		2,0	0,52	NBjF		03j27j23 08:51	03j27j23 12:59	1
TcHCCNm	MD		1,0	0,11	NBjF		03j27j23 08:51	03j27j23 12:59	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
&CNmleNm	MD	SO	15	8,6	NBjF			03j27j23 10:u1	1
/ lCi d	MD	SO	1,0	0,23	NBjF			03j27j23 10:u1	1
Arsenic	**0.68**	**J,DX BU**	1,0	0,16	NBjF			03j27j23 10:u1	1
Barium	**50**	**BU**	1,0	0,17	NBjF			03j27j23 10:u1	1
Si daCCNm	MD	SO IS FZ	0,50	0,26	NBjF			03j27j23 10:u1	1
4 HAmlNm	MD	SO	1,0	0,13	NBjF			03j27j23 10:u1	1
Chromium	**0.18**	**J,DX BU**	2,0	0,1u	NBjF			03j27j23 10:u1	1
Cobalt	**0.28**	**J,DX BU**	1,0	0,1u	NBjF			03j27j23 10:u1	1
Copper	**1.0**	**J,DX BU**	2,0	0,32	NBjF			03j27j23 10:u1	1
Iron	**11**	**J,DX BU**	20	3,7	NBjF			03j27j23 10:u1	1
Manganese	**27**	**BU**	1,0	0,u1	NBjF			03j27j23 10:u1	1
Nickel	**0.83**	**J,DX BU**	2,0	0,17	NBjF			03j27j23 10:u1	1
TcHCCNm	MD	SO	1,0	0,11	NBjF			03j27j23 10:u1	1
Fi HA	MD	SO	1,0	0,12	NBjF			03j27j23 10:u1	1
&enlmoea	MD	SO	2,0	0,36	NBjF			03j27j23 10:u1	1
Uler	MD	SO	20	2,8	NBjF			03j27j23 10:u1	1
Selenium	**3.2**	**BU**	2,0	0,52	NBjF			03j27j23 10:u1	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	560		7,1	0,50	mBjF			03j30j23 19:07	1

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Client Sample Results

4 Client HCay & Adrchler,
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.
Job ID: 570-132333-1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Client Sample ID: EPBMC_20230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	510		7,1	0,50	mBjF			03j29j23 19:06	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

General Chemistry

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	**0.67**	**J,DX**	0,95	0,u9	mBjF		03j29j23 13:05	03j30j23 07:u7	1
Cr (III) (EPA 218.6 CR3)	**0.0041**	**J,DX**	0,050	0,0030	mBjF			0uj05j23 15:09	1
Ammonia (EPA 350.1)	**0.039**	**J,DX**	0,075	0,032	mBjF		0uj03j23 10:18	0uj03j23 12:39	1
4 aHelAi hTorHC(E. & Ki CHAH 01)	MD		5,0	2,5	NBjF			03j29j23 1u:58	1
Turbidity (SM 2130B)	**85**		0,05	0,05	MTO			03j2uj23 17:29	1
Total Dissolved Solids (SM 2540C)	**980**		10	8,7	mBjF			03j29j23 13:29	1
Total Suspended Solids (SM 2540D)	**260**		1,3	1,0	mBjF			03j29j23 15:09	1
Slor ci mlr HCGxaBi e Di mHeA (/ R 5210S)	MD		2,0	1,0	mBjF		03j2uj23 11:11	03j2uj23 12:08	1
Carbon, Total Organic (SM 5310D)	**8.2**		2,0	1,1	mBjF			0uj06j23 07:38	u
MBAS (SM 5540C)	**0.067**	**J,DX**	0,20	0,050	mBjF		03j2uj23 16:u3	03j2uj23 17:27	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**1300**		1,0	1,0	Nmcosjr m			03j30j23 16:37	1
Settleable Solids (SM 2540F)	**1.0**		0,10	0,10	mFjF			03j2uj23 16:35	1

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Client Sample Results

4 Client HCay & Adrchler, . dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-132333-1

General Chemistry - Dissolved

Client Sample ID: EPBMC_20230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4 d(III) (E. & 218,6 4 L 3)	MD		0,050	0,0030	mBjF			0uj05j23 15:22	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132333-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**
Date Collected: 03/23/23 11:10 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**11.73**		0,01	0,01	%			0uj05j23 08:0u	1
4 oHdsi / HeA (0,5mm no 1mm)	MD		0,01	0,01	%			0uj05j23 08:0u	1
Fine Sand (0.125 to 0.25mm)	**10.94**		0,01	0,01	%			0uj05j23 08:0u	1
QdHvi C(Bd Hri dncHe 2 mm)	MD		0,01	0,01	%			0uj05j23 08:0u	1
Ri AlNm / HeA (0,25 no 0,5 mm)	MD		0,01	0,01	%			0uj05j23 08:0u	1
Silt (0.00391 to 0.0625mm)	**56.86**		0,01	0,01	%			0uj05j23 08:0u	1
Total Silt and Clay (0 to 0.0626mm)	**68.59**		0,01	0,01	%			0uj05j23 08:0u	1
Vi da 4 oHdsi / HeA (1 no 2mm)	MD		0,01	0,01	%			0uj05j23 08:0u	1
Very Fine Sand (0.0625 to 0.125 mm)	**20.47**		0,01	0,01	%			0uj05j23 08:0u	1

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PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

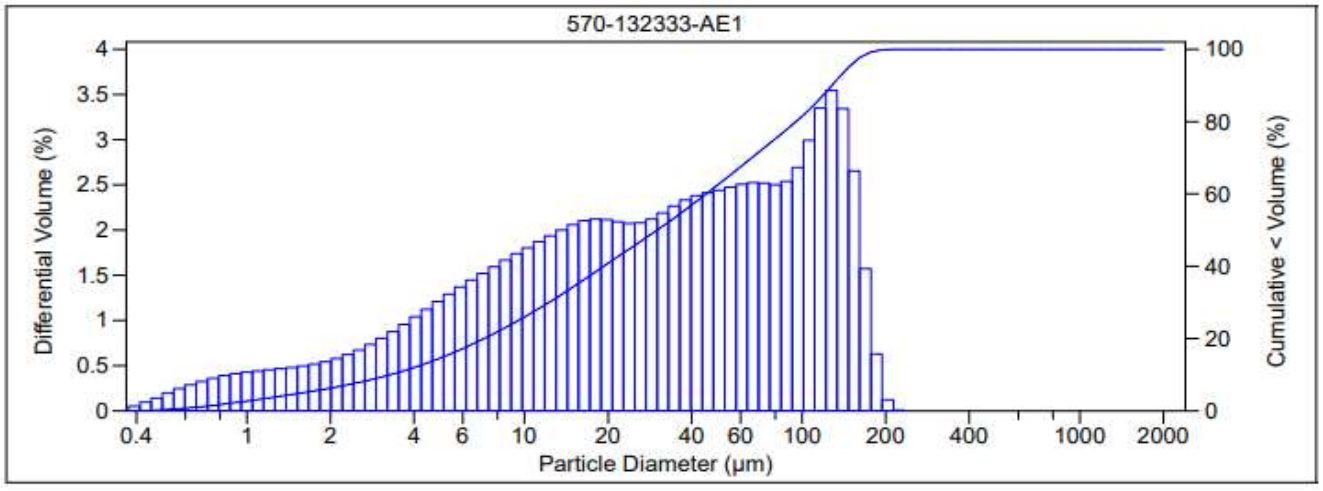
Haley & Aldrich, Inc.

Date Sampled:	03/23/23
Date Received:	03/23/23
Work Order No:	570-132333
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBMC_20230323		Silt	0.049

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	10.94	20.47	56.86	11.73	68.59



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

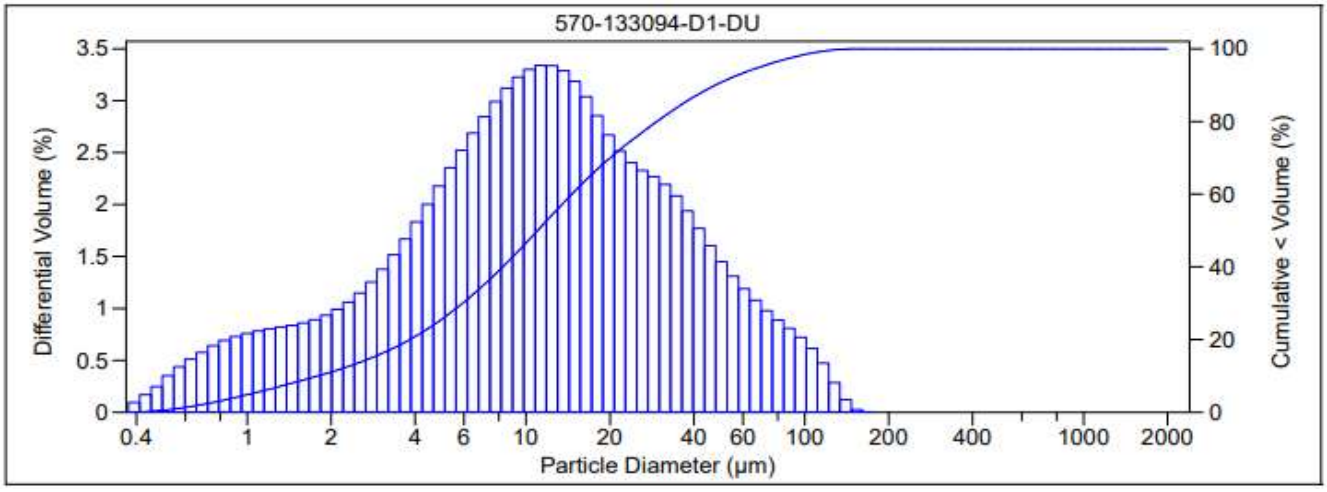
Enthalpy Analytical LLC

Date Sampled:	03/29/23
Date Received:	03/30/23
Work Order No:	570-133094
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: 482457

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230329		Silt	0.019

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.36	5.83	73.42	20.39	93.81



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PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

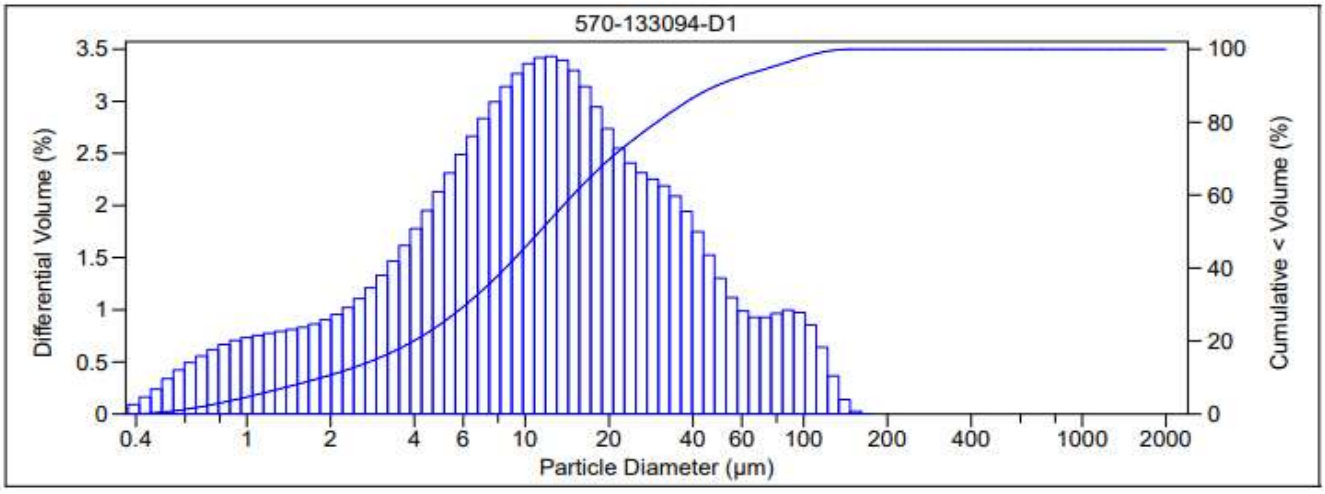
Enthalpy Analytical LLC

Date Sampled:	03/29/23
Date Received:	03/30/23
Work Order No:	570-133094
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: 482457

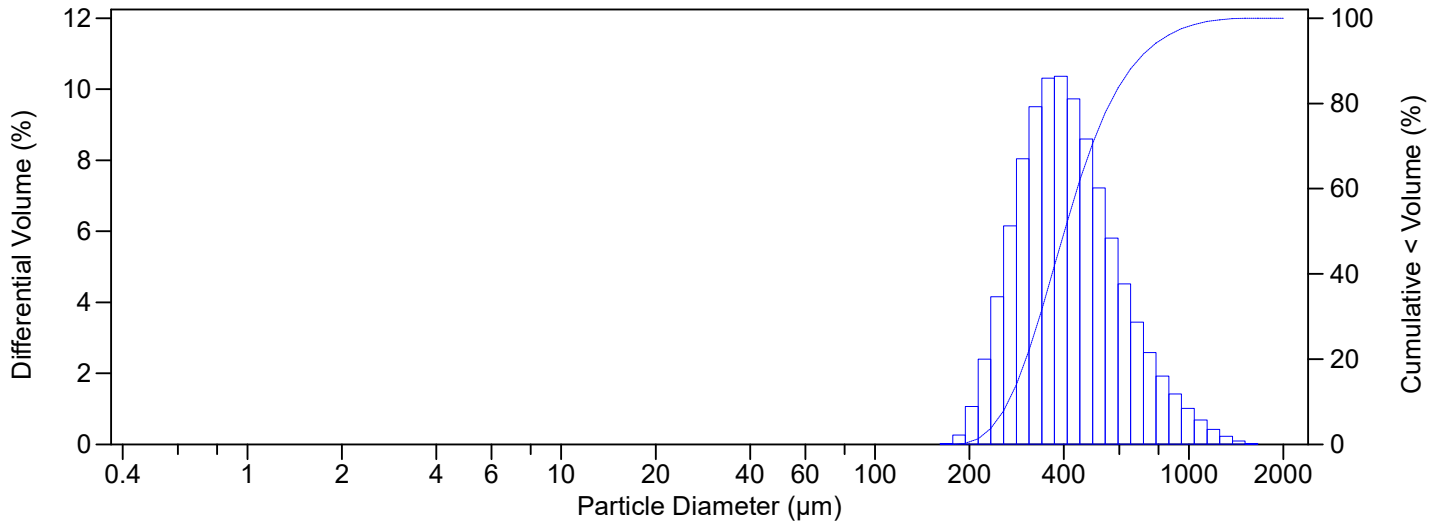
Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230329		Silt	0.020

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.44	6.54	73.33	19.69	93.02



V 3.0

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.27.17.$ls STD SAND_ 5 Apr 2023_11.27.17.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	17 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.71%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:26 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.27.17.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	446.6 µm	S.D.:	184.8 µm
Median:	401.6 µm	Variance:	34149 µm^2
Mean/Median ratio:	1.112	Skewness:	1.650 Right skewed
Mode:	391.0 µm	Kurtosis:	3.726 Leptokurtic

d_{10}: 265.5 µm d_{50}: 401.6 µm d_{90}: 687.4 µm

Folk and Ward Statistics (Phi)

Mean:	1.28	Median:	1.32	Deviation:	0.53
Skewness:	-0.13	Kurtosis:	1.01		

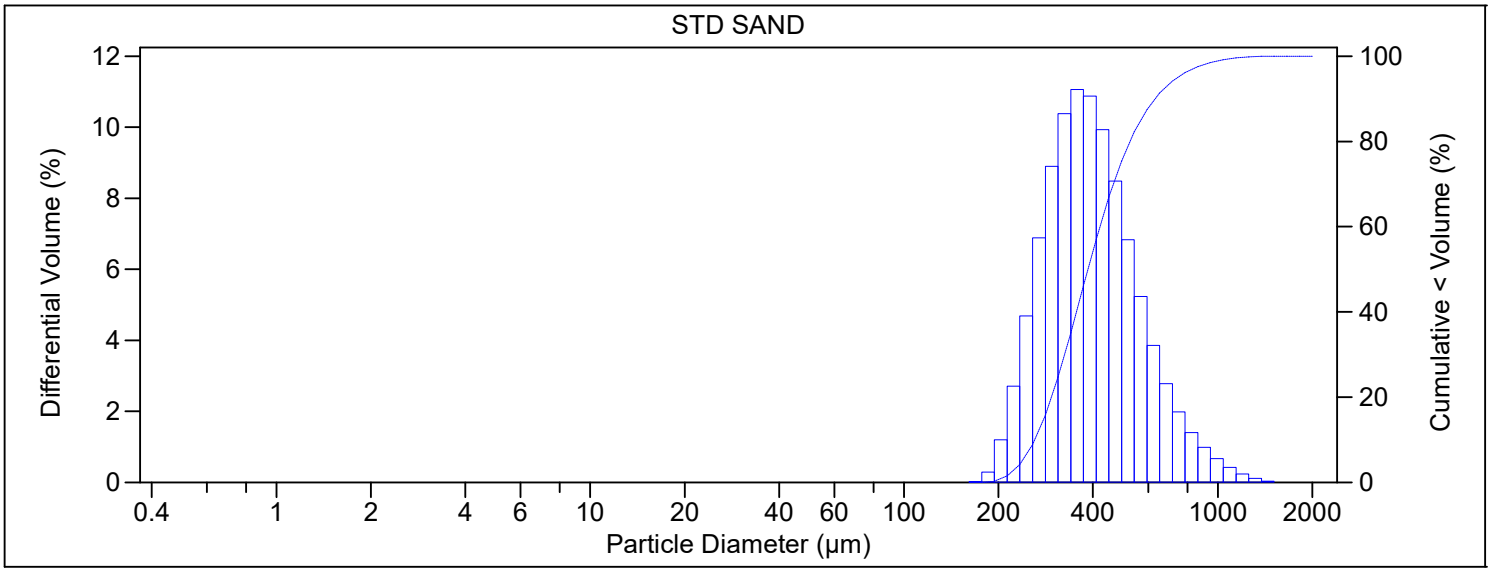
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
241.0 µm	288.7 µm	318.9 µm	367.0 µm	401.6 µm	523.0 µm	599.7 µm	820.0 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.27.17 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.64
250	64.9
500	26.5
1000	1.92
2000	

STD SAND_ 5 Apr 2023_11.27.17.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.42
0.412	0	22.73	0	1255	0.23
0.452	0	24.95	0	1377	0.099
0.496	0	27.39	0	1512	0.021
0.545	0	30.07	0	1660	0.0010
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.016		
3.206	0	176.9	0.26		
3.519	0	194.2	1.07		
3.863	0	213.2	2.40		
4.241	0	234.1	4.16		
4.656	0	256.9	6.15		
5.111	0	282.1	8.04		
5.611	0	309.6	9.51		
6.159	0	339.9	10.3		
6.761	0	373.1	10.4		
7.422	0	409.6	9.73		
8.148	0	449.7	8.60		
8.944	0	493.6	7.22		
9.819	0	541.9	5.81		
10.78	0	594.9	4.52		
11.83	0	653.0	3.44		
12.99	0	716.9	2.58		
14.26	0	786.9	1.93		
15.65	0	863.9	1.42		
17.18	0	948.3	1.02		
18.86	0	1041	0.69		

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.55.13.$ls STD SAND_ 5 Apr 2023_11.55.13.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	19 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.77%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:54 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	10%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.55.13.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	423.4 µm	S.D.:	164.0 µm
Median:	386.1 µm	Variance:	26894 µm^2
Mean/Median ratio:	1.097	Skewness:	1.674 Right skewed
Mode:	356.1 µm	Kurtosis:	4.130 Leptokurtic

d_{10}: 260.9 µm d_{50}: 386.1 µm d_{90}: 632.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.34	Median:	1.37	Deviation:	0.50
Skewness:	-0.12	Kurtosis:	1.02		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
237.9 µm	282.7 µm	310.5 µm	354.7 µm	386.1 µm	491.4 µm	559.5 µm	747.2 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.55.13 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.49
250	68.8
500	22.6
1000	1.11
2000	

STD SAND_ 5 Apr 2023_11.55.13.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.23
0.412	0	22.73	0	1255	0.12
0.452	0	24.95	0	1377	0.040
0.496	0	27.39	0	1512	0.0034
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.017		
3.206	0	176.9	0.29		
3.519	0	194.2	1.20		
3.863	0	213.2	2.71		
4.241	0	234.1	4.69		
4.656	0	256.9	6.88		
5.111	0	282.1	8.90		
5.611	0	309.6	10.4		
6.159	0	339.9	11.1		
6.761	0	373.1	10.9		
7.422	0	409.6	9.93		
8.148	0	449.7	8.48		
8.944	0	493.6	6.83		
9.819	0	541.9	5.23		
10.78	0	594.9	3.86		
11.83	0	653.0	2.78		
12.99	0	716.9	1.98		
14.26	0	786.9	1.41		
15.65	0	863.9	0.98		
17.18	0	948.3	0.67		
18.86	0	1041	0.42		

Surrogate Summary

6 Client HCay & Adrchler, Job ID: 570-123222-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
Lab Sample ID	Client Sample ID	DCA (60-140)	BFB (60-140)	DBFM (60-140)	TOL (60-140)
570-123222-1	E. SR6_30320232	M9	103	M9	87
570-123222-3	4S-30320232-1	109	101	80	100
F6 / 570-219322j1009	FHb 6 oembC/ HmpC	111	105	83	101
F6 / D 570-219322j5	FHb 6 oembC/ HmpC Dkp	10u	105	83	105
RS 570-219322j7	Ri ncoA SCHe=	109	88	83	101

Surrogate Legend

D6 & (1h8-Dlr cCodbi ncHei -A9)/ kdbf
SgS (9-Sdbmozl&odbbi eTi ei)/ kdbf
DSgR (Dlbdbmozl&odbmi ncHei)/ kdbf
4OF (4oCi ei -AM)/ kdbf

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	14DCBTN (67-133)
570-123222-1	E. SR6_30320232	120
F6 / 570-219u39j9	FHb 6 oembC/ HmpC	108
F6 / D 570-219u39j5	FHb 6 oembC/ HmpC Dkp	107
RS 570-219u39jM	Ri ncoA SCHe=	107

Surrogate Legend

19D6 S4N (1h9-Dlr cCodbbkrHei)/ kdbf

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
Lab Sample ID	Client Sample ID	TBP (28-127)	FBP (31-120)	2FP (17-120)	NBZ (27-120)	PHL6 (10-120)	TPHd14 (45-120)
570-123222-1	E. SR6_30320232	MM	5M	28	uu	37	71
F6 / 570-21u0M1j3-&	FHb 6 oembC/ HmpC	8u	u8	93	uu	38	M8
F6 / D 570-21u0M1j2-&	FHb 6 oembC/ HmpC Dkp	100	73	99	uM	20	80
RS 570-21u0M1j1-&	Ri ncoA SCHe=	u0	93	38	97	18	75

Surrogate Legend

4S. (3h9hu-4dbdbmopci eoC
gS. (3-gCkodbblpci eaC)/ kdbf
3g. (3-gCkodbpci eoC
NSZ (Nlndbbi eTi ei -A5
. t Fu (. ci eoCAu)/ kdbf
4. t A19 (p-4i dpci eaCA19)/ kdbf

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	BFB1 (20-144)
570-123222-1	E. SR6_30320232	u0

Ekdbzles 6 HCrli eri

Surrogate Summary

6 Client HCay & Adrchler, Job ID: 570-123222-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	BFB1 (20-144)	Percent Surrogate Recovery (Acceptance Limits)						
F6 / 570-215M08jM	FHb 6 oembC/ HmpC	M0							
F6 / D 570-215M08j8	FHb 6 oembC/ HmpC Dkp	8u							
RS 570-215M08j10	Ri ncoA SCHe=	u8							

Surrogate Legend

SgS (9-Scbmozl&odbbi eTi ei)/ kdf

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	OTCSN1 (53-151)	Percent Surrogate Recovery (Acceptance Limits)						
570-123222-1	E. SR6 _30320232	109							
F6 / 570-215897j3-&	FHb 6 oembC/ HmpC	88							
F6 / D 570-215897j2-&	FHb 6 oembC/ HmpC Dkp	105							
RS 570-215897j1-&	Ri ncoA SCHe=	103							

Surrogate Legend

O46 / N (e-Or nHrosHei)/ kdf

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-314233/7
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/23/23 18:36	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/23/23 18:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/23/23 18:36	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/23/23 18:36	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/23/23 18:36	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/23/23 18:36	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/23/23 18:36	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/23/23 18:36	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/23/23 18:36	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/23/23 18:36	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/23/23 18:36	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/23/23 18:36	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/23/23 18:36	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/23/23 18:36	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/23/23 18:36	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/23/23 18:36	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/23/23 18:36	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/23/23 18:36	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/23/23 18:36	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/23/23 18:36	1
2-Hexanone	ND		5.0	2.2	ug/L			03/23/23 18:36	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/23/23 18:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/23/23 18:36	1
Acetone	ND		20	16	ug/L			03/23/23 18:36	1
Acrolein	ND		5.0	4.6	ug/L			03/23/23 18:36	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/23/23 18:36	1
Benzene	ND		0.50	0.28	ug/L			03/23/23 18:36	1
Bromobenzene	ND		0.50	0.23	ug/L			03/23/23 18:36	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Bromoform	ND		1.0	0.25	ug/L			03/23/23 18:36	1
Bromomethane	ND		0.50	0.22	ug/L			03/23/23 18:36	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/23/23 18:36	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/23/23 18:36	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Chloroethane	ND		1.0	0.29	ug/L			03/23/23 18:36	1
Chloroform	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Chloromethane	ND		0.50	0.30	ug/L			03/23/23 18:36	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/23/23 18:36	1
Cyclohexane	ND		2.0	0.79	ug/L			03/23/23 18:36	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-314233/7
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.15	ug/L			03/23/23 18:36	1
Dibromomethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/23/23 18:36	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Ethanol	ND		100	65	ug/L			03/23/23 18:36	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/23/23 18:36	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/23/23 18:36	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Isopropanol	ND		250	120	ug/L			03/23/23 18:36	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/23/23 18:36	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/23/23 18:36	1
Naphthalene	ND		1.0	0.33	ug/L			03/23/23 18:36	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/23/23 18:36	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/23/23 18:36	1
o-Xylene	ND		0.50	0.15	ug/L			03/23/23 18:36	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/23/23 18:36	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/23/23 18:36	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/23/23 18:36	1
Styrene	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/23/23 18:36	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/23/23 18:36	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/23/23 18:36	1
Toluene	ND		0.50	0.23	ug/L			03/23/23 18:36	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/23/23 18:36	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/23/23 18:36	1
Trichloroethene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/23/23 18:36	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/23/23 18:36	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/23/23 18:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*194*		*39 - 149*		*03/23/23 18:36*	*1*
4-5roB omuorof enbene (Surr)	*: :*		*39 - 149*		*03/23/23 18:36*	*1*
Dif roB omuoroB ethane (Surr)	*: 2*		*39 - 149*		*03/23/23 18:36*	*1*
zoluene-d/ (Surr)	*191*		*39 - 149*		*03/23/23 18:36*	*1*

Lab Sample ID: LCS 570-314233/1004
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.9		ug/L		109	60 - 140
1,1,1-Trichloroethane	10.0	11.1		ug/L		111	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.36		ug/L		94	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	7.90		ug/L		79	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-314233/1004
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	10.0	9.95		ug/L		100	70 - 130
1,1-Dichloroethane	10.0	11.9		ug/L		119	70 - 130
1,1-Dichloroethene	10.0	10.7		ug/L		107	50 - 150
1,1-Dichloropropene	10.0	10.3		ug/L		103	60 - 140
1,2,3-Trichlorobenzene	10.0	9.96		ug/L		100	60 - 140
1,2,3-Trichloropropane	10.0	10.1		ug/L		101	60 - 140
1,2,4-Trichlorobenzene	10.0	10.0		ug/L		100	60 - 140
1,2,4-Trimethylbenzene	10.0	9.65		ug/L		96	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	9.56		ug/L		96	60 - 140
1,2-Dibromoethane	10.0	10.4		ug/L		104	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	9.04		ug/L		90	60 - 140
1,2-Dichlorobenzene	10.0	9.91		ug/L		99	65 - 135
1,2-Dichloroethane	10.0	12.4		ug/L		124	70 - 130
1,2-Dichloropropane	10.0	12.7		ug/L		127	35 - 165
1,3,5-Trimethylbenzene	10.0	11.1		ug/L		111	60 - 140
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,3-Dichloropropane	10.0	10.5		ug/L		105	60 - 140
1,4-Dichlorobenzene	10.0	10.4		ug/L		104	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	8.77	J,DX	ug/L		88	60 - 140
2,2-Dichloropropane	10.0	12.0		ug/L		120	60 - 140
2-Butanone (MEK)	10.0	9.31		ug/L		93	60 - 140
2-Chloroethyl vinyl ether	10.0	9.23		ug/L		92	1 - 225
2-Chlorotoluene	10.0	11.5		ug/L		115	60 - 140
2-Hexanone	10.0	9.36		ug/L		94	60 - 140
4-Chlorotoluene	10.0	10.4		ug/L		104	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	12.6		ug/L		126	60 - 140
Acetone	10.0	ND		ug/L		99	60 - 140
Acrolein	20.0	20.6		ug/L		103	60 - 140
Acrylonitrile	10.0	14.0		ug/L		140	60 - 140
Benzene	10.0	10.7		ug/L		107	65 - 135
Bromobenzene	10.0	11.5		ug/L		115	60 - 140
Bromochloromethane	10.0	10.7		ug/L		107	60 - 140
Bromodichloromethane	10.0	11.1		ug/L		111	65 - 135
Bromoform	10.0	10.8		ug/L		108	70 - 130
Bromomethane	10.0	11.6		ug/L		116	15 - 185
Carbon disulfide	10.0	8.29		ug/L		83	60 - 140
Carbon tetrachloride	10.0	10.4		ug/L		104	70 - 130
Chlorobenzene	10.0	11.0		ug/L		110	65 - 135
Chloroethane	10.0	9.95		ug/L		99	40 - 160
Chloroform	10.0	10.5		ug/L		105	70 - 135
Chloromethane	10.0	12.0		ug/L		120	1 - 205
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	60 - 140
cis-1,3-Dichloropropene	10.0	10.8		ug/L		108	25 - 175
Cyclohexane	10.0	9.61		ug/L		96	60 - 140
Dibromochloromethane	10.0	11.0		ug/L		110	70 - 135
Dibromomethane	10.0	11.0		ug/L		110	60 - 140
Dichlorodifluoromethane	10.0	10.3		ug/L		103	60 - 140
Di-isopropyl ether (DIPE)	10.0	12.7		ug/L		127	60 - 140
Ethanol	100	97.3	J,DX	ug/L		97	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-314233/1004
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	13.0		ug/L		130	60 - 140
Ethylbenzene	10.0	11.2		ug/L		112	60 - 140
Hexachloro-1,3-butadiene	10.0	10.9		ug/L		109	60 - 140
Isopropanol	50.0	ND		ug/L		107	60 - 140
Isopropylbenzene	10.0	11.3		ug/L		113	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	10.1		ug/L		101	60 - 140
Methylene Chloride	10.0	9.43		ug/L		94	60 - 140
Naphthalene	10.0	10.2		ug/L		102	60 - 140
n-Butylbenzene	10.0	10.9		ug/L		109	60 - 140
N-Propylbenzene	10.0	11.7		ug/L		117	60 - 140
o-Xylene	10.0	11.3		ug/L		113	60 - 140
m,p-Xylene	20.0	23.7		ug/L		118	60 - 140
p-Isopropyltoluene	10.0	10.3		ug/L		103	60 - 140
sec-Butylbenzene	10.0	10.5		ug/L		105	60 - 140
Styrene	10.0	11.1		ug/L		111	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	10.7		ug/L		107	60 - 140
tert-Butyl alcohol (TBA)	50.0	55.3		ug/L		111	60 - 140
tert-Butylbenzene	10.0	10.8		ug/L		108	60 - 140
Tetrachloroethene	10.0	11.6		ug/L		116	70 - 130
Tetrahydrofuran	10.0	12.1		ug/L		121	60 - 140
Toluene	10.0	11.0		ug/L		110	70 - 130
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
trans-1,3-Dichloropropene	10.0	10.4		ug/L		104	50 - 150
Trichloroethene	10.0	10.9		ug/L		109	65 - 135
Trichlorofluoromethane	10.0	10.5		ug/L		105	50 - 150
Vinyl acetate	10.0	11.5		ug/L		115	60 - 140
Vinyl chloride	10.0	11.0		ug/L		110	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*39 - 149*
4-5roB orhuorof enbene (Surr)	*198*		*39 - 149*
Dif roB orhuoroB ethane (Surr)	*: 2*		*39 - 149*
zoluene-d/ (Surr)	*191*		*39 - 149*

Lab Sample ID: LCSD 570-314233/5
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	11.1		ug/L		111	60 - 140	1	30
1,1,1-Trichloroethane	10.0	11.1		ug/L		111	70 - 130	1	36
1,1,2,2-Tetrachloroethane	10.0	9.50		ug/L		95	60 - 140	2	61
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	9.65		ug/L		97	60 - 140	20	30
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	70 - 130	2	45
1,1-Dichloroethane	10.0	11.9		ug/L		119	70 - 130	0	40
1,1-Dichloroethene	10.0	10.9		ug/L		109	50 - 150	1	32
1,1-Dichloropropene	10.0	10.5		ug/L		105	60 - 140	2	30
1,2,3-Trichlorobenzene	10.0	10.5		ug/L		105	60 - 140	6	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-314233/5
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichloropropane	10.0	9.96		ug/L		100	60 - 140	2	30
1,2,4-Trichlorobenzene	10.0	10.8		ug/L		108	60 - 140	8	30
1,2,4-Trimethylbenzene	10.0	10.2		ug/L		102	60 - 140	5	30
1,2-Dibromo-3-Chloropropane	10.0	9.93		ug/L		99	60 - 140	4	30
1,2-Dibromoethane	10.0	10.3		ug/L		103	60 - 140	1	30
1,2-Dichloro-1,1,2-trifluoroethane	10.0	9.51		ug/L		95	60 - 140	5	30
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	65 - 135	4	57
1,2-Dichloroethane	10.0	12.5		ug/L		125	70 - 130	1	49
1,2-Dichloropropane	10.0	12.7		ug/L		127	35 - 165	0	55
1,3,5-Trimethylbenzene	10.0	11.4		ug/L		114	60 - 140	2	30
1,3-Dichlorobenzene	10.0	10.7		ug/L		107	70 - 130	3	43
1,3-Dichloropropane	10.0	10.4		ug/L		104	60 - 140	1	30
1,4-Dichlorobenzene	10.0	10.8		ug/L		108	65 - 135	4	57
2,2-Dichloro-1,1,1-trifluoroethane	10.0	9.03	J,DX	ug/L		90	60 - 140	3	30
2,2-Dichloropropane	10.0	12.1		ug/L		121	60 - 140	1	30
2-Butanone (MEK)	10.0	7.93		ug/L		79	60 - 140	16	30
2-Chloroethyl vinyl ether	10.0	8.53		ug/L		85	1 - 225	8	71
2-Chlorotoluene	10.0	11.5		ug/L		115	60 - 140	1	30
2-Hexanone	10.0	11.1		ug/L		111	60 - 140	17	30
4-Chlorotoluene	10.0	11.0		ug/L		110	60 - 140	5	30
4-Methyl-2-pentanone (MIBK)	10.0	13.1		ug/L		131	60 - 140	4	30
Acetone	10.0	ND		ug/L		113	60 - 140	13	30
Acrolein	20.0	18.9		ug/L		95	60 - 140	8	60
Acrylonitrile	10.0	12.3		ug/L		123	60 - 140	13	60
Benzene	10.0	11.1		ug/L		111	65 - 135	3	61
Bromobenzene	10.0	11.4		ug/L		114	60 - 140	1	30
Bromochloromethane	10.0	10.3		ug/L		103	60 - 140	4	30
Bromodichloromethane	10.0	11.4		ug/L		114	65 - 135	2	56
Bromoform	10.0	10.9		ug/L		109	70 - 130	1	42
Bromomethane	10.0	10.7		ug/L		107	15 - 185	7	61
Carbon disulfide	10.0	10.2		ug/L		102	60 - 140	21	30
Carbon tetrachloride	10.0	11.0		ug/L		110	70 - 130	6	41
Chlorobenzene	10.0	11.1		ug/L		111	65 - 135	2	53
Chloroethane	10.0	9.15		ug/L		91	40 - 160	8	78
Chloroform	10.0	9.96		ug/L		100	70 - 135	5	30
Chloromethane	10.0	11.5		ug/L		115	1 - 205	4	60
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	60 - 140	0	30
cis-1,3-Dichloropropene	10.0	11.3		ug/L		113	25 - 175	4	58
Cyclohexane	10.0	10.8		ug/L		108	60 - 140	12	30
Dibromochloromethane	10.0	10.9		ug/L		109	70 - 135	1	50
Dibromomethane	10.0	11.3		ug/L		113	60 - 140	3	30
Dichlorodifluoromethane	10.0	7.99		ug/L		80	60 - 140	25	30
Di-isopropyl ether (DIPE)	10.0	12.3		ug/L		123	60 - 140	3	30
Ethanol	100	117		ug/L		117	60 - 140	18	30
Ethyl-t-butyl ether (ETBE)	10.0	12.6		ug/L		126	60 - 140	3	30
Ethylbenzene	10.0	11.6		ug/L		116	60 - 140	3	63
Hexachloro-1,3-butadiene	10.0	11.7		ug/L		117	60 - 140	7	30
Isopropanol	50.0	ND		ug/L		92	60 - 140	16	30
Isopropylbenzene	10.0	11.6		ug/L		116	60 - 140	2	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-314233/5
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	9.74		ug/L		97	60 - 140	4	30
Methylene Chloride	10.0	9.50		ug/L		95	60 - 140	1	28
Naphthalene	10.0	10.4		ug/L		104	60 - 140	2	30
n-Butylbenzene	10.0	11.4		ug/L		114	60 - 140	4	30
N-Propylbenzene	10.0	12.2		ug/L		122	60 - 140	4	30
o-Xylene	10.0	11.5		ug/L		115	60 - 140	2	30
m,p-Xylene	20.0	23.8		ug/L		119	60 - 140	1	30
p-Isopropyltoluene	10.0	10.8		ug/L		108	60 - 140	4	30
sec-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	5	30
Styrene	10.0	11.0		ug/L		110	60 - 140	1	30
Tert-amyl-methyl ether (TAME)	10.0	10.6		ug/L		106	60 - 140	1	30
tert-Butyl alcohol (TBA)	50.0	67.4		ug/L		135	60 - 140	20	30
tert-Butylbenzene	10.0	11.3		ug/L		113	60 - 140	4	30
Tetrachloroethene	10.0	11.9		ug/L		119	70 - 130	3	39
Tetrahydrofuran	10.0	11.5		ug/L		115	60 - 140	5	30
Toluene	10.0	11.2		ug/L		112	70 - 130	2	41
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130	3	45
trans-1,3-Dichloropropene	10.0	11.0		ug/L		110	50 - 150	5	86
Trichloroethene	10.0	11.8		ug/L		118	65 - 135	8	48
Trichlorofluoromethane	10.0	8.44		ug/L		84	50 - 150	22	84
Vinyl acetate	10.0	11.2		ug/L		112	60 - 140	3	30
Vinyl chloride	10.0	9.50		ug/L		95	5 - 195	15	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*193*		*39 - 149*
4-5roB orhuorof enbene (Surr)	*198*		*39 - 149*
Dif roB orhuoroB ethane (Surr)	*: 2*		*39 - 149*
zoluene-d/ (Surr)	*198*		*39 - 149*

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-314624/8
Matrix: Water
Analysis Batch: 314624

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/24/23 20:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorof utane (Surr)	*19T*		*3T - 166*		*960240 26 297 93*	*1*

Lab Sample ID: LCS 570-314624/4
Matrix: Water
Analysis Batch: 314624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	18.3		ug/L		91	75 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-314624/4
Matrix: Water
Analysis Batch: 314624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dichlorof utane (Surr)	*19:*		*3T - 166*

Lab Sample ID: LCSD 570-314624/5
Matrix: Water
Analysis Batch: 314624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	17.5		ug/L		88	75 - 120	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Dichlorof utane (Surr)	*19T*		*3T - 166*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-316081/1-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316081

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		03/30/23 10:27	03/31/23 14:39	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		03/30/23 10:27	03/31/23 14:39	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		03/30/23 10:27	03/31/23 14:39	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
2-Chlorophenol	ND		0.20	0.096	ug/L		03/30/23 10:27	03/31/23 14:39	1
2-Nitrophenol	ND		5.0	3.5	ug/L		03/30/23 10:27	03/31/23 14:39	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		03/30/23 10:27	03/31/23 14:39	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		03/30/23 10:27	03/31/23 14:39	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		03/30/23 10:27	03/31/23 14:39	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		03/30/23 10:27	03/31/23 14:39	1
4-Nitrophenol	ND		5.0	3.4	ug/L		03/30/23 10:27	03/31/23 14:39	1
Acenaphthene	ND		0.20	0.098	ug/L		03/30/23 10:27	03/31/23 14:39	1
Acenaphthylene	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
Anthracene	ND		0.20	0.084	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzidine	ND		5.0	2.7	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzo[a]pyrene	0.172	J,DX	0.20	0.15	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzo[b]fluoranthene	0.145	J,DX	0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-316081/1-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316081

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		03/30/23 10:27	03/31/23 14:39	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/30/23 10:27	03/31/23 14:39	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		03/30/23 10:27	03/31/23 14:39	1
Chrysene	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		03/30/23 10:27	03/31/23 14:39	1
Diethyl phthalate	0.195	J,DX	2.0	0.18	ug/L		03/30/23 10:27	03/31/23 14:39	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		03/30/23 10:27	03/31/23 14:39	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		03/30/23 10:27	03/31/23 14:39	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		03/30/23 10:27	03/31/23 14:39	1
Fluoranthene	ND		0.20	0.10	ug/L		03/30/23 10:27	03/31/23 14:39	1
Fluorene	ND		0.20	0.095	ug/L		03/30/23 10:27	03/31/23 14:39	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		03/30/23 10:27	03/31/23 14:39	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		03/30/23 10:27	03/31/23 14:39	1
Hexachloroethane	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
Indeno[1,2,3-cd]pyrene	0.149	J,DX	0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
Isophorone	ND		0.20	0.099	ug/L		03/30/23 10:27	03/31/23 14:39	1
Naphthalene	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Nitrobenzene	ND		0.20	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/30/23 10:27	03/31/23 14:39	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/30/23 10:27	03/31/23 14:39	1
Phenanthrene	ND		0.20	0.16	ug/L		03/30/23 10:27	03/31/23 14:39	1
Phenol	ND		1.0	0.52	ug/L		03/30/23 10:27	03/31/23 14:39	1
Pyrene	ND		0.20	0.086	ug/L		03/30/23 10:27	03/31/23 14:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,3-zrif roB ophenol	*39*		*2/ - 12T*	*960690260197T2T*	*960610260147&:*	*1*
2-Fluorof iphenyl (Surr)	*42*		*61 - 129*	*960690260197T2T*	*960610260147&:*	*1*
2-Fluorophenol	*2:*		*1T - 129*	*960690260197T2T*	*960610260147&:*	*1*
Nitrof enbene-d8	*4T*		*2T - 129*	*960690260197T2T*	*960610260147&:*	*1*
Phenol-d3 (Surr)	*1:*		*19 - 129*	*960690260197T2T*	*960610260147&:*	*1*
p-zerphenyl-d14 (Surr)	*T8*		*48 - 129*	*960690260197T2T*	*960610260147&:*	*1*

Lab Sample ID: LCS 570-316081/2-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316081

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	10.9	LR	ug/L		55	57 - 130
1,2-Dichlorobenzene	20.0	11.7		ug/L		59	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	16.8		ug/L		84	60 - 115
1,3-Dichlorobenzene	20.0	11.0		ug/L		55	37 - 120
1,4-Dichlorobenzene	20.0	11.6		ug/L		58	39 - 120
2,4,6-Trichlorophenol	20.0	16.8		ug/L		84	52 - 129

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-316081/2-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316081

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dichlorophenol	20.0	14.9		ug/L		74	53 - 122
2,4-Dimethylphenol	20.0	15.0		ug/L		75	42 - 120
2,4-Dinitrophenol	20.0	13.3		ug/L		67	1 - 173
2,4-Dinitrotoluene	20.0	20.4		ug/L		102	48 - 127
2,6-Dinitrotoluene	20.0	19.9		ug/L		100	68 - 137
2-Chloronaphthalene	20.0	13.5		ug/L		67	65 - 120
2-Chlorophenol	20.0	14.4		ug/L		72	36 - 120
2-Nitrophenol	20.0	15.8		ug/L		79	45 - 167
3,3'-Dichlorobenzidine	20.0	18.7		ug/L		94	8 - 213
4,6-Dinitro-2-methylphenol	20.0	19.0		ug/L		95	53 - 130
4-Bromophenyl phenyl ether	20.0	15.5		ug/L		78	65 - 120
4-Chloro-3-methylphenol	20.0	15.4		ug/L		77	41 - 128
4-Chlorophenyl phenyl ether	20.0	15.2		ug/L		76	38 - 145
4-Nitrophenol	20.0	8.20		ug/L		41	13 - 129
Acenaphthene	20.0	14.6		ug/L		73	60 - 132
Acenaphthylene	20.0	17.5		ug/L		88	54 - 126
Anthracene	20.0	18.5		ug/L		93	43 - 120
Benzidine	20.0	6.41		ug/L		32	20 - 164
Benzo[a]anthracene	20.0	19.2		ug/L		96	42 - 133
Benzo[a]pyrene	20.0	20.8		ug/L		104	32 - 148
Benzo[b]fluoranthene	20.0	19.2		ug/L		96	42 - 140
Benzo[g,h,i]perylene	20.0	19.8		ug/L		99	1 - 195
Benzo[k]fluoranthene	20.0	20.3		ug/L		101	25 - 146
bis (2-chloroisopropyl) ether	20.0	14.4		ug/L		72	63 - 139
Bis(2-chloroethoxy)methane	20.0	12.6		ug/L		63	49 - 165
Bis(2-chloroethyl)ether	20.0	13.8		ug/L		69	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	22.9		ug/L		115	29 - 137
Butyl benzyl phthalate	20.0	21.2		ug/L		106	1 - 140
Chrysene	20.0	18.3		ug/L		92	44 - 140
Dibenz(a,h)anthracene	20.0	18.5		ug/L		92	1 - 200
Diethyl phthalate	20.0	18.8		ug/L		94	1 - 120
Dimethyl phthalate	20.0	18.5		ug/L		92	1 - 120
Di-n-butyl phthalate	20.0	19.8		ug/L		99	8 - 120
Di-n-octyl phthalate	20.0	23.9		ug/L		120	19 - 132
Fluoranthene	20.0	18.7		ug/L		94	43 - 121
Fluorene	20.0	15.7		ug/L		79	70 - 120
Hexachlorobenzene	20.0	15.9		ug/L		80	8 - 142
Hexachlorobutadiene	20.0	10.5		ug/L		53	38 - 120
Hexachlorocyclopentadiene	20.0	15.1		ug/L		75	43 - 145
Hexachloroethane	20.0	11.2		ug/L		56	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	18.5		ug/L		93	1 - 151
Isophorone	20.0	14.4		ug/L		72	47 - 180
Naphthalene	20.0	11.0		ug/L		55	36 - 120
Nitrobenzene	20.0	13.6		ug/L		68	54 - 158
N-Nitrosodimethylamine	20.0	8.93		ug/L		45	20 - 120
N-Nitrosodi-n-propylamine	20.0	15.0		ug/L		75	14 - 198
N-Nitrosodiphenylamine	20.0	19.4		ug/L		97	65 - 133
Pentachlorophenol	20.0	13.7		ug/L		68	38 - 152
Phenanthrene	20.0	16.4		ug/L		82	65 - 120

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-316081/2-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316081

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Phenol			20.0	6.01		ug/L		30	17 - 120		
Pyrene			20.0	17.5		ug/L		87	70 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,3-zrif roB ophenol	*: 3*		*2/ - 12T*
2-Fluorof iphenyl (Surr)	*3:*		*61 - 129*
2-Fluorophenol	*42*		*1T - 129*
Nitrof enbene-d8	*33*		*2T - 129*
Phenol-d3 (Surr)	*2:*		*19 - 129*
p-zerphenyl-d14 (Surr)	*/ :*		*48 - 129*

Lab Sample ID: LCSD 570-316081/3-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 316081

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene			20.0	10.7	LR	ug/L		53	57 - 130	2	30
1,2-Dichlorobenzene			20.0	12.1		ug/L		61	40 - 120	3	20
1,2-Diphenylhydrazine(as Azobenzene)			20.0	17.1		ug/L		85	60 - 115	2	30
1,3-Dichlorobenzene			20.0	12.0		ug/L		60	37 - 120	8	20
1,4-Dichlorobenzene			20.0	12.1		ug/L		60	39 - 120	4	20
2,4,6-Trichlorophenol			20.0	17.2		ug/L		86	52 - 129	2	35
2,4-Dichlorophenol			20.0	15.2		ug/L		76	53 - 122	2	30
2,4-Dimethylphenol			20.0	15.0		ug/L		75	42 - 120	0	35
2,4-Dinitrophenol			20.0	14.2		ug/L		71	1 - 173	6	79
2,4-Dinitrotoluene			20.0	21.2		ug/L		106	48 - 127	4	25
2,6-Dinitrotoluene			20.0	21.1		ug/L		106	68 - 137	6	29
2-Chloronaphthalene			20.0	14.0		ug/L		70	65 - 120	4	15
2-Chlorophenol			20.0	15.2		ug/L		76	36 - 120	5	37
2-Nitrophenol			20.0	16.6		ug/L		83	45 - 167	5	33
3,3'-Dichlorobenzidine			20.0	18.9		ug/L		95	8 - 213	1	65
4,6-Dinitro-2-methylphenol			20.0	20.5		ug/L		103	53 - 130	8	122
4-Bromophenyl phenyl ether			20.0	15.8		ug/L		79	65 - 120	2	26
4-Chloro-3-methylphenol			20.0	16.2		ug/L		81	41 - 128	5	44
4-Chlorophenyl phenyl ether			20.0	16.0		ug/L		80	38 - 145	5	36
4-Nitrophenol			20.0	8.87		ug/L		44	13 - 129	8	79
Acenaphthene			20.0	15.3		ug/L		77	60 - 132	5	29
Acenaphthylene			20.0	18.4		ug/L		92	54 - 126	4	45
Anthracene			20.0	19.0		ug/L		95	43 - 120	2	40
Benzidine			20.0	9.53	BA	ug/L		48	20 - 164	39	30
Benzo[a]anthracene			20.0	19.0		ug/L		95	42 - 133	1	32
Benzo[a]pyrene			20.0	20.6		ug/L		103	32 - 148	1	43
Benzo[b]fluoranthene			20.0	19.4		ug/L		97	42 - 140	1	43
Benzo[g,h,i]perylene			20.0	20.5		ug/L		102	1 - 195	3	61
Benzo[k]fluoranthene			20.0	20.9		ug/L		104	25 - 146	3	38
bis (2-chloroisopropyl) ether			20.0	14.6		ug/L		73	63 - 139	2	46
Bis(2-chloroethoxy)methane			20.0	12.6		ug/L		63	49 - 165	0	32
Bis(2-chloroethyl)ether			20.0	14.3		ug/L		71	43 - 126	4	65

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-316081/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 316467 **Prep Batch: 316081**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate	20.0	23.3		ug/L		117	29 - 137	2	50
Butyl benzyl phthalate	20.0	21.2		ug/L		106	1 - 140	0	36
Chrysene	20.0	18.7		ug/L		94	44 - 140	2	53
Dibenz(a,h)anthracene	20.0	19.0		ug/L		95	1 - 200	3	75
Diethyl phthalate	20.0	20.0		ug/L		100	1 - 120	6	60
Dimethyl phthalate	20.0	19.5		ug/L		97	1 - 120	5	110
Di-n-butyl phthalate	20.0	20.8		ug/L		104	8 - 120	5	28
Di-n-octyl phthalate	20.0	24.0		ug/L		120	19 - 132	0	42
Fluoranthene	20.0	19.5		ug/L		98	43 - 121	4	40
Fluorene	20.0	16.7		ug/L		84	70 - 120	6	23
Hexachlorobenzene	20.0	16.1		ug/L		80	8 - 142	1	33
Hexachlorobutadiene	20.0	10.5		ug/L		53	38 - 120	0	38
Hexachlorocyclopentadiene	20.0	15.4		ug/L		77	43 - 145	2	22
Hexachloroethane	20.0	11.6		ug/L		58	55 - 120	3	32
Indeno[1,2,3-cd]pyrene	20.0	18.9		ug/L		94	1 - 151	2	60
Isophorone	20.0	14.9		ug/L		75	47 - 180	4	56
Naphthalene	20.0	11.2		ug/L		56	36 - 120	2	39
Nitrobenzene	20.0	14.0		ug/L		70	54 - 158	3	37
N-Nitrosodimethylamine	20.0	8.51		ug/L		43	20 - 120	5	21
N-Nitrosodi-n-propylamine	20.0	15.5		ug/L		77	14 - 198	3	52
N-Nitrosodiphenylamine	20.0	19.7		ug/L		99	65 - 133	2	20
Pentachlorophenol	20.0	14.3		ug/L		71	38 - 152	4	52
Phenanthrene	20.0	16.8		ug/L		84	65 - 120	2	24
Phenol	20.0	6.20		ug/L		31	17 - 120	3	39
Pyrene	20.0	17.4		ug/L		87	70 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,3-zrif roB ophenol	*199*		*2/ - 12T*
2-Fluorof iphenyl (Surr)	*T2*		*61 - 129*
2-Fluorophenol	*44*		*1T - 129*
Nitrof enbene-d8	*3/*		*2T - 129*
Phenol-d3 (Surr)	*69*		*19 - 129*
p-zerphenyl-d14 (Surr)	*: 9*		*48 - 129*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-315809/10 **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 315809

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/29/23 14:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-5roB orhuorof enbene (Surr)	*3:*		*29 - 144*		*960 2: 026 147 84*	*1*

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCS 570-315809/8
Matrix: Water
Analysis Batch: 315809

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	2060		ug/L		107	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-5roB orhuorof enbene (Surr)	*/ 9*		*29 - 144*

Lab Sample ID: LCSD 570-315809/9
Matrix: Water
Analysis Batch: 315809

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	2170		ug/L		113	71 - 120	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-5roB orhuorof enbene (Surr)	*: 3*		*29 - 144*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-315947/1-A
Matrix: Water
Analysis Batch: 316730

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315947

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/29/23 21:24	04/01/23 12:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*192*		*86 - 181*	*960 2: 026 2172 4*	*940 9102 6 1273*	*1*

Lab Sample ID: LCS 570-315947/2-A
Matrix: Water
Analysis Batch: 316730

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315947

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			4.00	3.85		mg/L		96	65 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*: :*		*86 - 181*

Lab Sample ID: LCSD 570-315947/3-A
Matrix: Water
Analysis Batch: 316730

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315947

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			4.00	4.19		mg/L		105	65 - 129	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*198*		*86 - 181*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-314343/4
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/24/23 01:54	1

Lab Sample ID: LCS 570-314343/5
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	50.3		ug/L		100	95 - 107

Lab Sample ID: LCSD 570-314343/6
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	49.5		ug/L		99	95 - 107	1	20

Lab Sample ID: MB 570-314348/1-A
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/24/23 07:17	1

Lab Sample ID: LCS 570-314348/2-A
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	50.5		ug/L		101	95 - 107

Lab Sample ID: LCSD 570-314348/3-A
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	50.3		ug/L		100	95 - 107	1	20

Lab Sample ID: 570-132333-1 MS
Matrix: Water
Analysis Batch: 314343

Client Sample ID: EPBMC_20230323
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	0.022	J,DX	50.1	52.5		ug/L		105	85 - 121

Lab Sample ID: 570-132333-1 MSD
Matrix: Water
Analysis Batch: 314343

Client Sample ID: EPBMC_20230323
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	0.022	J,DX	50.1	49.0		ug/L		98	85 - 121	7	25

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-314324/5
Matrix: Water
Analysis Batch: 314324

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/23/23 21:57	1
Fluoride	ND		0.10	0.046	mg/L			03/23/23 21:57	1
Sulfate	ND		1.0	0.24	mg/L			03/23/23 21:57	1

Lab Sample ID: LCS 570-314324/6
Matrix: Water
Analysis Batch: 314324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	51.8		mg/L		104	90 - 110
Fluoride	2.50	2.61		mg/L		105	90 - 110
Sulfate	50.0	50.5		mg/L		101	90 - 110

Lab Sample ID: LCSD 570-314324/7
Matrix: Water
Analysis Batch: 314324

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	51.9		mg/L		104	90 - 110	0	15
Fluoride	2.50	2.60		mg/L		104	90 - 110	0	15
Sulfate	50.0	50.7		mg/L		101	90 - 110	0	15

Lab Sample ID: MB 570-314325/5
Matrix: Water
Analysis Batch: 314325

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/23/23 21:57	1
Nitrate as N	ND		0.10	0.020	mg/L			03/23/23 21:57	1

Lab Sample ID: LCS 570-314325/6
Matrix: Water
Analysis Batch: 314325

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.48		mg/L		99	90 - 110
Nitrate as N	5.00	5.19		mg/L		104	90 - 110

Lab Sample ID: LCSD 570-314325/7
Matrix: Water
Analysis Batch: 314325

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.49		mg/L		100	90 - 110	0	15
Nitrate as N	5.00	5.19		mg/L		104	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-314458/7
Matrix: Water
Analysis Batch: 314458

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/24/23 12:33	1

Lab Sample ID: LCS 570-314458/8
Matrix: Water
Analysis Batch: 314458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.5		ug/L		98	85 - 115

Lab Sample ID: LCSD 570-314458/9
Matrix: Water
Analysis Batch: 314458

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.4		ug/L		98	85 - 115	0	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-314891/1-A
Matrix: Water
Analysis Batch: 315463

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 314891

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.50	0.0035	mg/L		03/27/23 08:29	03/28/23 11:44	1

Lab Sample ID: LCS 570-314891/2-A
Matrix: Water
Analysis Batch: 315463

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 314891

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.500	0.481	J,DX	mg/L		96	85 - 115

Lab Sample ID: LCSD 570-314891/3-A
Matrix: Water
Analysis Batch: 315463

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 314891

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.500	0.486	J,DX	mg/L		97	85 - 115	1	20

Lab Sample ID: MB 570-314531/1-A
Matrix: Water
Analysis Batch: 315160

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.50	0.0035	mg/L			03/27/23 18:01	1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 570-314531/2-A
Matrix: Water
Analysis Batch: 315160

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.500	0.453	J,DX	mg/L		91	85 - 115

Lab Sample ID: LCSD 570-314531/3-A
Matrix: Water
Analysis Batch: 315160

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.500	0.465	J,DX	mg/L		93	85 - 115	3	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-314924/1-A
Matrix: Water
Analysis Batch: 315053

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 314924

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		03/27/23 08:51	03/27/23 12:53	1
Silver	ND		1.0	0.23	ug/L		03/27/23 08:51	03/27/23 12:53	1
Arsenic	ND		1.0	0.16	ug/L		03/27/23 08:51	03/27/23 12:53	1
Barium	ND		1.0	0.17	ug/L		03/27/23 08:51	03/27/23 12:53	1
Beryllium	ND	IB	0.50	0.26	ug/L		03/27/23 08:51	03/27/23 12:53	1
Cadmium	ND		1.0	0.13	ug/L		03/27/23 08:51	03/27/23 12:53	1
Chromium	ND		2.0	0.14	ug/L		03/27/23 08:51	03/27/23 12:53	1
Cobalt	ND		1.0	0.14	ug/L		03/27/23 08:51	03/27/23 12:53	1
Copper	ND		2.0	0.32	ug/L		03/27/23 08:51	03/27/23 12:53	1
Iron	ND		20	3.7	ug/L		03/27/23 08:51	03/27/23 12:53	1
Manganese	1.77		1.0	0.41	ug/L		03/27/23 08:51	03/27/23 12:53	1
Nickel	ND		2.0	0.17	ug/L		03/27/23 08:51	03/27/23 12:53	1
Lead	ND		1.0	0.12	ug/L		03/27/23 08:51	03/27/23 12:53	1
Antimony	ND		2.0	0.36	ug/L		03/27/23 08:51	03/27/23 12:53	1
Zinc	ND		20	2.8	ug/L		03/27/23 08:51	03/27/23 12:53	1
Selenium	ND		2.0	0.52	ug/L		03/27/23 08:51	03/27/23 12:53	1
Thallium	ND		1.0	0.11	ug/L		03/27/23 08:51	03/27/23 12:53	1

Lab Sample ID: LCS 570-314924/2-A
Matrix: Water
Analysis Batch: 315053

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 314924

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	75.0		ug/L		94	85 - 115
Silver	80.0	78.4		ug/L		98	85 - 115
Arsenic	80.0	78.1		ug/L		98	85 - 115
Barium	80.0	77.0		ug/L		96	85 - 115
Beryllium	80.0	75.3	IB	ug/L		94	85 - 115
Cadmium	80.0	77.4		ug/L		97	85 - 115
Chromium	80.0	77.5		ug/L		97	85 - 115
Cobalt	80.0	76.3		ug/L		95	85 - 115
Copper	80.0	73.1		ug/L		91	85 - 115
Iron	800	777		ug/L		97	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-314924/2-A
Matrix: Water
Analysis Batch: 315053

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 314924

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	80.0	80.7		ug/L		101	85 - 115
Nickel	80.0	76.7		ug/L		96	85 - 115
Lead	80.0	78.2		ug/L		98	85 - 115
Antimony	80.0	74.9		ug/L		94	85 - 115
Zinc	80.0	76.7		ug/L		96	85 - 115
Selenium	80.0	79.2		ug/L		99	85 - 115
Thallium	80.0	74.8		ug/L		94	85 - 115

Lab Sample ID: LCSD 570-314924/3-A
Matrix: Water
Analysis Batch: 315053

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 314924

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	75.3		ug/L		94	85 - 115	0	20
Silver	80.0	77.1		ug/L		96	85 - 115	2	20
Arsenic	80.0	77.6		ug/L		97	85 - 115	1	20
Barium	80.0	76.1		ug/L		95	85 - 115	1	20
Beryllium	80.0	75.4	IB	ug/L		94	85 - 115	0	20
Cadmium	80.0	76.6		ug/L		96	85 - 115	1	20
Chromium	80.0	76.7		ug/L		96	85 - 115	1	20
Cobalt	80.0	75.8		ug/L		95	85 - 115	1	20
Copper	80.0	72.2		ug/L		90	85 - 115	1	20
Iron	800	780		ug/L		98	85 - 115	0	20
Manganese	80.0	82.6		ug/L		103	85 - 115	2	20
Nickel	80.0	76.3		ug/L		95	85 - 115	1	20
Lead	80.0	78.6		ug/L		98	85 - 115	0	20
Antimony	80.0	74.9		ug/L		94	85 - 115	0	20
Zinc	80.0	76.1		ug/L		95	85 - 115	1	20
Selenium	80.0	77.4		ug/L		97	85 - 115	2	20
Thallium	80.0	75.6		ug/L		94	85 - 115	1	20

Lab Sample ID: 570-132333-1 MS
Matrix: Water
Analysis Batch: 315053

Client Sample ID: EPBMC_20230323
Prep Type: Total Recoverable
Prep Batch: 314924

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	2200		80.0	2600	BB	ug/L		500	80 - 120
Silver	ND		80.0	75.8		ug/L		95	80 - 120
Arsenic	1.5		80.0	78.2		ug/L		96	80 - 120
Barium	70		80.0	147		ug/L		97	80 - 120
Beryllium	ND	IB	80.0	73.6	IB	ug/L		92	80 - 120
Cadmium	ND		80.0	75.3		ug/L		94	80 - 120
Chromium	4.1		80.0	79.6		ug/L		94	80 - 120
Cobalt	1.8		80.0	74.8		ug/L		91	80 - 120
Copper	3.3		80.0	72.7		ug/L		87	80 - 120
Iron	4000		800	4720	BB	ug/L		95	80 - 120
Manganese	97	MB	80.0	172		ug/L		94	80 - 120
Nickel	3.4		80.0	75.5		ug/L		90	80 - 120
Lead	1.5		80.0	77.0		ug/L		94	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-132333-1 MS
Matrix: Water
Analysis Batch: 315053

Client Sample ID: EPBMC_20230323
Prep Type: Total Recoverable
Prep Batch: 314924

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.88	J,DX	80.0	69.0		ug/L		85	80 - 120
Zinc	11	J,DX	80.0	82.9		ug/L		90	80 - 120
Selenium	4.1		80.0	80.1		ug/L		95	80 - 120
Thallium	ND		80.0	72.2		ug/L		90	80 - 120

Lab Sample ID: 570-132333-1 MSD
Matrix: Water
Analysis Batch: 315053

Client Sample ID: EPBMC_20230323
Prep Type: Total Recoverable
Prep Batch: 314924

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	2200		80.0	2760	BB	ug/L		692	80 - 120	6	20
Silver	ND		80.0	78.2		ug/L		98	80 - 120	3	20
Arsenic	1.5		80.0	81.0		ug/L		99	80 - 120	3	20
Barium	70		80.0	153		ug/L		104	80 - 120	4	20
Beryllium	ND	IB	80.0	79.0	IB	ug/L		99	80 - 120	7	20
Cadmium	ND		80.0	77.6		ug/L		97	80 - 120	3	20
Chromium	4.1		80.0	82.1		ug/L		97	80 - 120	3	20
Cobalt	1.8		80.0	77.3		ug/L		94	80 - 120	3	20
Copper	3.3		80.0	75.3		ug/L		90	80 - 120	3	20
Iron	4000		800	4970	BB	ug/L		127	80 - 120	5	20
Manganese	97	MB	80.0	176		ug/L		99	80 - 120	2	20
Nickel	3.4		80.0	78.4		ug/L		94	80 - 120	4	20
Lead	1.5		80.0	79.2		ug/L		97	80 - 120	3	20
Antimony	0.88	J,DX	80.0	71.9		ug/L		89	80 - 120	4	20
Zinc	11	J,DX	80.0	85.5		ug/L		93	80 - 120	3	20
Selenium	4.1		80.0	81.3		ug/L		97	80 - 120	2	20
Thallium	ND		80.0	75.3		ug/L		94	80 - 120	4	20

Lab Sample ID: MB 570-314528/1-A
Matrix: Water
Analysis Batch: 314988

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			03/27/23 10:22	1
Silver	ND		1.0	0.23	ug/L			03/27/23 10:22	1
Arsenic	ND		1.0	0.16	ug/L			03/27/23 10:22	1
Barium	ND		1.0	0.17	ug/L			03/27/23 10:22	1
Beryllium	ND	IB	0.50	0.26	ug/L			03/27/23 10:22	1
Cadmium	ND		1.0	0.13	ug/L			03/27/23 10:22	1
Chromium	ND		2.0	0.14	ug/L			03/27/23 10:22	1
Cobalt	ND		1.0	0.14	ug/L			03/27/23 10:22	1
Copper	ND		2.0	0.32	ug/L			03/27/23 10:22	1
Iron	ND		20	3.7	ug/L			03/27/23 10:22	1
Manganese	ND		1.0	0.41	ug/L			03/27/23 10:22	1
Nickel	ND		2.0	0.17	ug/L			03/27/23 10:22	1
Lead	ND		1.0	0.12	ug/L			03/27/23 10:22	1
Antimony	ND		2.0	0.36	ug/L			03/27/23 10:22	1
Zinc	ND		20	2.8	ug/L			03/27/23 10:22	1
Selenium	ND		2.0	0.52	ug/L			03/27/23 10:22	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-314528/1-A
Matrix: Water
Analysis Batch: 314988

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	ND		1.0	0.11	ug/L			03/27/23 10:22	1

Lab Sample ID: LCS 570-314528/2-A
Matrix: Water
Analysis Batch: 314988

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	81.2		ug/L		101	85 - 115
Silver	80.0	81.2		ug/L		102	85 - 115
Arsenic	80.0	79.1		ug/L		99	85 - 115
Barium	80.0	79.6		ug/L		99	85 - 115
Beryllium	80.0	91.9	IB	ug/L		115	85 - 115
Cadmium	80.0	79.4		ug/L		99	85 - 115
Chromium	80.0	80.8		ug/L		101	85 - 115
Cobalt	80.0	79.8		ug/L		100	85 - 115
Copper	80.0	79.5		ug/L		99	85 - 115
Iron	800	814		ug/L		102	85 - 115
Manganese	80.0	81.7		ug/L		102	85 - 115
Nickel	80.0	80.6		ug/L		101	85 - 115
Lead	80.0	82.0		ug/L		103	85 - 115
Antimony	80.0	76.4		ug/L		95	85 - 115
Zinc	80.0	78.2		ug/L		98	85 - 115
Selenium	80.0	78.0		ug/L		97	85 - 115
Thallium	80.0	80.7		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-314528/3-A
Matrix: Water
Analysis Batch: 314988

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	85.8		ug/L		107	85 - 115	6	20
Silver	80.0	82.9		ug/L		104	85 - 115	2	20
Arsenic	80.0	79.5		ug/L		99	85 - 115	1	20
Barium	80.0	81.9		ug/L		102	85 - 115	3	20
Beryllium	80.0	93.8	IB LQ	ug/L		117	85 - 115	2	20
Cadmium	80.0	81.5		ug/L		102	85 - 115	3	20
Chromium	80.0	82.1		ug/L		103	85 - 115	2	20
Cobalt	80.0	82.1		ug/L		103	85 - 115	3	20
Copper	80.0	81.2		ug/L		101	85 - 115	2	20
Iron	800	832		ug/L		104	85 - 115	2	20
Manganese	80.0	83.6		ug/L		105	85 - 115	2	20
Nickel	80.0	82.1		ug/L		103	85 - 115	2	20
Lead	80.0	84.2		ug/L		105	85 - 115	3	20
Antimony	80.0	79.5		ug/L		99	85 - 115	4	20
Zinc	80.0	79.9		ug/L		100	85 - 115	2	20
Selenium	80.0	75.9		ug/L		95	85 - 115	3	20
Thallium	80.0	82.0		ug/L		103	85 - 115	2	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-315782/1-A
Matrix: Water
Analysis Batch: 316000

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315782

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/29/23 13:05	03/30/23 07:47	1

Lab Sample ID: LCS 570-315782/2-A
Matrix: Water
Analysis Batch: 316000

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315782

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	36.6		mg/L		92	78 - 114

Lab Sample ID: LCSD 570-315782/3-A
Matrix: Water
Analysis Batch: 316000

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315782

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)	40.0	37.7		mg/L		94	78 - 114	3	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-316971/5-B
Matrix: Water
Analysis Batch: 317033

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316971

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		04/03/23 10:18	04/03/23 12:09	1

Lab Sample ID: LCS 570-316971/6-B
Matrix: Water
Analysis Batch: 317033

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316971

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	0.500	0.492		mg/L		98	90 - 110

Lab Sample ID: LCSD 570-316971/7-B
Matrix: Water
Analysis Batch: 317033

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 316971

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.500	0.481		mg/L		96	90 - 110	2	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-315871/11
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/29/23 13:56	1

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate (Continued)

Lab Sample ID: LCS 570-315871/12
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	250	249		ug/L		100	90 - 110

Lab Sample ID: LCSD 570-315871/13
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total	250	249		ug/L		100	90 - 110	0	20

Lab Sample ID: MRL 570-315871/10
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	5.00	4.82	J,DX	ug/L		96	50 - 150

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-314625/1
Matrix: Water
Analysis Batch: 314625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		99.7	99.0 - 101.0

Lab Sample ID: LCSSRM 570-314625/2
Matrix: Water
Analysis Batch: 314625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		100.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-314625/3
Matrix: Water
Analysis Batch: 314625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-316225/10
Matrix: Water
Analysis Batch: 316225

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/30/23 11:38	1

Method: SM 2510B - Conductivity, Specific Conductance (Continued)

Lab Sample ID: MB 570-316225/42
Matrix: Water
Analysis Batch: 316225

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/30/23 14:48	1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-315801/1
Matrix: Water
Analysis Batch: 315801

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/29/23 13:29	1

Lab Sample ID: LCS 570-315801/2
Matrix: Water
Analysis Batch: 315801

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1030		mg/L		103	84 - 108

Lab Sample ID: LCSD 570-315801/3
Matrix: Water
Analysis Batch: 315801

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	84 - 108	0	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-315826/1
Matrix: Water
Analysis Batch: 315826

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/29/23 15:09	1

Lab Sample ID: LCS 570-315826/2
Matrix: Water
Analysis Batch: 315826

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	95.0		mg/L		95	77 - 116

Lab Sample ID: LCSD 570-315826/3
Matrix: Water
Analysis Batch: 315826

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	95.0		mg/L		95	77 - 116	0	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCS 570-314487/2-A
Matrix: Water
Analysis Batch: 315785

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314487

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	204		mg/L		103	84.6 - 115.4

Lab Sample ID: 570-132333-1 DU
Matrix: Water
Analysis Batch: 315785

Client Sample ID: EPBMC_20230323
Prep Type: Total/NA
Prep Batch: 314487

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Biochemical Oxygen Demand	ND		ND		mg/L		NC	25

Lab Sample ID: 570-11803-A-12-A USB
Matrix: Water
Analysis Batch: 315785

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			03/24/23 11:37	1

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-317988/4
Matrix: Water
Analysis Batch: 317988

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			04/06/23 02:49	1

Lab Sample ID: LCS 570-317988/5
Matrix: Water
Analysis Batch: 317988

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon, Total Organic	5.03	4.86		mg/L		97	85 - 115

Lab Sample ID: LCSD 570-317988/6
Matrix: Water
Analysis Batch: 317988

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic	5.03	4.94		mg/L		98	85 - 115	2	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-314685/5-A
Matrix: Water
Analysis Batch: 314693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314685

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/24/23 16:43	03/24/23 17:22	1

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: LCS 570-314685/6-A
Matrix: Water
Analysis Batch: 314693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314685

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.519		mg/L		104	83 - 122		

Lab Sample ID: LCSD 570-314685/7-A
Matrix: Water
Analysis Batch: 314693

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314685

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.527		mg/L		105	83 - 122	2	10

Lab Sample ID: 570-132333-1 MS
Matrix: Water
Analysis Batch: 314693

Client Sample ID: EPBMC_20230323
Prep Type: Total/NA
Prep Batch: 314685

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS	0.067	J,DX	0.500	0.493		mg/L		85	64 - 141		

Lab Sample ID: 570-132333-1 MSD
Matrix: Water
Analysis Batch: 314693

Client Sample ID: EPBMC_20230323
Prep Type: Total/NA
Prep Batch: 314685

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS	0.067	J,DX	0.500	0.496		mg/L		86	64 - 141	1	10

GC/MS VOA

Analysis Batch: 318233

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	624.1	
570-132333-2	TB-20230323-1	Total/NA	Water	624.1	
MB 570-314233/7	Method Blank	Total/NA	Water	624.1	
LCS 570-314233/1004	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-314233/5	Lab Control Sample Dup	Total/NA	Water	624.1	

Analysis Batch: 318d28

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	8260B SIM	
MB 570-314624/8	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-314624/4	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-314624/5	Lab Control Sample Dup	Total/NA	Water	8260B SIM	

GC/MS Spmi VOA

Drpb Batch: 31d951

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	625	
MB 570-316081/1-A	Method Blank	Total/NA	Water	625	
LCS 570-316081/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-316081/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 31d8d4

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	625.1 SIM	316081
MB 570-316081/1-A	Method Blank	Total/NA	Water	625.1 SIM	316081
LCS 570-316081/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	316081
LCSD 570-316081/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	316081

GC VOA

Analysis Batch: 310597

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	8015B	
MB 570-315809/10	Method Blank	Total/NA	Water	8015B	
LCS 570-315809/8	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-315809/9	Lab Control Sample Dup	Total/NA	Water	8015B	

GC Spmi VOA

Drpb Batch: 310784

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	3510C	
MB 570-315947/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-315947/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-315947/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 31d439

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	8015B	315947
MB 570-315947/1-A	Method Blank	Total/NA	Water	8015B	315947
LCS 570-315947/2-A	Lab Control Sample	Total/NA	Water	8015B	315947

GC Spmi VOA HContinupxF

Analysis Batch: 31d439 HContinupxF

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
LCSD 570-315947/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	315947

(D6C/dC

Analysis Batch: 318328

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	300.0	
570-132333-1 - DL	EPBMC_20230323	Total/NA	Water	300.0	
MB 570-314324/5	Method Blank	Total/NA	Water	300.0	
LCS 570-314324/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-314324/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 318320

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	300.0	
MB 570-314325/5	Method Blank	Total/NA	Water	300.0	
LCS 570-314325/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-314325/7	Lab Control Sample Dup	Total/NA	Water	300.0	

Analysis Batch: 318383

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	218.6	314348
570-132333-1	EPBMC_20230323	Total/NA	Water	218.6	
MB 570-314343/4	Method Blank	Total/NA	Water	218.6	
MB 570-314348/1-A	Method Blank	Dissolved	Water	218.6	314348
LCS 570-314343/5	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-314348/2-A	Lab Control Sample	Dissolved	Water	218.6	314348
LCSD 570-314343/6	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-314348/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	314348
570-132333-1 MS	EPBMC_20230323	Dissolved	Water	218.6	314348
570-132333-1 MSD	EPBMC_20230323	Dissolved	Water	218.6	314348

) iltration Batch: 318385

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	Filtration	
MB 570-314348/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-314348/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-314348/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-132333-1 MS	EPBMC_20230323	Dissolved	Water	Filtration	
570-132333-1 MSD	EPBMC_20230323	Dissolved	Water	Filtration	

Analysis Batch: 318805

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	314.0	
MB 570-314458/7	Method Blank	Total/NA	Water	314.0	
LCS 570-314458/8	Lab Control Sample	Total/NA	Water	314.0	
LCSD 570-314458/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 310110

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	NO2NO3 Calc	

Mptals

) iltration Batch: 318025

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	Filtration	
MB 570-314528/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-314528/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-314528/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

) iltration Batch: 318031

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	Filtration	
MB 570-314531/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-314531/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-314531/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 318d07

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	SM 2340B	

Analysis Batch: 318dd9

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total Recoverable	Water	SM 2340B	

Drpb Batch: 318571

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total Recoverable	Water	200.7	
MB 570-314891/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-314891/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-314891/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	

Drpb Batch: 318728

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total Recoverable	Water	200.8	
MB 570-314924/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-314924/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-314924/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-132333-1 MS	EPBMC_20230323	Total Recoverable	Water	200.8	
570-132333-1 MSD	EPBMC_20230323	Total Recoverable	Water	200.8	

Analysis Batch: 318755

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	200.8	314528
MB 570-314528/1-A	Method Blank	Dissolved	Water	200.8	314528
LCS 570-314528/2-A	Lab Control Sample	Dissolved	Water	200.8	314528
LCSD 570-314528/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	314528

Analysis Batch: 310903

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total Recoverable	Water	200.8	314924
MB 570-314924/1-A	Method Blank	Total Recoverable	Water	200.8	314924
LCS 570-314924/2-A	Lab Control Sample	Total Recoverable	Water	200.8	314924
LCSD 570-314924/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	314924
570-132333-1 MS	EPBMC_20230323	Total Recoverable	Water	200.8	314924
570-132333-1 MSD	EPBMC_20230323	Total Recoverable	Water	200.8	314924

Mptals

Analysis Batch: 3101d9

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	200.7 Rev 4.4	314531
MB 570-314531/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	314531
LCS 570-314531/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	314531
LCSD 570-314531/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	314531

Analysis Batch: 3108d3

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total Recoverable	Water	200.7 Rev 4.4	314891
MB 570-314891/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	314891
LCS 570-314891/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	314891
LCSD 570-314891/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	314891

Gpnpral Chpmistry

Analysis Batch: 318837

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	SM 2540F	

Drpb Batch: 318854

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	BOD Prep	
LCS 570-314487/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	
570-132333-1 DU	EPBMC_20230323	Total/NA	Water	BOD Prep	

Analysis Batch: 318d20

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	SM 2130B	
LCSSRM 570-314625/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-314625/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-314625/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Drpb Batch: 318d50

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	SM 5540C	
MB 570-314685/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-314685/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-314685/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	
570-132333-1 MS	EPBMC_20230323	Total/NA	Water	SM 5540C	
570-132333-1 MSD	EPBMC_20230323	Total/NA	Water	SM 5540C	

Analysis Batch: 318d73

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	SM 5540C	314685
MB 570-314685/5-A	Method Blank	Total/NA	Water	SM 5540C	314685
LCS 570-314685/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	314685
LCSD 570-314685/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	314685
570-132333-1 MS	EPBMC_20230323	Total/NA	Water	SM 5540C	314685
570-132333-1 MSD	EPBMC_20230323	Total/NA	Water	SM 5540C	314685

Gpnpral Chpmistry

Drpb Batch: 310452

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	1664A	
MB 570-315782/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-315782/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-315782/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 310450

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	SM 5210B	314487
570-11803-A-12-A USB	Method Blank	Total/NA	Water	SM 5210B	
LCS 570-314487/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	314487
570-132333-1 DU	EPBMC_20230323	Total/NA	Water	SM 5210B	314487

Analysis Batch: 310591

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	SM 2540C	
MB 570-315801/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-315801/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-315801/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 31052d

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	SM 2540D	
MB 570-315826/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-315826/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-315826/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 310541

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	Kelada 01	
MB 570-315871/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-315871/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-315871/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-315871/10	Lab Control Sample	Total/NA	Water	Kelada 01	

Analysis Batch: 31d999

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	1664A	315782
MB 570-315782/1-A	Method Blank	Total/NA	Water	1664A	315782
LCS 570-315782/2-A	Lab Control Sample	Total/NA	Water	1664A	315782
LCSD 570-315782/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	315782

Analysis Batch: 31d220

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	SM 2510B	
MB 570-316225/10	Method Blank	Total/NA	Water	SM 2510B	
MB 570-316225/42	Method Blank	Total/NA	Water	SM 2510B	

Drpb Batch: 31d741

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	Distill/Ammonia	
MB 570-316971/5-B	Method Blank	Total/NA	Water	Distill/Ammonia	

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-1

Gpnpral Chpmistry HContinupxF

Drpb Batch: 31d741 HContinupxF

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
LCS 570-316971/6-B	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-316971/7-B	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 314933

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	350.1	316971
MB 570-316971/5-B	Method Blank	Total/NA	Water	350.1	316971
LCS 570-316971/6-B	Lab Control Sample	Total/NA	Water	350.1	316971
LCSD 570-316971/7-B	Lab Control Sample Dup	Total/NA	Water	350.1	316971

Analysis Batch: 31448d

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	218.6 CR3	

Analysis Batch: 314400

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	218.6 CR3	

Analysis Batch: 314755

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	SM 5310D	
MB 570-317988/4	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-317988/5	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-317988/6	Lab Control Sample Dup	Total/NA	Water	SM 5310D	

Gpotpchnical

Analysis Batch: 314028

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	D4464	
LCS 570-317524/17	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-317524/19	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-1

Client Sample ID: EPBMC_20230323

Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	314233	03/24/23 00:21	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	314624	03/24/23 21:56	G6NI	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			992.7 mL	2 mL	316081	03/30/23 10:27	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	316467	03/31/23 21:59	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	315809	03/30/23 03:13	P1R	EET CAL 4
	Instrument ID: GC53									
Total/NA	Prep	3510C			246.2 mL	2.5 mL	315947	03/29/23 21:24	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	316730	04/01/23 20:50	N1A	EET CAL 4
	Instrument ID: GC48									
Dissolved	Filtration	Filtration			100 mL	100 mL	314348	03/24/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	314343	03/24/23 07:53	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	314343	03/24/23 06:17	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		2	4 mL	4 mL	314324	03/24/23 05:25	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0		2	4 mL	4 mL	314325	03/24/23 05:25	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0	DL	10	4 mL	4 mL	314324	03/24/23 05:43	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	314.0		1	4 mL	4 mL	314458	03/25/23 03:37	M5Z3	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			315115	03/27/23 16:56	WH6J	EET CAL 4
	Instrument ID: NOEQUIP									
Dissolved	Filtration	Filtration			50 mL	50 mL	314531	03/24/23 13:05	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			315160	03/27/23 18:33	P1R	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	314891	03/27/23 08:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			315463	03/28/23 11:58	K1UV	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	314528	03/24/23 12:44	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			314988	03/27/23 10:41	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	314924	03/27/23 08:51	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			315053	03/27/23 12:59	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Analysis	SM 2340B		1			314659	03/29/23 19:06	P1R	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Analysis	SM 2340B		1			314660	03/30/23 19:07	P1R	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-1

Client Sample ID: EPBMC_20230323

Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			1049 mL	1000 mL	315782	03/29/23 13:05	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			316000	03/30/23 07:47	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Dissolved	Analysis	218.6 CR3		1			317755	04/05/23 15:22	URMH	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6 CR3		1			317746	04/05/23 15:09	URMH	EET CAL 4
	Instrument ID: IC33									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	316971	04/03/23 10:18	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	317033	04/03/23 12:39	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	315871	03/29/23 14:58	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			314625	03/24/23 17:29	ZVB7	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			316225	03/30/23 16:37	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	315801	03/29/23 13:29	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	800 mL	1000 mL	315826	03/29/23 15:09	LNW3	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	314439	03/24/23 16:35	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	BOD Prep					314487	03/24/23 11:11	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	315785	03/24/23 12:08	TN8Z	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	SM 5310D		4	40 mL	40 mL	317988	04/06/23 07:38	UAPD	EET CAL 4
	Instrument ID: TOC12									
Total/NA	Prep	SM 5540C			100 mL	100 mL	314685	03/24/23 16:43	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	314693	03/24/23 17:27	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	D4464		1			317524	04/05/23 08:04	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230323-1

Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	314233	03/24/23 01:27	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124222-1
6roRectj/ ite: SoeinB / / gF l/ L A and SR 6

Laboratory: Eurofins Calscience

All accreditationMjcertisicationMheld by thiMlaboratory are liMed. f ot all accreditationMjcertisicationMare aNNicable to thiMreNort.

Authority	Program	Identification Number	Expiration Date
Aripona	/ tate	Az0Z20	11-18-42
Calisornia	FoMAnBeleMCo3nty / anitation DiMrictM	1010u	07-21-42
Calisornia	/ CA9 R D FA6	17FA0u1u	11-20-42
Calisornia	/ tate	20Z4	07-21-4Q
f evada	/ tate	CA00111	0Z-01-42
OreBon	f EFA6	Q175	04-04-4Q
U/ DA	U/ gederal 6roBramM	6220-44-0005u	05-4Q-42
WaMhinBton	/ tate	Cu18-1Z	10-11-42

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

1664A = EPA-821-98-002
ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132333-1	EPBMC_20230323	Water	03/23/23 11:10	03/23/23 19:20
570-132333-2	TB-20230323-1	Water	03/23/23 11:10	03/23/23 19:20

570-132333 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9808	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBMC_20230323	3/23/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230323-1	3/23/23	1110	TB	WM	3	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #
Time of Readings 1110
DO (mg/L) 16.76
pH 8.52
Temp (°C/°F) 13.77°C
TRC (mg/L)
Checked by: MMD
Date/Time: 3/23/23 1300

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~ECI #570144595~~ ECI #570187 ECI #570144595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.:	
Relinquished by: Michelle Dallalah	Company: H&A	Date/Time: 3/23/23 1695	Received by: EC Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: IEC Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Date/Time:

2.4/2.4 2.9/2.9 3.1/3.1 SCI

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12))(SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C)(E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodephnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	8-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBMC_20230323	3/23/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☑ Return to Client ☐ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ~~ECI #570145~~ ECI # ~~570145~~ = 57014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes

	Custody Seal No.:				
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Receiv	EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	FE	Date/Time: 3/23/23 1920
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212491.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132333-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132333-3)	3/23/23	11:10 Pacific		Water			X				3	See Attached Instructions
												RUN PAST HT — VIR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 1447			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212452.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132333-1
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/6/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
Preservation Code:									
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									-VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 9:48	EC		3/24/23 0948	ET
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212452

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212453.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132336-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X		See Attached Instructions
									RUN PAST HT
									- V RENDR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		3-24-23 9:48	EC		3/24/23 0948	EM
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212453

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132333-1

Login Number: 132333
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/4/2023 10:12:04 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132333-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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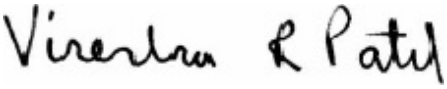
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-2

Qualifiers

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-2

Job ID: 570-132333-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132333-2

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.9º C and 3.1º C.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-2

Client Sample ID: EPBMC_20230323

Lab Sample ID: 570-132333-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.0084		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0039	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBMC_20230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0084		0.00050	0.000079	ug/L			03/29/23 18:47	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBMC_20230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0039	MB	0.00050	0.000079	ug/L			03/29/23 17:45	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-421801/26
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/29/23 16:46	1

Lab Sample ID: MB 580-421801/27
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/29/23 16:50	1

Lab Sample ID: MB 580-421801/29
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/29/23 16:59	1

Lab Sample ID: LCS 580-421801/30
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00492		ug/L		98	77 - 123		

Lab Sample ID: LCSD 580-421801/31
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00484		ug/L		97	77 - 123	2	24

Lab Sample ID: MB 580-421483/1-A
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000916	J,DX	0.00050	0.000079	ug/L			03/29/23 15:52	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-2

Metals

Filtration Batch: 421483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	Filtration	
MB 580-421483/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 421801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	1631E	421483
570-132333-1	EPBMC_20230323	Total/NA	Water	1631E	
MB 580-421483/1-A	Method Blank	Dissolved	Water	1631E	421483
MB 580-421801/26	Method Blank	Total/NA	Water	1631E	
MB 580-421801/27	Method Blank	Total/NA	Water	1631E	
MB 580-421801/29	Method Blank	Total/NA	Water	1631E	
LCS 580-421801/30	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-421801/31	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-2

Client Sample ID: EPBMC_20230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132333-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	421483	03/27/23 12:42	AJD	EET SEA
Dissolved	Analysis	1631E		1			421801	03/29/23 17:45	D1C	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			421801	03/29/23 18:47	D1C	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-2

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132333-1	EPBMC_20230323	Water	03/23/23 11:10	03/23/23 19:20

Loc: 570
132333

570-132333 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9808	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBMC_20230323	3/23/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230323-1	3/23/23	1110	TB	WM	3	N	N														x					

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #
Time of Readings 1110
DO (mg/L) 16.76
pH 8.52
Temp (°C/°F) 13.77°C
TRC (mg/L)
Checked by: MMD
Date/Time: 3/23/23 1300

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~ECI #570144595~~ ECI #570187 ECI#570144595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.:	
Relinquished by: Michelle Dallalah	Company: H&A	Date/Time: 3/23/23 1695	Received by: EC 3/23/23	Date/Time: 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.4/2.4 2.9/2.9 3.1/3.1 Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12))(SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C)(E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540CE425.1)	Turbidity, TDS (SM2540CE180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodephnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	8-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBMC_20230323	3/23/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☑ Return to Client ☐ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ~~ECI #570145~~ ECI # ~~570145~~ = 57014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Receiv	EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	FE	Date/Time: 3/23/23 1920
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212491.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132333-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132333-3)	3/23/23	11:10 Pacific		Water			X				3	See Attached Instructions
												RUN PAST HT — VIR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-24-23 1447			3-24-23 1447	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212452.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132333-1
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/6/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
Preservation Code:									
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									-VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-24-23 9:48	EC		3/24/23 0948	ED
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212452

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212453.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132336-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X		See Attached Instructions
									RUN PAST HT
									— V RENDR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		3-24-23 9:48	EC		3/24/23 0948	EM
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212453

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212458.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-132333-2
Address: 5755 8th Street East,	Due Date Requested: 4/10/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	03/24/23 8:35	EC	K Hosley	3/25/23 0945	EEC

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: IR9 08/11

Ver: 06/08/2021 4/4/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132333-2

Login Number: 132333
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132333-2

Login Number: 132333
List Number: 3
Creator: Deebach, Andrew J

List Source: Eurofins Seattle
List Creation: 03/27/23 12:16 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:01:45 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132333-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

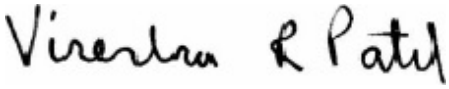
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132333-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132333-3

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.9º C and 3.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-3

Method	Method Description	Protocol	Laboratory
Subcontract	Quant-Tray - E. Coli - level 4 required	None	Enthalpy

Protocol References:

None = None

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132333-1	EPBMC_20230323	Water	03/23/23 11:10	03/23/23 19:20

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 482177
Report Level: IV
Report Date: 04/04/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Project: BOEING NPDES SSFL - (570-132333-1) Boeing SSFL ISRA and BMP - Project #57014595

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	Lab Job #: Project No: Location: Date Received:	482177 BOEING NPDES SSFL (570-132333-1) Boeing SSFL ISRA and BMP - Project #57014595 03/24/23

Sample ID	Lab ID	Collected	Matrix
EPBMC_20230323 (570-132333-1)	482177-001	03/23/23 11:10	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	482177
	Project No:	BOEING NPDES SSFL
	Location:	(570-132333-1) Boeing SSFL ISRA and BMP - Project #57014595
	Date Received:	03/24/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/24/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

482177

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212452.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132333-1
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/6/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT -VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 9:48	EC		3/24/23 0948	EC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		1.8 / 3.4

Ver: 06/08/2021

4/9/2023

ICOC No:
570-212452

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins Calscience

Project: Boeing SSFL ISRA and BMP

Date Received: 3/24/23

Sampler's Name Present: ☐ Yes ☑ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler) :

Sample Temp (°C), One from each cooler: #1: 3.4 #2: #3: #4:

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information:

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other

Cooler Temp (°C): #1: 1.8 #2: #3: #4:

Section 4	YES	NO	N/A
Was a COC received?	✔		
Are sample IDs present?	✔		
Are sampling dates & times present?	✔		
Is a relinquished signature present?	✔		
Are the tests required clearly indicated on the COC?	✔		
Are custody seals present?		✔	
If custody seals are present, were they intact?			✔
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✔		
Did all samples arrive intact? If no, indicate in Section 4 below.	✔		
Did all bottle labels agree with COC? (ID, dates and times)	✔		
Were the samples collected in the correct containers for the required tests?	✔		
Are the containers labeled with the correct preservatives?	✔		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✔
Was a sufficient amount of sample submitted for the requested tests?	✔		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: Date/Time

☐ Email (email sent to/on): /

Project Manager's response:

Completed By: Date: 3/24/23

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 482177 **Project#:** BOEING NPDES SSFL

Client: Eurofins Calscience Tustin **Location:** (570-132333-1) Boeing SSFL ISRA an...

Field ID:	EPBMC_20230323 (570-132333-1)	**Batch#:**	310429	**Analyzed:**	03/25/23 09:40
Lab ID:	482177-001	**Sampled:**	03/23/23 11:10	**Prep:**	
Matrix:	Water	**Received:**	03/24/23	**Analysis:**	SM 9223Bb
DiIn Fac:	1.000	**Prepared:**	03/24/23 14:18	**Analyst:**	VLC

482177-001 Analyte	Result	RL	Units	Qual
Coliform, E. Coli	**110**	1.0	MPN/100ml	H

Legend

H: Holding time was exceeded

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: VC Prep Date/Time: 3/24/23 1418 QC Batch ID: 316429 Batch Page 1 of 1

Read Analyst: JA Read Date/Time 3/25/23 0940

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: HU430 Pipette Lot #: A104193/A104222/A104170

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 3/1/23 Bottle Lot #: DU0060 Comparator Lot #: HU148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 35.4°C 1437 Incubator Out, Temp/Time: 35.3°C 0940

Fecal Coliform: Water Bath ID: NA Water Bath In, Temp/Time: NA Water Bath Out, Temp/Time: NA

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		482181-001	1x	49	48	>2419.6	>2400	49	21	365.4	360					CA-01
		↓	10x	49	33	727.0	7300	18	3	25.6	260					↓
			100x	40	8	93.3	9300	1	0	1.0	100					
		482180-001	1x	49	48	>2419.6	>2400	27	2	40.4	40					EU-01
		↓	10x	49 ~~27~~ JA 3/25/23	29	579.4	5800 ~~579.6~~ JA 3/25/23	5	0	5.2	52					↓
			100x	25	2	36.4	3600	1	0	1.0	100					
		482177-001	1x	49	48	>2419.6	>2400	42	10	110.6	110					EN-01
		↓	10x	49	39	1046.2	10,000	6	0	6.3	63					↓
			100x	38	8	83.9	8400	0	0	<1	<100					
						JA 3/25/23										
Quality Control		**Culture ID**														
Positive +/+ (E. Coli)		3/19/23		49	48	>2419.6	>2400	49	48	>2419.6	>2400					
Positive +/- (K. Pneumonia)		↓		49	48	>2419.6	>2400	0	0	<1	<1					
Negative -/- (P. Aeruginosa)				0	0	<1	<1	0	0	<1	<1					

Data Entered By: JA 3/25/23 Data Reviewed By:

570-132333 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9808	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBMC_20230323	3/23/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230323-1	3/23/23	1110	TB	WM	3	N	N														x					Time of Readings 1110
																										DO (mg/L) 16.76
																										pH 8.52
																										Temp (°C/°F) 13.77°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 3/23/23 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Sample Disposal

Special Instructions/QC Requirements & Comments: ~~ECI #570144595~~ ECI #5703187 ECI #570144595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.:	
Relinquished by: Michelle Dallalah	Company: H&A	Date/Time: 3/23/23 1695	Received by: EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.4/2.4 2.9/2.9 3.1/3.1 SCI

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12))(SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C)(E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodephnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	8-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBMC_20230323	3/23/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1110	TB	WM	3 1	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ~~ECI #57014595~~ ECI # ~~57014595~~ 57014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Receiv	EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	FE	Date/Time: 3/23/23 1920
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212491.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132333-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	X	X	X		8	See Attached Instructions
TB-20230323-2 (570-132333-3)	3/23/23	11:10 Pacific		Water			X					3	See Attached Instructions
													RUN PAST HT — VIR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 1447			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212452.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132333-1
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/6/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
Preservation Code:									
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									-VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-24-23 9:48	EC		3/24/23 0948	ED
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212452

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212453.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132336-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X		See Attached Instructions
									RUN PAST HT
									— V RENDR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		3-24-23 9:48	EC		3/24/23 0948	EM
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212453

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132333-3

Login Number: 132333
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132333-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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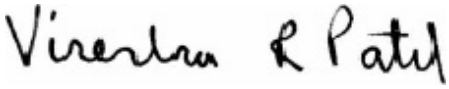
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-4

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132333-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132333-4

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.9º C and 3.1º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: EPBMC_20230323 (570-132333-1), (CCV 320-669579/17) and (MB 320-668853/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: (CCV 320-670020/1), (LCS 320-668853/2-A) and (LCSD 320-668853/3-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-129222-4

Client Sample ID: EPBMC_20230323

Lab Sample ID: 570-132333-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,9,2,4,7,3-H8CDD	0.0000019	J,DX	0.00004x	0.000000019	ug/L	1		1q12B	Total/NA
1,9,2,7,3,x-H8CDD	0.0000001q	J,DX 6	0.00004x	0.000000011	ug/L	1		1q12B	Total/NA
1,9,2,4,q,7,3-HpCDD	0.0000093	J,DX MB 6	0.00004x	0.000000019	ug/L	1		1q12B	Total/NA
1,9,2,4,q,7,3-HpCDF	0.0000015	J,DX 6	0.00004x	0.000000095	ug/L	1		1q12B	Total/NA
OCDD	0.000020	J,DX MB	0.0000xx	0.000000091	ug/L	1		1q12B	Total/NA
OCDF	0.00000q9	J,DX MB	0.0000xx	0.000000012	ug/L	1		1q12B	Total/NA
Total H8CDD	0.0000014	J,DX 6	0.00004x	0.000000011	ug/L	1		1q12B	Total/NA
Total HpCDD	0.0000057	J,DX MB 6	0.00004x	0.000000019	ug/L	1		1q12B	Total/NA
Total HpCDF	0.0000015	J,DX 6	0.00004x	0.000000095	ug/L	1		1q12B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBMC920230323
Date Collected: 03/23/23 11:10
Date Received: 03/23/23 15:20

Lab Sample ID: 570-132333-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000099	0.00000020	ug/L		04/20/23 06:26	04/23/23 08:19	1
2,3,7,8-TCDF	ND		0.0000099	0.00000086	ug/L		04/20/23 06:26	04/23/23 08:19	1
1,2,3,7,8-PeCDD	ND		0.000049	0.00000018	ug/L		04/20/23 06:26	04/23/23 08:19	1
1,2,3,7,8-PeCDF	ND		0.000049	0.00000010	ug/L		04/20/23 06:26	04/23/23 08:19	1
2,3,4,7,8-PeCDF	ND		0.000049	0.000000011	ug/L		04/20/23 06:26	04/23/23 08:19	1
1,2,3,q,7,8-HxCDD	**0.0000012**	**J,DX**	0.000049	0.00000012	ug/L		04/20/23 06:26	04/23/23 08:19	1
1,2,3,6,7,8-HxCDD	ND		0.000049	0.00000012	ug/L		04/20/23 06:26	04/23/23 08:19	1
1,2,3,7,8,v-HxCDD	**0.00000016**	**J,DX 4**	0.000049	0.000000011	ug/L		04/20/23 06:26	04/23/23 08:19	1
1,2,3,4,7,8-HxCDF	ND		0.000049	0.00000047	ug/L		04/20/23 06:26	04/23/23 08:19	1
1,2,3,6,7,8-HxCDF	ND		0.000049	0.00000043	ug/L		04/20/23 06:26	04/23/23 08:19	1
1,2,3,7,8,9-HxCDF	ND		0.000049	0.00000046	ug/L		04/20/23 06:26	04/23/23 08:19	1
2,3,4,6,7,8-HxCDF	ND		0.000049	0.00000043	ug/L		04/20/23 06:26	04/23/23 08:19	1
1,2,3,q,6,7,8-HpCDD	**0.0000028**	**J,DX MB 4**	0.000049	0.00000012	ug/L		04/20/23 06:26	04/23/23 08:19	1
1,2,3,q,6,7,8-HpCDF	**0.0000015**	**J,DX 4**	0.000049	0.00000025	ug/L		04/20/23 06:26	04/23/23 08:19	1
1,2,3,4,7,8,9-HpCDF	ND		0.000049	0.00000026	ug/L		04/20/23 06:26	04/23/23 08:19	1
OCDD	**0.000030**	**J,DX MB**	0.000099	0.00000021	ug/L		04/20/23 06:26	04/23/23 08:19	1
OCDF	**0.0000062**	**J,DX MB**	0.000099	0.00000013	ug/L		04/20/23 06:26	04/23/23 08:19	1
Total TCDD	ND		0.0000099	0.00000020	ug/L		04/20/23 06:26	04/23/23 08:19	1
Total TCDF	ND		0.0000099	0.00000086	ug/L		04/20/23 06:26	04/23/23 08:19	1
Total PeCDD	ND		0.000049	0.00000018	ug/L		04/20/23 06:26	04/23/23 08:19	1
Total PeCDF	ND		0.000049	0.00000010	ug/L		04/20/23 06:26	04/23/23 08:19	1
Total HxCDD	**0.000001q**	**J,DX 4**	0.000049	0.000000011	ug/L		04/20/23 06:26	04/23/23 08:19	1
Total HxCDF	ND		0.000049	0.00000043	ug/L		04/20/23 06:26	04/23/23 08:19	1
Total HpCDD	**0.0000057**	**J,DX MB 4**	0.000049	0.00000012	ug/L		04/20/23 06:26	04/23/23 08:19	1
Total HpCDF	**0.0000015**	**J,DX 4**	0.000049	0.00000025	ug/L		04/20/23 06:26	04/23/23 08:19	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*82*		*25 - 164*	*04/20/23 06:26*	*04/23/23 08:19*	*1*
13C-2,3,7,8-TCDF	*77*		*24 - 169*	*04/20/23 06:26*	*04/23/23 08:19*	*1*
13C-1,2,3,7,8-PeCDD	*82*		*25 - 181*	*04/20/23 06:26*	*04/23/23 08:19*	*1*
13C-1,2,3,7,8-PeCDF	*78*		*24 - 185*	*04/20/23 06:26*	*04/23/23 08:19*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBMC920230323
Lab Sample ID: 570-132333-1
Date Collected: 03/23/23 11:10
Matrix: Water
Date Received: 03/23/23 17:20

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	79		21 - 178	04/20/23 06:26	04/23/23 08:19	1
13C-1,2,3,4,7,8-HxCDD	92		32 - 141	04/20/23 06:26	04/23/23 08:19	1
13C-1,2,3,6,7,8-HxCDD	92		28 - 130	04/20/23 06:26	04/23/23 08:19	1
13C-1,2,3,4,7,8-HxCDF	80		26 - 152	04/20/23 06:26	04/23/23 08:19	1
13C-1,2,3,6,7,8-HxCDF	84		26 - 123	04/20/23 06:26	04/23/23 08:19	1
13C-1,2,3,7,8,9-HxCDF	80		29 - 147	04/20/23 06:26	04/23/23 08:19	1
13C-2,3,4,6,7,8-HxCDF	84		28 - 136	04/20/23 06:26	04/23/23 08:19	1
13C-1,2,3,4,6,7,8-HpCDD	90		23 - 140	04/20/23 06:26	04/23/23 08:19	1
13C-1,2,3,4,6,7,8-HpCDF	74		28 - 143	04/20/23 06:26	04/23/23 08:19	1
13C-1,2,3,4,7,8,9-HpCDF	78		26 - 138	04/20/23 06:26	04/23/23 08:19	1
13C-OCDD	72		17 - 157	04/20/23 06:26	04/23/23 08:19	1
13C-OCDF	65		17 - 157	04/20/23 06:26	04/23/23 08:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	93		35 - 197	04/20/23 06:26	04/23/23 08:19	1

Surrogate Summary

Client: Haynes & Andrews, Inc. Job ID: 570-124222-C
Job/Project: Benton Fuel Bulk Plant Dyer Bay

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	37TCDD (35-197)	Percent Surrogate Recovery (Acceptance Limits)
570-124222-1	Jig Bay 340420242	E2	
8 g 240-996652S1-d	8 nH, or giyt k	E9	

Surrogate Legend

27TCDD = 27Cl iC-4.2.7.6-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	37TCDD (31-191)	Percent Surrogate Recovery (Acceptance Limits)
RCB 240-996652S4-d	Ryb Lot Hoi Bympin	106	
RCBD 240-996652S2-d	Ryb Lot Hoi Bympin Dup	E7	

Surrogate Legend

27TCDD = 27Cl iC-4.2.7.6-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-132333-1	EPBMC_20230323	82	77	82	78	79	92	92	80
MB 320-668853/1-A	Method Blank	69	64	65	64	66	68	68	60

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-132333-1	EPBMC_20230323	84	80	84	90	74	78	72	65
MB 320-668853/1-A	Method Blank	60	57	61	69	54	56	50	46

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-668853/2-A	Lab Control Sample	71	82	61	67	69	57	56	63
LCSD 320-668853/3-A	Lab Control Sample Dup	61	100	55	65	60	69	73	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-668853/2-A	Lab Control Sample	61	66	66	57	56	63	71	69
LCSD 320-668853/3-A	Lab Control Sample Dup	104	111	113	82	95	110	138	177

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132333-4
Project/Site: Boeing SSFL ISRA and BMP

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-668853/1-A
Matrix: Water
Analysis Batch: 669579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 668853

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.000000063	ug/L		04/20/23 06:26	04/22/23 23:29	1
2,3,7,8-TCDF	ND		0.000010	0.000000062	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000010	ug/L		04/20/23 06:26	04/22/23 23:29	1
2,3,4,7,8-PeCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,7,8-HxCDD	ND		0.000050	0.00000030	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000030	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000028	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000018	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000017	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.00000019	ug/L		04/20/23 06:26	04/22/23 23:29	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000017	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,6,7,8-HpCDD	0.00000144	J,DX q	0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,6,7,8-HpCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1
OCDD	0.00000787	J,DX q	0.00010	0.00000015	ug/L		04/20/23 06:26	04/22/23 23:29	1
OCDF	0.00000368	J,DX	0.00010	0.00000027	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total TCDD	ND		0.000010	0.00000063	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total TCDF	ND		0.000010	0.00000062	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total PeCDD	ND		0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total PeCDF	ND		0.000050	0.00000010	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HxCDD	ND		0.000050	0.00000028	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HxCDF	ND		0.000050	0.00000017	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HpCDD	0.00000187	J,DX q	0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HpCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*25 - 164*	*04/20/23 06:26*	*04/22/23 23:29*	*1*
13C-2,3,7,8-TCDF	*64*		*24 - 169*	*04/20/23 06:26*	*04/22/23 23:29*	*1*
13C-1,2,3,7,8-PeCDD	*65*		*25 - 181*	*04/20/23 06:26*	*04/22/23 23:29*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-668853/1-A
Matrix: Water
Analysis Batch: 669579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 668853

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	64		24 - 185	04/20/23 06:26	04/22/23 23:29	1
13C-2,3,4,7,8-PeCDF	66		21 - 178	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,7,8-HxCDD	68		32 - 141	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,6,7,8-HxCDD	68		28 - 130	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,7,8-HxCDF	60		26 - 152	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,6,7,8-HxCDF	60		26 - 123	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,7,8,9-HxCDF	57		29 - 147	04/20/23 06:26	04/22/23 23:29	1
13C-2,3,4,6,7,8-HxCDF	61		28 - 136	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,6,7,8-HpCDD	69		23 - 140	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,6,7,8-HpCDF	54		28 - 143	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,7,8,9-HpCDF	56		26 - 138	04/20/23 06:26	04/22/23 23:29	1
13C-OCDD	50		17 - 157	04/20/23 06:26	04/22/23 23:29	1
13C-OCDF	46		17 - 157	04/20/23 06:26	04/22/23 23:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	96		35 - 197	04/20/23 06:26	04/22/23 23:29	1

Lab Sample ID: LCS 320-668853/2-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 668853

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000185		ug/L		93	67 - 158		
2,3,7,8-TCDF			0.000200	0.000189		ug/L		95	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000830		ug/L		83	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000860		ug/L		86	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000888		ug/L		89	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000836		ug/L		84	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.000849		ug/L		85	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000844		ug/L		84	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000842		ug/L		84	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000841		ug/L		84	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000831		ug/L		83	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000824		ug/L		82	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000828		ug/L		83	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000830		ug/L		83	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000803		ug/L		80	78 - 138		
OCDD			0.00200	0.00159		ug/L		79	78 - 144		
OCDF			0.00200	0.00166		ug/L		83	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	71		20 - 175
13C-2,3,7,8-TCDF	82		22 - 152
13C-1,2,3,7,8-PeCDD	61		21 - 227
13C-1,2,3,7,8-PeCDF	67		21 - 192
13C-2,3,4,7,8-PeCDF	69		13 - 328
13C-1,2,3,4,7,8-HxCDD	57		21 - 193
13C-1,2,3,6,7,8-HxCDD	56		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-668853/2-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 668853

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	63		19 - 202
13C-1,2,3,6,7,8-HxCDF	61		21 - 159
13C-1,2,3,7,8,9-HxCDF	66		17 - 205
13C-2,3,4,6,7,8-HxCDF	66		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	57		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	56		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	63		20 - 186
13C-OCDD	71		13 - 199
13C-OCDF	69		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	108		31 - 191

Lab Sample ID: LCSD 320-668853/3-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 668853

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000245		ug/L		122	67 - 158	28	50
2,3,7,8-TCDF			0.000200	0.000286		ug/L		143	75 - 158	41	50
1,2,3,7,8-PeCDD			0.00100	0.000869		ug/L		87	70 - 142	5	50
1,2,3,7,8-PeCDF			0.00100	0.00109		ug/L		109	80 - 134	24	50
2,3,4,7,8-PeCDF			0.00100	0.00116		ug/L		116	68 - 160	27	50
1,2,3,4,7,8-HxCDD			0.00100	0.00110		ug/L		110	70 - 164	27	50
1,2,3,6,7,8-HxCDD			0.00100	0.00112		ug/L		112	76 - 134	28	50
1,2,3,7,8,9-HxCDD			0.00100	0.00109		ug/L		109	64 - 162	25	50
1,2,3,4,7,8-HxCDF			0.00100	0.00118		ug/L		118	72 - 134	33	50
1,2,3,6,7,8-HxCDF			0.00100	0.00115		ug/L		115	84 - 130	31	50
1,2,3,7,8,9-HxCDF			0.00100	0.00105		ug/L		105	78 - 130	23	50
2,3,4,6,7,8-HxCDF			0.00100	0.00104		ug/L		104	70 - 156	23	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00102		ug/L		102	70 - 140	21	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00102		ug/L		102	82 - 122	20	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00101		ug/L		101	78 - 138	23	50
OCDD			0.00200	0.00207		ug/L		104	78 - 144	26	50
OCDF			0.00200	0.00212		ug/L		106	63 - 170	25	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	61		20 - 175
13C-2,3,7,8-TCDF	100		22 - 152
13C-1,2,3,7,8-PeCDD	55		21 - 227
13C-1,2,3,7,8-PeCDF	65		21 - 192
13C-2,3,4,7,8-PeCDF	60		13 - 328
13C-1,2,3,4,7,8-HxCDD	69		21 - 193
13C-1,2,3,6,7,8-HxCDD	73		25 - 163
13C-1,2,3,4,7,8-HxCDF	98		19 - 202
13C-1,2,3,6,7,8-HxCDF	104		21 - 159
13C-1,2,3,7,8,9-HxCDF	111		17 - 205
13C-2,3,4,6,7,8-HxCDF	113		22 - 176

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-668853/3-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 668853

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	82		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	95		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	110		20 - 186
13C-OCDD	138		13 - 199
13C-OCDF	177		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	97		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-4

Specialty Organics

Prep Batch: 668853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	1613B	
MB 320-668853/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-668853/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-668853/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 669579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	1613B	668853
MB 320-668853/1-A	Method Blank	Total/NA	Water	1613B	668853

Analysis Batch: 670020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-668853/2-A	Lab Control Sample	Total/NA	Water	1613B	668853
LCSD 320-668853/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	668853

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-124222-6
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: EPBMC_20230323
Lab Sample ID: 570-132333-1
Date Collected: 03/23/23 11:10
Matrix: Water
Date Received: 03/23/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/9 A	Prep	1312B			1014.N mL	40.0 uL	338852	06/40/42 03:43	BLR	EET SAC
Total/9 A	Analysis	1312B		1	1 Sample	1 Sample	33N57N	06/42/42 08:1N	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA N5305, TEL (N13)272-5300

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124222-9

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-040	04-40-49
ANAB	Dept. of Defense ELAP	L4968	01-40-49
ANAB	Dept. of Energy	L4968.01	01-40-49
ANAB	ISO/IEC 17045	L4968	01-40-49
Arizona	State	AZ0708	08-11-42
Arkansas DE3	State	88-06Q1	06-17-42
California	State	48Q7	01-44-49
Colorado	State	CA0009	08-21-42
Florida	NELAP	E87570	06-20-42
Georgia	State	9090	01-4Q-49
Hawaii	State	<cert No.>	01-4Q-49
Illinois	NELAP	400060	02-17-49
Kansas	NELAP	E-10275	10-21-42
Louisiana	NELAP	01Q99	06-20-42
Louisiana (All)	NELAP	01Q99	06-20-42
Maine	State	CA00009	09-19-49
Michigan	State	QQ97	06-01-42
Ne*ada	State	CA00099	07-21-42
New Hav pshire	NELAP	4QQ7	09-18-49
New Jersey	NELAP	CA005	06-20-42
New mork	NELAP	11666	09-01-49
Ohio	State	91454	01-4Q-49
Oregon	NELAP	9090	01-4Q-49
TeYas	NELAP	T1097092QQ-1Q-12	05-21-42
US Fish & x ildlife	US Federal Prograv s	58998	09-20-42
USDA	US Federal Prograv s	P220-18-0042Q	04-48-46
Utah	NELAP	CA000994041-14	04-48-42 W
Virginia	NELAP	960478	02-19-49
x ashington	State	C581	05-05-42
x est Virginia (Dx)	State	QQ20C	14-21-42
x isconsin	State	QQ8409680	08-21-42
x yov ing	State Prograv	8TMS-L	01-48-1QW

WAccreditation/Certification renewal pending - accreditation/certification considered *alid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-4

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132333-1	EPBMC_20230323	Water	03/23/23 11:10	03/23/23 19:20

Loc: 570
132333

570-132333 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9808	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBMC_20230323	3/23/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230323-1	3/23/23	1110	TB	WM	3	N	N														x					

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #
Time of Readings 1110
DO (mg/L) 16.76
pH 8.52
Temp (°C/°F) 13.77°C
TRC (mg/L)
Checked by: MMD
Date/Time: 3/23/23 1300

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~ECI #570144595~~ ECI #570187 ECI #570144595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.:	
Relinquished by: Michelle Dallalah	Company: H&A	Date/Time: 3/23/23 1695	Received by: EC	Date/Time: 3/24/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.4/2.4 2.9/2.9 3.1/3.1 SCI

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/26/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12))(SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C)(E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540CE425.1)	Turbidity, TDS (SM2540CE180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodephnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	8-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBMC_20230323	3/23/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☑ Return to Client ☐ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ~~ECI #57014595~~ ECI # ~~5701[illegible]~~ = 57014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Receiv	EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	FE	Date/Time: 3/23/23 1920
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212491.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132333-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132333-3)	3/23/23	11:10 Pacific		Water			X				3	See Attached Instructions
												RUN PAST HT — VIR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-24-23 1447			3-24-23 14:47	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212452.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132333-1
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/6/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									-VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 9:48	EC		3/24/23 0948	ED
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212452

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212453.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132336-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X		See Attached Instructions
									RUN PAST HT
									— V Rende 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		3-24-23 9:48	EC		3/24/23 0948	EM
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212453

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212524.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-132333-4
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/13/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/24/23 15:00	EC		3/25/23-910	EETSAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132333-4

Login Number: 132333
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132333-4

Login Number: 132333
List Number: 2
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 03/25/23 10:43 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 6/8/2023 12:05:21 PM Revision 1

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132333-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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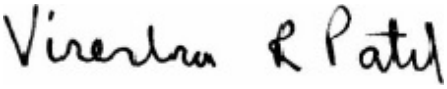
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132333-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132333-5

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 5/12/2023. The report (revision 1) is being revised due to: The clients office requested the full EPA 608.3 list to be reported..

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.9º C and 3.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods EPA 608 - Pesticides/PCBs - PP list, VOCs-2CVE only (E624), Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-5

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs-2CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132333-1	EPBMC_20230323	Water	03/23/23 11:10	03/23/23 19:20
570-132333-3	TB-20230323-2	Water	03/23/23 11:10	03/23/23 19:20

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders: 3C24117

Project: 570-132333-5

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 6/02/2023
Received Date: 3/24/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #: 570-132333-5
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/24/23 with the Chain-of-Custody document. The samples were received in good condition, at 2.4 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: EPBMC_20230323 (570-132333-1) — Sampled: 03/23/23 11:10 by Client

3C24117-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C2585 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/30/23 07:54				**Analyst:** RJG
4,4´-DDD	ND	0.0027	0.050	ug/l	1	04/20/23	
4,4´-DDE	ND	0.0018	0.050	ug/l	1	04/20/23	BS-04
4,4´-DDT	ND	0.0028	0.050	ug/l	1	04/20/23	
Aldrin	ND	0.0010	0.050	ug/l	1	04/20/23	
alpha-BHC	ND	0.0011	0.050	ug/l	1	04/20/23	
Aroclor 1016	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1221	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1232	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1242	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1248	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1254	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1260	ND	0.50	1.0	ug/l	1	04/20/23	
beta-BHC	ND	0.0015	0.050	ug/l	1	04/20/23	
Chlordane (tech)	ND	0.10	0.50	ug/l	1	04/20/23	
delta-BHC	ND	0.0019	0.050	ug/l	1	04/20/23	
Dieldrin	ND	0.0017	0.050	ug/l	1	04/20/23	
Endosulfan I	ND	0.0019	0.050	ug/l	1	04/20/23	
Endosulfan II	ND	0.0019	0.050	ug/l	1	04/20/23	
Endosulfan sulfate	ND	0.0013	0.050	ug/l	1	04/20/23	
Endrin	ND	0.0017	0.050	ug/l	1	04/20/23	

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www.wecklabs.com

Sample Results

(Continued)

Sample: EPBMC_20230323 (570-132333-1)
3C24117-01 (Water)

Sampled: 03/23/23 11:10 by Client
(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C2585 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/30/23 07:54				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.050	ug/l	1	04/20/23	
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l	1	04/20/23	
Heptachlor	ND	0.0023	0.050	ug/l	1	04/20/23	
Heptachlor epoxide	ND	0.0018	0.050	ug/l	1	04/20/23	
Methoxychlor	ND	0.0038	0.050	ug/l	1	04/20/23	BS-04
Toxaphene	ND	1.0	2.0	ug/l	1	04/20/23	
Surrogate(s)							
Decachlorobiphenyl	*81%*		*33-133*	*Conc: 0.0827*		*04/20/23*	
Tetrachloro-meta-xylene	*69%*		*32-130*	*Conc: 0.0702*		*04/20/23*	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2585-BLK1)					**Prepared: 03/30/23 Analyzed: 04/20/23**						
4,4´-DDD	ND	0.0027	0.050	ug/l							
4,4´-DDE	ND	0.0018	0.050	ug/l							
4,4´-DDT	ND	0.0028	0.050	ug/l							
Aldrin	ND	0.0010	0.050	ug/l							
alpha-BHC	ND	0.0011	0.050	ug/l							
Aroclor 1016	ND	0.029	1.0	ug/l							
Aroclor 1221	ND	0.060	1.0	ug/l							
Aroclor 1232	ND	0.083	1.0	ug/l							
Aroclor 1242	ND	0.095	1.0	ug/l							
Aroclor 1248	ND	0.083	1.0	ug/l							
Aroclor 1254	ND	0.040	1.0	ug/l							
Aroclor 1260	ND	0.055	1.0	ug/l							
beta-BHC	ND	0.0015	0.050	ug/l							
Chlordane (tech)	ND	0.043	0.50	ug/l							
delta-BHC	ND	0.0019	0.050	ug/l							
Dieldrin	ND	0.0017	0.050	ug/l							
Endosulfan I	ND	0.0019	0.050	ug/l							
Endosulfan II	ND	0.0019	0.050	ug/l							
Endosulfan sulfate	ND	0.0013	0.050	ug/l							
Endrin	ND	0.0017	0.050	ug/l							
Endrin aldehyde	ND	0.0019	0.050	ug/l							
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l							
Heptachlor	ND	0.0023	0.050	ug/l							
Heptachlor epoxide	ND	0.0018	0.050	ug/l							
Methoxychlor	ND	0.0038	0.050	ug/l							
Toxaphene	ND	0.085	2.0	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.109*			*ug/l*	*0.100*		*109*	*33-133*			
Tetrachloro-meta-xylene	*0.0687*			*ug/l*	*0.100*		*69*	*32-130*			
LCS (W3C2585-BS1)					**Prepared: 03/30/23 Analyzed: 04/20/23**						
4,4´-DDD	0.177	0.0027	0.050	ug/l	0.200		88	48-130			
4,4´-DDE	0.154	0.0018	0.050	ug/l	0.200		77	54-130			
4,4´-DDT	0.167	0.0028	0.050	ug/l	0.200		84	46-137			
Aldrin	0.164	0.0010	0.050	ug/l	0.200		82	54-130			
alpha-BHC	0.188	0.0011	0.050	ug/l	0.200		94	49-130			
beta-BHC	0.166	0.0015	0.050	ug/l	0.200		83	39-130			
delta-BHC	0.174	0.0019	0.050	ug/l	0.200		87	51-130			
Dieldrin	0.153	0.0017	0.050	ug/l	0.200		76	58-130			
Endosulfan I	0.186	0.0019	0.050	ug/l	0.200		93	57-141			
Endosulfan II	0.165	0.0019	0.050	ug/l	0.200		82	22-171			
Endosulfan sulfate	0.148	0.0013	0.050	ug/l	0.200		74	38-132			
Endrin	0.180	0.0017	0.050	ug/l	0.200		90	51-130			
Endrin aldehyde	0.157	0.0019	0.050	ug/l	0.200		79	18-130			

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Quality Control Results

(Continued)

Chlorinated Pesticides and/or PCBs by GC/ECD (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
LCS (W3C2585-BS1)					**Prepared: 03/30/23**	**Analyzed: 04/20/23**					
gamma-BHC (Lindane)	0.159	0.0015	0.050	ug/l	0.200		79	43-130			
Heptachlor	0.159	0.0023	0.050	ug/l	0.200		79	43-130			
Heptachlor epoxide	0.184	0.0018	0.050	ug/l	0.200		92	57-132			
Methoxychlor	0.145	0.0038	0.050	ug/l	0.200		73	50-130			
Surrogate(s)											
Decachlorobiphenyl	*0.109*			*ug/l*	*0.100*		*109*	*33-133*			
Tetrachloro-meta-xylene	*0.0731*			*ug/l*	*0.100*		*73*	*32-130*			
LCS Dup (W3C2585-BSD1)					**Prepared: 03/30/23**	**Analyzed: 04/20/23**					
4,4´-DDD	0.144	0.0027	0.050	ug/l	0.200		72	48-130	20	30	
4,4´-DDE	0.0929	0.0018	0.050	ug/l	0.200		46	54-130	49	30	BS-04
4,4´-DDT	0.128	0.0028	0.050	ug/l	0.200		64	46-137	27	30	
Aldrin	0.115	0.0010	0.050	ug/l	0.200		58	54-130	35	30	Q-12
alpha-BHC	0.119	0.0011	0.050	ug/l	0.200		60	49-130	44	30	Q-12
beta-BHC	0.119	0.0015	0.050	ug/l	0.200		60	39-130	33	30	Q-12
delta-BHC	0.151	0.0019	0.050	ug/l	0.200		75	51-130	14	30	Q-12
Dieldrin	0.123	0.0017	0.050	ug/l	0.200		61	58-130	22	30	
Endosulfan I	0.136	0.0019	0.050	ug/l	0.200		68	57-141	31	30	Q-12
Endosulfan II	0.136	0.0019	0.050	ug/l	0.200		68	22-171	19	30	
Endosulfan sulfate	0.126	0.0013	0.050	ug/l	0.200		63	38-132	16	30	
Endrin	0.121	0.0017	0.050	ug/l	0.200		61	51-130	39	30	Q-12
Endrin aldehyde	0.102	0.0019	0.050	ug/l	0.200		51	18-130	43	30	Q-12
gamma-BHC (Lindane)	0.125	0.0015	0.050	ug/l	0.200		63	43-130	23	30	
Heptachlor	0.128	0.0023	0.050	ug/l	0.200		64	43-130	21	30	
Heptachlor epoxide	0.145	0.0018	0.050	ug/l	0.200		72	57-132	24	30	
Methoxychlor	0.0916	0.0038	0.050	ug/l	0.200		46	50-130	45	30	BS-04
Surrogate(s)											
Decachlorobiphenyl	*0.102*			*ug/l*	*0.100*		*102*	*33-133*			
Tetrachloro-meta-xylene	*0.0662*			*ug/l*	*0.100*		*66*	*32-130*			

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

Notes and Definitions

Item	Definition
BS-04	The recovery of this analyte in LCS or LCSD was outside control limit. Sample was accepted based on the remaining LCS, LCSD or LCS-LL.
Q-12	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on the percent recoveries and/or other acceptable QC data.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

3C24117

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212491.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132333-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132333-3)	3/23/23	11:10 Pacific		Water			X				3	See Attached Instructions
												RUN PAST HT — VIR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 14:47	CC		3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

2.4°C T-0279

Ver: 06/08/2021

ICOC No:
570-212493

Containers

Count	Container Type	Preservative
5	Amber Glass 1 liter - unpreserved	None
6	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (EPA 608 - Pesticides/PCBs - PP list)	Level IV package, MDL, EQUIS 5C
1	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	525.2- 24 hour extraction for Diaznon and Chyloriphrous- level IV package needed.
1	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV package, MDL, EQUIS 5C
1, 3	SUBCONTRACT	SUB (VOCs-2CVE only (E624))	Level IV package, MDL, EQUIS 5C

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: **3C24117**
WKO Logged by: Jerico Bolotano
Samples Checked by: Jerico Bolotano

Date/Time Received: 03/24/23 @ 14:47
# of Samples: 02
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
		☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	2.4°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	Wet			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
		☐	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot# 2071882
	Free Chlorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot# 061221E
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
					pH Reading:
	pH adjusted for O&G	☐	☐	☐	Acid Lot#
					Amt added:
	Project Manager notified?	☐	☐	☐	

PM Comments

Sample Receipt Checklist Prepared by:

Signature: JB Date: 03/24/23

570-132333 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9808	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBMC_20230323	3/23/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230323-1	3/23/23	1110	TB	WM	3	N	N														x					Time of Readings 1110
																										DO (mg/L) 16.76
																										pH 8.52
																										Temp (°C/°F) 13.77°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 3/23/23 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Sample Disposal

Special Instructions/QC Requirements & Comments: ~~ECI #570144595~~ ECI #5703187 ECI#570144595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.:	
Relinquished by: Michelle Dallalah	Company: H&A	Date/Time: 3/23/23 1695	Received by: EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.4/2.4 2.9/2.9 3.1/3.1 SCI

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12))(SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C)(E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540CE425.1)	Turbidity, TDS (SM2540CE180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodephnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	8-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBMC_20230323	3/23/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~ECI #567014595~~ ECI # ~~5901[illegible]~~ = S7014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Receiv	EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	FE	Date/Time: 3/23/23 1920
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212491.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132333-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132333-3)	3/23/23	11:10 Pacific		Water			X				3	See Attached Instructions
												RUN PAST HT — VIR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 1447			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212452.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132333-1
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/6/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									-VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-24-23 9:48	EC		3/24/23 0948	ED
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212452

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212453.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132336-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X		See Attached Instructions
									RUN PAST HT
									– V Rende 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		3-24-23 9:48	EC		3/24/23 0948	EM
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212453

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132333-5

Login Number: 132333
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132333-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

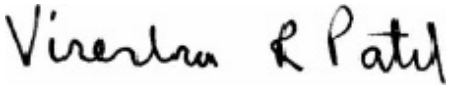
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-6

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132333-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132333-6

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.9º C and 3.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-6

Client Sample ID: EPBMC_20230323 **Lab Sample ID: 570-132333-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132333-1	EPBMC_20230323	Water	03/23/23 11:10	03/23/23 19:20

aquatic bioassay & consulting laboratories, inc

April 6, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	EPBMC_20230323
DATE RECEIVED:	23 March - 2023
ABC LAB. NO.:	CSE0323.237

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = -21.02 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Report Date: 06 Apr-23 12:49 (p 1 of 1)
Test Code/ID: CSE0323.237 / 04-8807-3882

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	06-6570-3834	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	23 Mar-23 15:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	30 Mar-23 15:02	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	06-1651-5076	Code:	CSE0323.237	Project:	
Sample Date:	23 Mar-23 11:10	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	23 Mar-23 14:05	CAS (PC):		Station:	EPBMC_20230323
Sample Age:	4h (6.5 °C)	Client:	Eurofins Calscience		

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
10-5430-1377	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
20-8780-9703	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
10-5430-1377	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
20-8780-9703	Reproduction	Control Resp	21.65	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	21.65	18.63	24.67	0	29	1.444	6.459	29.83%	0.00%
100		20	26.2	23.57	28.83	13	35	1.258	5.625	21.47%	-21.02%

7d Survival Rate Detail — MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail — MD5: 1AD6BE52F2C3F576733FF2DDBC0B695B

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	21	22	24	15	14	27	0	25	21
		21	22	18	29	23	23	27	28	27	22
100		20	31	32	27	28	27	35	26	26	27
		25	22	16	13	30	27	33	28	31	20

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-8780-9703	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	06 Apr-23 12:47	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	04 Apr-23 12:51	**MD5 Hash:**	1AD6BE52F2C3F576733FF2DDBC0B695B	**Editor ID:**	009-702-627-3
Batch ID:	06-6570-3834	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	23 Mar-23 15:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	30 Mar-23 15:02	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	06-1651-5076	**Code:**	CSE0323.237	**Project:**	
Sample Date:	23 Mar-23 11:10	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	23 Mar-23 14:05	**CAS (PC):**		**Station:**	EPBMC_20230323
Sample Age:	4h (6.5 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	37	6.002	0.8514	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	21.65	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	207.025	207.025	1	5.644	0.0227	Significant Effect
Error	1393.75	36.6776	38			
Total	1600.77		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	1.35E-05	7.353	0.9971	Equal Variances
	Mod Levene Equality of Variance Test	0.001229	7.353	0.9722	Equal Variances
	Variance Ratio F Test	1.318	3.432	0.5529	Equal Variances
Distribution	Anderson-Darling A2 Test	1.461	3.878	0.0003	Non-Normal Distribution
	D'Agostino Kurtosis Test	2.777	2.576	0.0055	Non-Normal Distribution
	D'Agostino Skewness Test	3.52	2.576	0.0004	Non-Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	20.1	9.21	4.3E-05	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.2067	0.1617	0.0002	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.8824	0.9236	0.0006	Non-Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	21.65	18.63	24.67	22.4	0	29	1.444	29.83%	0.00%
100		20	26.2	23.57	28.83	27	13	35	1.258	21.47%	-21.02%

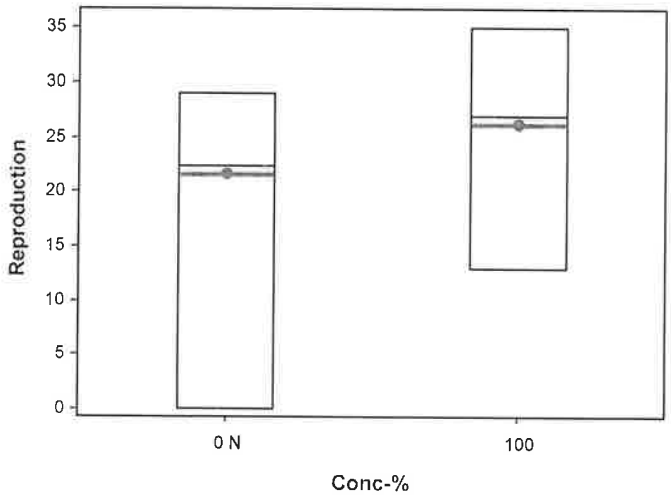
Reproduction Detail

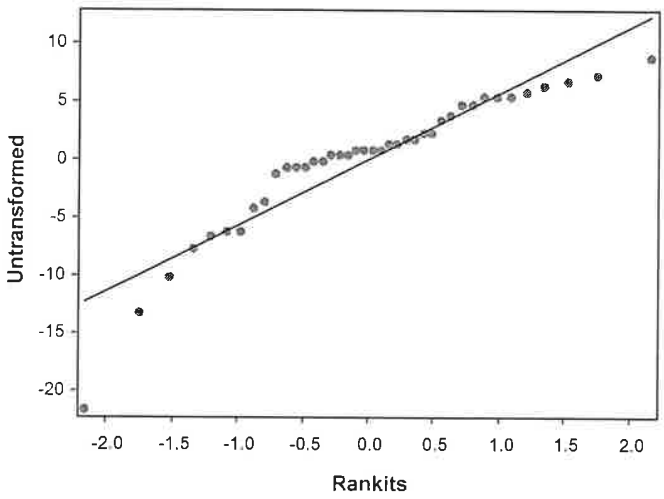
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	21	22	24	15	14	27	0	25	21
		21	22	18	29	23	23	27	28	27	22
100		20	31	32	27	28	27	35	26	26	27
		25	22	16	13	30	27	33	28	31	20

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	20-8780-9703	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	06 Apr-23 12:47	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	04 Apr-23 12:51	**MD5 Hash:**	1AD6BE52F2C3F576733FF2DDBC0B695B	**Editor ID:**	009-702-627-3

Graphics





CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	10-5430-1377	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	06 Apr-23 12:47	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	04 Apr-23 12:51	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	009-702-627-3
Batch ID:	06-6570-3834	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	23 Mar-23 15:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	30 Mar-23 15:02	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	06-1651-5076	**Code:**	CSE0323.237	**Project:**	
Sample Date:	23 Mar-23 11:10	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	23 Mar-23 14:05	**CAS (PC):**		**Station:**	EPBMC_20230323
Sample Age:	4h (6.5 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

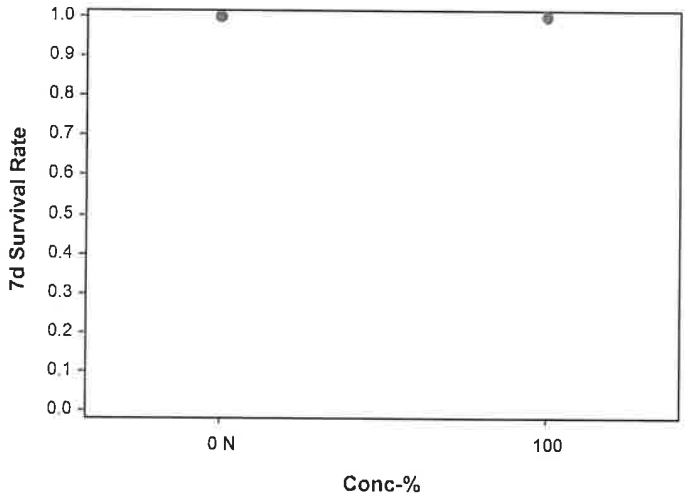
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analysis ID:	10-5430-1377	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	06 Apr-23 12:47	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	04 Apr-23 12:51	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	009-702-627-3

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	06-6570-3834	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**		
Start Date:	23 Mar-23 15:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	30 Mar-23 15:02	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24
Sample ID:	06-1651-5076	**Code:**	CSE0323.237	**Project:**		
Sample Date:	23 Mar-23 11:10	**Material:**	Sample Water	**Source:**	Bioassay Report	
Receipt Date:	23 Mar-23 14:05	**CAS (PC):**		**Station:**	EPBMC_20230323	
Sample Age:	4h (6.5 °C)	**Client:**	Eurofins Calscience			

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60	60	60	60	60	0	0	0.00%	0
100		8	236	236	236	236	236	0	0	0.00%	0
Overall		16	148	99.57	196.4	60	236	22.72	90.89	61.41%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	376.5	372.8	380.2	370	383	0.555	4.44	1.18%	0
100		8	1576	1569	1582	1564	1586	1.037	8.298	0.53%	0
Overall		16	976	646.1	1306	370	1586	154.8	619.2	63.44%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.838	7.535	8.14	7	8.2	0.04529	0.3623	4.62%	0
100		8	7.838	7.503	8.172	6.9	8.2	0.04997	0.3998	5.10%	0
Overall		16	7.838	7.641	8.034	6.9	8.2	0.09214	0.3686	4.70%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
100		8	462	462	462	462	462	0	0	0.00%	0
Overall		16	271	165.9	376.1	80	462	49.32	197.3	72.79%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8.038	7.994	8.081	8	8.1	0.00647	0.05176	0.64%	0
100		8	7.975	7.936	8.014	7.9	8	0.005786	0.04629	0.58%	0
Overall		16	8.006	7.976	8.037	7.9	8.1	0.01434	0.05737	0.72%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24.03	23.97	24.08	24	24.2	0.008836	0.07069	0.29%	0
Overall		16	24.01	23.99	24.04	24	24.2	0.0125	0.05	0.21%	0 (0%)

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 6494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

4/12/2023

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: ★Hand delivered by H&A	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time		★ Email this copy of the COC	Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E160.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA *	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethylhydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
-237 EPBMC_20230323	3/23/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Temp. deg. C = 6.5 °C
MBAS correction factor = +0.2
Chlorine (mg/L) = <0.1
NH3 (mg/L) = <0.1

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Dispose By Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dallolah	Company: H&A 1405	Date/Time: 3/23/23	Receiv Dipaker Naik	Date/Time: 3-23-23 1405	
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:	
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:	

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2018

SAP COC 2019/2020 VERSION 3

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 21 March - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 18.33 ug/l
EC50 = 26.67 ug/l

ENDPOINT: REPRODUCTION

NOEC = 5.00 ug/l

IC25 = 6.63 ug/l
IC50 = 8.45 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 06 Apr-23 12:26 (p 1 of 2)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
14-9937-9653	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test		10	30	17.32	---	1
02-6188-0498	Reproduction	Steel Many-One Rank Sum Test	✓	5	10	7.071	12.9%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
05-0363-9181	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	15	13.33	20	1
				EC20	16.67	14.44	23.33	
				EC25	18.33	15.56	26.67	
				EC40	23.33	18.89	34	
				EC50	26.67	21.11	37.5	
08-0930-0440	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	5.896	5.417	6.089	1
			✓	IC20	6.261	5.815	6.452	
			✓	IC25	6.626	6.225	6.819	
			✓	IC40	7.722	7.388	7.929	
			✓	IC50	8.452	8.156	8.664	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
05-0363-9181	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
14-9937-9653	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
02-6188-0498	Reproduction	Control Resp	25.7	15	<<	Yes	Passes Criteria
08-0930-0440	Reproduction	Control Resp	25.7	15	<<	Yes	Passes Criteria
02-6188-0498	Reproduction	PMSD	0.1292	0.13	0.47	Yes	Below Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.4000	0.0306	0.7694	0.0000	1.0000	0.1633	0.5164	129.10%	60.00%
50		10	0.1000	-0.1262	0.3262	0.0000	1.0000	0.1000	0.3162	316.23%	90.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	25.7	23.85	27.55	21	30	0.8172	2.584	10.06%	0.00%
3		10	23.9	22.49	25.31	20	27	0.6227	1.969	8.24%	7.00%
5		10	26.1	24.47	27.73	22	31	0.7219	2.283	8.75%	-1.56%
10		10	7.4	6.175	8.625	5	11	0.5416	1.713	23.14%	71.21%
30		10	3.2	-0.3656	6.766	0	15	1.576	4.984	155.76%	87.55%
50		10	1.4	-1.767	4.567	0	14	1.4	4.427	316.23%	94.55%

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail MD5: F4B702ADEF230AEDBE9418B3CD886DE2

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail MD5: 983E619D3592AAD83E9946B3BFA7BC58

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Report Date: 06 Apr-23 12:25 (p 1 of 2)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	02-6188-0498	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	Nonparametric-Control vs Treatments	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	983E619D3592AAD83E9946B3BFA7BC58	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	5	10	7.071	---	3.321	12.92%

Steel Many-One Rank Sum Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	82.5	75	4	CDF	0.1507	Non-Significant Effect
		5	18	112	75	2	CDF	0.9455	Non-Significant Effect
		10*	18	55	75	0	CDF	0.0004	Significant Effect
		30*	18	55	75	0	CDF	0.0004	Significant Effect
		50*	18	55	75	0	CDF	0.0004	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	25.7	15	<<	Yes	Passes Criteria
PMSD	0.1292	0.13	0.47	Yes	Below Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	6979.88	1395.98	5	132.6	<1.0E-05	Significant Effect
Error	568.3	10.5241	54			
Total	7548.18		59			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	16.85	15.09	0.0048	Unequal Variances
	Levene Equality of Variance Test	1.972	3.377	0.0977	Equal Variances
	Mod Levene Equality of Variance Test	0.6306	3.377	0.6771	Equal Variances
Distribution	Anderson-Darling A2 Test	2.812	3.878	<1.0E-05	Non-Normal Distribution
	D'Agostino Kurtosis Test	4.038	2.576	5.4E-05	Non-Normal Distribution
	D'Agostino Skewness Test	5.011	2.576	<1.0E-05	Non-Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	41.42	9.21	<1.0E-05	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.1629	0.1331	0.0004	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.818	0.9459	<1.0E-05	Non-Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	25.7	23.85	27.55	25.5	21	30	0.8172	10.06%	0.00%
3		10	23.9	22.49	25.31	23.2	20	27	0.6227	8.24%	7.00%
5		10	26.1	24.47	27.73	26	22	31	0.7219	8.75%	-1.56%
10		10	7.4	6.175	8.625	7	5	11	0.5416	23.14%	71.21%
30		10	3.2	-0.3656	6.766	0	0	15	1.576	155.76%	87.55%
50		10	1.4	-1.767	4.567	0	0	14	1.4	316.23%	94.55%

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	02-6188-0498	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	983E619D3592AAD83E9946B3BFA7BC58	**Editor ID:**	009-702-627-3

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

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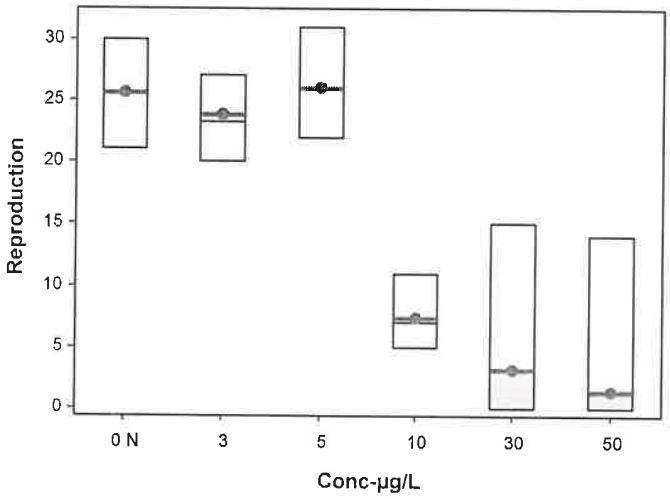

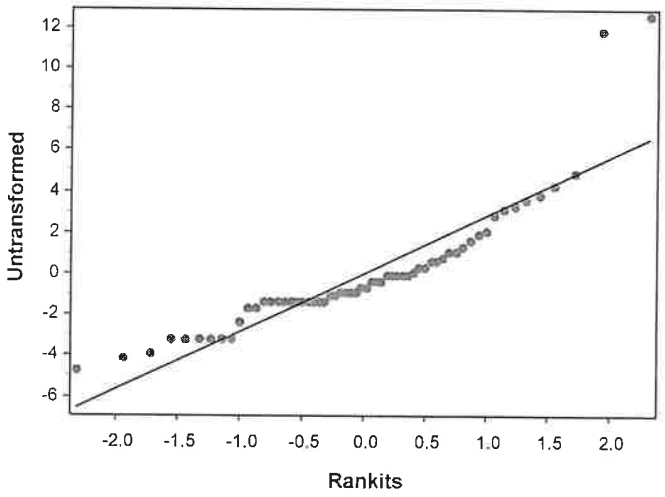

CETIS Analytical Report

Report Date: 06 Apr-23 12:26 (p 1 of 4)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-0363-9181	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	F4B702ADEF230AEDBE9418B3CD886DE	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	15	13.33	20
EC20	16.67	14.44	23.33
EC25	18.33	15.56	26.67
EC40	23.33	18.89	34
EC50	26.67	21.11	37.5

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣA/ΣB	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.4000	0.0000	0.0000	1.0000	129.10%	60.00%	4/10	0.4000	60.00%
50		10	0.1000	0.0000	0.0000	1.0000	316.23%	90.00%	1/10	0.1000	90.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-0363-9181	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	F4B702ADEF230AEDBE9418B3CD886DE	**Editor ID:**	009-702-627-3

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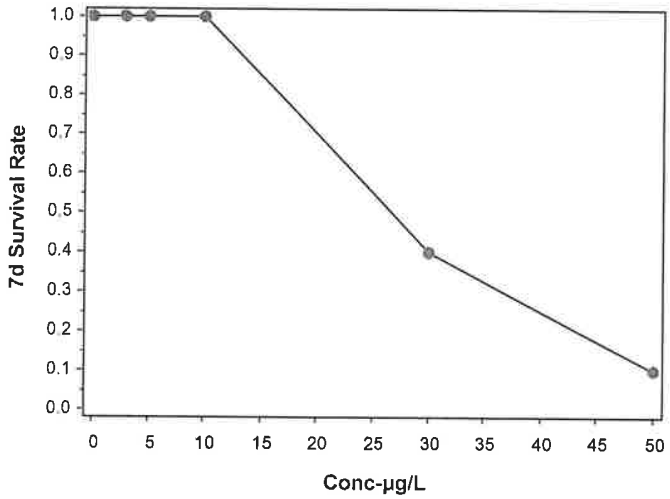


Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	08-0930-0440	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	983E619D3592AAD83E9946B3BFA7BC58	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	49588	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	25.7	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	5.896	5.417	6.089
IC20	6.261	5.815	6.452
IC25	6.626	6.225	6.819
IC40	7.722	7.388	7.929
IC50	8.452	8.156	8.664

Reproduction Summary

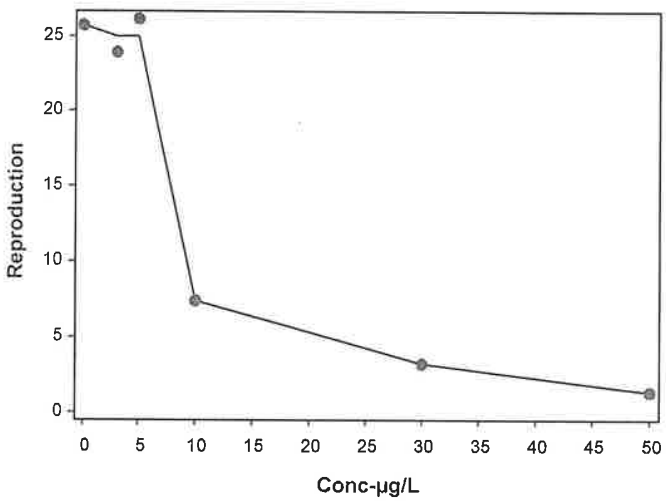
			Calculated Variate						Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	Mean	%Effect
0	N	10	25.7	25.5	21	30	10.06%	0.00%	25.7	0.00%
3		10	23.9	23.2	20	27	8.24%	7.00%	25	2.72%
5		10	26.1	26	22	31	8.75%	-1.56%	25	2.72%
10		10	7.4	7	5	11	23.14%	71.21%	7.4	71.21%
30		10	3.2	0	0	15	155.76%	87.55%	3.2	87.55%
50		10	1.4	0	0	14	316.23%	94.55%	1.4	94.55%

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

Analysis ID:	08-0930-0440	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	983E619D3592AAD83E9946B3BFA7BC58	**Editor ID:**	009-702-627-3

Graphics



CETIS Analytical Report

Report Date: 06 Apr-23 12:26 (p 1 of 2)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	14-9937-9653	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	F4B702ADEF230AEDBE9418B3CD886DE	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0054	Exact	0.0217	Significant Effect
		50*	0.0001	Exact	0.0003	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		4	6	10	0.4000	0.6000	60.00%
50		1	9	10	0.1000	0.9000	90.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.4000	0.0306	0.7694	0.0000	0.0000	1.0000	0.1633	129.10%	60.00%
50		10	0.1000	0.0000	0.3262	0.0000	0.0000	1.0000	0.1000	316.23%	90.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

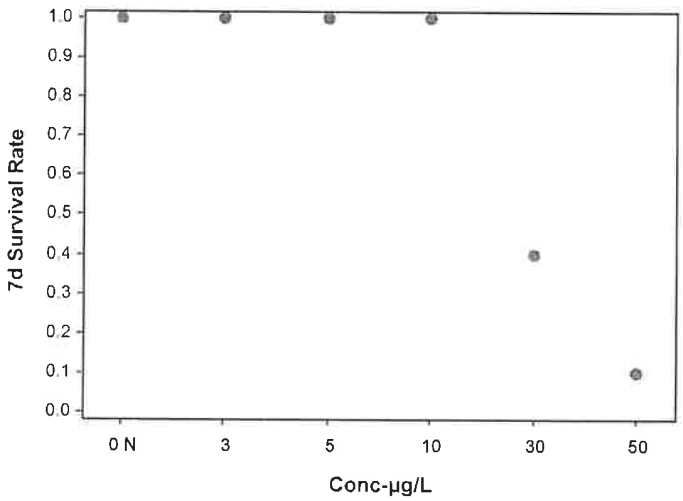
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	14-9937-9653	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	F4B702ADEF230AEDBE9418B3CD886DE	**Editor ID:**	009-702-627-3

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	13-3375-5897	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	21 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	28 Mar-23 14:05	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	03-4411-3507	**Code:**	CER032123	**Project:**	REF TOX
Sample Date:	21 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	61.25	59.31	63.19	60	65	0.2893	2.315	3.78%	0
50		8	60	60	60	60	60	0	0	0.00%	0
Overall		16	60.62	59.71	61.54	60	65	0.427	1.708	2.82%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	376.2	371	381.5	370	387	0.7785	6.228	1.66%	0
3		8	369.2	368.7	369.8	368	370	0.08839	0.7071	0.19%	0
5		8	375.1	366.4	383.9	369	394	1.312	10.49	2.80%	0
10		8	374.5	366.5	382.5	367	390	1.203	9.621	2.57%	0
30		8	375.2	367.3	383.2	367	391	1.191	9.528	2.54%	0
50		8	375.6	367.7	383.6	365	391	1.191	9.531	2.54%	0
Overall		48	374.3	371.9	376.7	365	394	1.196	8.286	2.21%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.825	7.529	8.121	7	8.2	0.04419	0.3536	4.52%	0
3		8	7.763	7.491	8.034	7	8.1	0.04061	0.3249	4.19%	0
5		8	7.725	7.469	7.981	7	8	0.03824	0.3059	3.96%	0
10		8	7.688	7.449	7.926	7	7.9	0.03563	0.285	3.71%	0
30		8	7.688	7.445	7.93	7	7.9	0.03625	0.29	3.77%	0
50		8	7.688	7.445	7.93	7	7.9	0.03625	0.29	3.77%	0
Overall		48	7.729	7.643	7.815	7	8.2	0.04283	0.2968	3.84%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
50		8	99	99	99	99	99	0	0	0.00%	0
Overall		16	89.5	84.27	94.73	80	99	2.453	9.812	10.96%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.975	7.901	8.049	7.8	8.1	0.01108	0.08864	1.11%	0
3		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
5		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
10		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
30		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
50		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
Overall		48	7.985	7.966	8.004	7.8	8.1	0.009411	0.0652	0.82%	0 (0%)

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		8	24	24	24	24	24	0	0	0.00%	0
50		8	24	24	24	24	24	0	0	0.00%	0
Overall		48	24	24	24	24	24	0	0	0.00%	0 (0%)

570-132333 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9808	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBMC_20230323	3/23/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230323-1	3/23/23	1110	TB	WM	3	N	N														x					Time of Readings 1110
																										DO (mg/L) 16.76
																										pH 8.52
																										Temp (°C/°F) 13.77°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 3/23/23 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Sample Disposal

Special Instructions/QC Requirements & Comments: ~~ECI #570144595~~ ECI #5703187 ECI #570144595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by: Michelle Dallalah	Company: H&A	Date/Time: 3/23/23 1695	Received by: EC Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: IEC Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Date/Time:

2.4/2.4 2.9/2.9 3.1/3.1 SCI

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12))(SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C)(E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540CE425.1)	Turbidity, TDS (SM2540CE180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodephnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	8-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBMC_20230323	3/23/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☑ Return to Client ☐ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ~~ECI #576048~~ ECI # ~~576048~~ 57014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Receiv	EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	FE	Date/Time: 3/23/23 1920
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212491.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132333-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132333-3)	3/23/23	11:10 Pacific		Water			X				3	See Attached Instructions
												RUN PAST HT — VIR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-24-23 1447			3-24-23 14:47	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212452.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132333-1
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/6/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									-VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 9:48	EC		3/24/23 0948	ED
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212452

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212453.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132336-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X		See Attached Instructions
									RUN PAST HT
									– V RENDR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		3-24-23 9:48	EC		3/24/23 0948	EM
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212453

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132333-6

Login Number: 132333
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 9:03:11 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132333-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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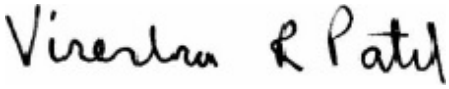
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-7

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132333-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132333-7

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.9º C and 3.1º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2 - "Wastewater" matrix: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-7

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132333-1	EPBMC_20230323	Water	03/23/23 11:10	03/23/23 19:20

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322307963
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/28/2023
Analyzed: 04/09/2023

Proj: 570-212694.1 | 570-132333-7 | Boeing SSFL ISRA and BMP | 57014595

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS					
						Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
								MFL (million fibers per liter)		
EPBMC_20230323 (570-132333-1) 322307963-0001	3/29/2023 03:00 PM	0.10	1288	0.2540	≥ 0.5 µm	None Detected	ND	51.00	<51.00	0.00 - 190.00
					> 10 µm only	None Detected	ND	51.00	<51.00	0.00 - 190.00

Collection Date/Time: *03/23/2023 11:10 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Sherrie Ahmad (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 04/10/2023 12:52:58

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

#322307963 Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212694.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132333-7
Address: 520 Mission Street,	Due Date Requested: 4/6/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by:	Date: Time: Method of Shipment:

	Date/Time	Company	Received by	Date/Time	Company
Relinquished by:	03/27/23 6:47	E2	Annette MCKISSACK	03/28/23 935	UA Testing
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 3.4°C

Ver: 06/08/2021

OrderID: 322307963

4/12/2023

ICOC No:
570-212694

#322307963

OrderID: 322307963

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Level IV package needed. Screen as Wastewater matrix

Loc: 570
132333

570-132333 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc..

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-9808	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBMC_20230323	3/23/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230323-1	3/23/23	1110	TB	WM	3	N	N														x					Time of Readings 1110
																										DO (mg/L) 16.76
																										pH 8.52
																										Temp (°C/°F) 13.77°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 3/23/23 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Sample Disposal

Special Instructions/QC Requirements & Comments: ~~ECI #570144595~~ ECI #5703187 ECI#570144595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by: Michelle Dallalah	Company: H&A	Date/Time: 3/23/23 1695	Received by: EC 3/23/23 Date/Time: 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: IEC Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by: Date/Time:

2.4/2.4 2.9/2.9 3.1/3.1 Soil

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/12/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12))(SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C)(E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540CE425.1)	Turbidity, TDS (SM2540CE180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodephnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	8-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBMC_20230323	3/23/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1110	TB	WM	3 1	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☑ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ~~ECI #57014595~~ ECI # ~~57014595~~ 57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes | Custody Seal No.:

	Company	Date/Time		Company	Date/Time
Relinquished by: Michelle Dallalah	H+A	3/23/23 1600	Received:	EC	3/23/23 1600
Relinquished by:	EC	3/23/23 1920	Received:	FE	3/23/23 1920
Relinquished by:			Received:		

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212491.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132333-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	X	X	X		8	See Attached Instructions
TB-20230323-2 (570-132333-3)	3/23/23	11:10 Pacific		Water			X					3	See Attached Instructions
													RUN PAST HT — VIR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 1447			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212452.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132333-1
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/6/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									-VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 9:48	EC		3/24/23 0948	ED
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212452

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212453.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132336-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X		See Attached Instructions
									RUN PAST HT
									– V Rende 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		3-24-23 9:48	EC		3/24/23 0948	EM
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212453

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132333-7

Login Number: 132333
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132333-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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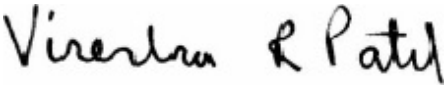
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-132333-8
Project/Site: Boeing SSFL ISRA and BMP

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132333-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132333-8

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.9º C and 3.1º C.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 608211
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: EPBMC_20230323 (570-132333-1), (280-174421-A-2-B) and (280-174421-A-2-E DU). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 608211
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230323 (570-132333-1), (LCS 160-608211/2-A), (LCSB 160-608211/3-A), (MB 160-608211/1-A), (280-174421-A-2-B), (280-174421-A-2-E DU), (280-174421-A-2-C MS) and (280-174421-A-2-D MSBT)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Job ID: 570-132333-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

EPBMC_20230323 (570-132333-1), (570-131073-AT-1-B) and (570-131073-AT-1-C DU)

Method 901.1: Gamma Prep Batch 160-605774
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBMC_20230323 (570-132333-1), (570-132015-K-1-D) and (570-132015-K-1-E DU)

Methods 903.0, 9315: Radium-226 batch 606156
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230323 (570-132333-1), (LCS 160-606156/2-A), (MB 160-606156/1-A), (660-128024-E-1-A) and (660-128024-D-1-A DU)

Methods 904.0, 9320: Radium-228 batch 606165
The LCS recovered at (128%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-606165/2-A)

Method 904.0: Radium-228 batch 606165
The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences: EPBMC_20230323 (570-132333-1). Analytical results are reported with the detection limit achieved.

Methods 904.0, 9320: Radium-228 batch 606165
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is

Job ID: 570-132333-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230323 (570-132333-1), (LCS 160-606165/2-A), (MB 160-606165/1-A), (660-128024-E-1-B) and (660-128024-D-1-B DU)

Method 905: Strontium-90 batch 606565
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230323 (570-132333-1), (LCS 160-606565/2-A), (LCSD 160-606565/3-A) and (MB 160-606565/1-A)

Method 905: Strontium-90 batch 607355
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230323 (570-132333-1), (LCS 160-607355/2-A), (MB 160-607355/1-A), (280-174032-D-4-A) and (280-174032-C-4-A DU)

Method 906.0: Tritium 607890
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are decay corrected to sample date and time as the Activity Reference Date. EPBMC_20230323 (570-132333-1), (LCS 160-607890/2-A), (MB 160-607890/1-A), (570-131938-I-1-A), (570-131938-I-1-B DU), (570-132136-Q-1-A) and (570-132136-Q-1-B MS)

Method A-01-R: Isotopic Uranium batch 608221
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230323 (570-132333-1), (LCS 160-608221/2-A), (MB 160-608221/1-A) and (570-132333-AG-1-D DU)

Method A-01-R: Isotopic Uranium batch 608325
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBMC_20230323 (570-132333-1), (LCS 160-608325/2-A), (MB 160-608325/1-A), (570-133036-R-1-G) and (570-133036-R-1-I DU)

Method ExtChrom:

Method ExtChrom:

Method ExtChrom: Uranium Prep Batch 160-608325:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBMC_20230323 (570-132333-1).

Method ExtChrom: Uranium Prep Batch 160-608221:

The following samples were prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBMC_20230323 (570-132333-1) and (570-132333-AG-1-A DU).

Method PrecSep_0:

Method PrecSep-21:

Method PrecSep-7: Strontium-90 Prep Batch 606565

Job ID: 570-132333-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

The following sample was prepared at a reduced aliquot due to Matrix: EPBMC_20230323 (570-132333-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132333-8
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: EPBMC_20230323
Lab Sample ID: 570-132333-1

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample Results

8 Client HCay & Cadrchler, Job ID: 570-134333-9
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	15./	G	M,04	M,1M	3,00	14,M	68 IjF	02j40j43 14:05	02j47j43 19:34	1
Gross Beta	9.73	G	3,49	3,24	2,00	2,40	68 IjF	02j40j43 14:05	02j47j43 19:34	1

pEdbuef 8 HCrli eri

Client Sample Results

8 Client HCay & Adrchler, Job ID: 570-134333-9
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Udoff &6cH	9,15	s U	G,90	G,97	3,00	10,G	68 IjF	02j40j43 14:05	02j47j43 19:34	1
Udoff SinH	3,GG	s U	4,G5	4,G9	2,00	2,02	68 IjF	02j40j43 14:05	02j47j43 19:34	1

pEdbuef 8 HCrli eri

Client Sample Results

8 Client HCay & Adrchler, Job ID: 570-134333-9
. obPrnj/ Ini : Soi leB / / gF l/ L & HeA SR.

Method: EPA 901.1 - Cesium 127 4 8 ther Gamma Emitters (GS)

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
8 i f lEm-137	-0,5MG	s	G,G7	G,G7	40,0	7,MG	68 ljF	03j49j43 1G33	02j14j43 1G29	1
. orHf f lEm-20	7,15	s	102	102		110	68 ljF	03j49j43 1G33	02j14j43 1G29	1

pEdbulef 8 HCrli eri

Client Sample Results

8 Client HCay & Cadrchler, Job ID: 570-134333-9
. dobPrrj/ Ini : Soi leB / / gF l/ L & HeA SR.

Method: EPA 901.1 - Cesium 127 4 8 ther Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
8 i f lEm-137	3,39	s	G,45	G,47	40,0	7,59	68 ljF	03j31j43 15:10	02j13j43 40:39	1
. orHf f lEm-20	-G1,7	s	113	113		12G	68 ljF	03j31j43 15:10	02j13j43 40:39	1

pEdbulef 8 HCrli eri

Client Sample Results

8 Client HCay & Adrchler, Job ID: 570-134333-9
. dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA 902.0 - Radium-33& (GFPC)

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-33&	0.210		0,441	0,444	1,00	0,300	68 IjF	02j05j43 0M50	02j49j43 07:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*30 - 110*	*04/05/23 09:50*	*04/28/23 07:44*	*1*

pEdbulef 8 HCrli eri

Client Sample Results

8 Client HCay & Ordchler, Job ID: 570-134333-9
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 902.0 - Radium-33& (GFPC) - Dissolved

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
L HAlEm-44G	0,0G33	s	0,1G1	0,1G1	1,00	0,303	68 IjF	02j05j43 0M50	02j49j43 07:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.9*		*30 - 110*	*04/05/23 09:50*	*04/28/23 07:44*	*1*

pEdbuef 8 HCrli eri

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Client Sample Results

8 Client HCay & Cadrchler, Job ID: 570-134333-9
. dobPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 90/ .0 - Radium-33O(GFPC)

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
L HAlEm-449	0,9G0	s U	0,797	0,7M1	1,00	1,4G	68 IjF	02j05j43 10:44	02j47j43 14:30	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.3*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:30*	*1*
Y Carrier	*64.3*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:30*	*1*

pEdbulef 8 HCrli eri

Client Sample Results

8 Client HCay & Adrchler, Job ID: 570-134333-9
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 90/ .0 - Radium-33O(GFPC) - Dissolved

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-33O	0.&OO		0,220	0,222	1,00	0,G2G	68 IjF	02j05j43 10:44	02j47j43 14:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*88.9*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:08*	*1*
Y Carrier	*87.1*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:08*	*1*

pEdbulef 8 HCrli eri

Client Sample Results

8 Client HCay & Cadrchler, Job ID: 570-134333-9
. dobPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
/ nobenlEm-M0	0,9M9	s	0,791	0,795	3,00	1,42	68 IjF	02j07j43 11:14	02j17j43 1M44	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.4*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:22*	*1*
Y Carrier	*79.6*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:22*	*1*

pEdbulef 8 HCrli eri

Client Sample Results

8 Client HCay & Ordrchler, Job ID: 570-134333-9
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
/ nbenlEm-M0	0,2G3	s	0,223	0,225	3,00	0,717	68 IjF	02j13j43 12:5M	02j42j43 1M42	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*79.1*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:24*	*1*
Y Carrier	*84.5*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:24*	*1*

pEdbulef 8 HCrli eri

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Client Sample Results

8 Client HCay & Cadrchler, Job ID: 570-134333-9
. dobPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 90&0 - Tritium, Total (LSC)

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
TdrlEm	-4G3	s	1M7	1M9	500	21G	68 IjF	02j19j43 11:14	02j1Mj43 10:33	1

pEdbulef 8 HCrli eri

Client Sample Results

8 Client HCay & Adrchler, Job ID: 570-134333-9
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: D8 E A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	/ .&O		0,M54	0,M99	1,00	0,3G5	68 IjF	02j40j43 1G09	02j42j43 43:47	1

pEdbulef 8 HCrli eri

Client Sample Results

8 Client HCay & Cadrchler, Job ID: 570-134333-9
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: D8 E A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBMC630320232 **Lab Sample ID: 570-123222-1**
Date Collected: 02W2W2 11:10 **Matri_: x ater**
Date Received: 02W2W2 19:30

Analyte	Result	Qualifier	Count Uncert. (3σ+W)	Total Uncert. (3σ+W)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	/ .51		0,9M2	0,M31	1,00	0,429	68 IjF	02j40j43 13:3G	02j42j43 43:49	1

pEdbuef 8 HCrli eri

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Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Ba							
Lab Sample ID	Client Sample ID	(30-110)							
570-132333-1	EPBMC_20230323	86.3							
LCS 160-606156/2-A	Lab Control Sample	89.6							
MB 160-606156/1-A	Method Blank	91.6							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)							
		Ba							
Lab Sample ID	Client Sample ID	(30-110)							
570-132333-1	EPBMC_20230323	88.9							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Ba	Y						
Lab Sample ID	Client Sample ID	(30-110)	(30-110)						
570-132333-1	EPBMC_20230323	86.3	64.3						
LCS 160-606165/2-A	Lab Control Sample	89.6	84.1						
MB 160-606165/1-A	Method Blank	91.6	84.9						

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)							
		Ba	Y						
Lab Sample ID	Client Sample ID	(30-110)	(30-110)						
570-132333-1	EPBMC_20230323	88.9	87.1						

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
		Sr	Y						
Lab Sample ID	Client Sample ID	(30-110)	(30-110)						
570-132333-1	EPBMC_20230323	87.4	79.6						
LCS 160-606565/2-A	Lab Control Sample	86.3	77.0						
LCS 160-607355/2-A	Lab Control Sample	86.2	84.1						

Method: 905 - Strontium-90 (GFPC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
LCSD 160-606565/3-A	Lab Control Sample Dup	85.1	69.9
MB 160-606565/1-A	Method Blank	86.6	81.9
MB 160-607355/1-A	Method Blank	87.8	85.6

Tracer/Carrier Legend

Sr = Sr Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-132333-1	EPBMC_20230323	79.1	84.5

Tracer/Carrier Legend

Sr = Sr Carrier

Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-608221/2-A	Lab Control Sample	81.2
LCS 160-608325/2-A	Lab Control Sample	87.6
MB 160-608221/1-A	Method Blank	96.9
MB 160-608325/1-A	Method Blank	81.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
570-132333-1 DU	EPBMC_20230323	85.0

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-607811[illegible]-A
Matri/ : x ater
Analysis Batch: 60988N

Client Sample ID: Method Blank
Wrep Pype: Potal3T A
Wrep Batch: 607811

Analyte	MB Result	MB Qualizier	Count Fncert. 285 (3σ	Potal Fncert. 285 (3σ	RL	MDC	Fnit	Wrepared	Analy) ed	Dil +ac
Gross Alpha	0.2783	U	0.687	0.687	3.00	1.22	pCi/L	04/20/23 12:05	04/27/23 08:17	1
Gross Beta	0.1953	U	0.405	0.406	4.00	0.692	pCi/L	04/20/23 12:05	04/27/23 08:17	1

Lab Sample ID: LCS 160-607811[illegible]-A
Matri/ : x ater
Analysis Batch: 60988N

Client Sample ID: Lab Control Sample
Wrep Pype: Potal3T A
Wrep Batch: 607811

Analyte	Spike Added	LCS Result	LCS Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits
Gross Alpha	50.5	56.05		8.09	3.00	2.44	pCi/L	111	75 - 125

Lab Sample ID: LCSB 160-607811[illegible]-A
Matri/ : x ater
Analysis Batch: 60988N

Client Sample ID: Lab Control Sample
Wrep Pype: Potal3T A
Wrep Batch: 607811

Analyte	Spike Added	LCSB Result	LCSB Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits
Gross Beta	73.3	69.79		7.50	4.00	0.896	pCi/L	95	75 - 125

Method: 901.1 - Cesium 1f %E _ ther Gamma &mitters 2GSσ

Lab Sample ID: MB 160-60N87f 3[illegible]-A
Matri/ : x ater
Analysis Batch: 60%160

Client Sample ID: Method Blank
Wrep Pype: Potal3T A
Wrep Batch: 60N87f

Analyte	MB Result	MB Qualizier	Count Fncert. 285 (3σ	Potal Fncert. 285 (3σ	RL	MDC	Fnit	Wrepared	Analy) ed	Dil +ac
Cesium-137	2.793	U	6.67	6.68	20.0	7.49	pCi/L	03/28/23 16:33	04/12/23 04:01	1
Potassium-40	27.15	U	82.6	82.7		106	pCi/L	03/28/23 16:33	04/12/23 04:01	1

Lab Sample ID: LCS 160-60N87f 3[illegible]-A
Matri/ : x ater
Analysis Batch: 60%177

Client Sample ID: Lab Control Sample
Wrep Pype: Potal3T A
Wrep Batch: 60N87f

Analyte	Spike Added	LCS Result	LCS Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits
Americium-241	135000	139700		16600		562	pCi/L	103	79 - 121
Cesium-137	40800	39690		4740	20.0	156	pCi/L	97	87 - 115
Cobalt-60	17700	17220		2060		78.1	pCi/L	97	88 - 116

Lab Sample ID: MB 160-60N%%O3[illegible]-A
Matri/ : x ater
Analysis Batch: 60%f 81

Client Sample ID: Method Blank
Wrep Pype: Potal3T A
Wrep Batch: 60N%%O

Analyte	MB Result	MB Qualizier	Count Fncert. 285 (3σ	Potal Fncert. 285 (3σ	RL	MDC	Fnit	Wrepared	Analy) ed	Dil +ac
Cesium-137	-7.022	U	12.9	12.9	20.0	15.4	pCi/L	03/31/23 15:10	04/13/23 14:40	1
Potassium-40	-5.858	U	119	119		163	pCi/L	03/31/23 15:10	04/13/23 14:40	1

Method: 901.1 - Cesium 1f %E _ ther Gamma &mitters 2GSo2Continuedo

Lab Sample ID: LCS 160-60N%%O38-A
Matri/ : x ater
Analysis Batch: 60%f 86

Client Sample ID: Lab Control Sample
Wrep Pype: Potal3T A
Wrep Batch: 60N%%O

Analyte	Spike Added	LCS Result	LCS Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits
Americium-241	135000	154200		18300		291	pCi/L	114	79 - 121
Cesium-137	40800	42460		5060	20.0	81.7	pCi/L	104	87 - 115
Cobalt-60	17700	18450		2200		56.4	pCi/L	104	88 - 116

Method: 90f .0 - Radium-886 2G+WCσ

Lab Sample ID: MB 160-6061N631-A
Matri/ : x ater
Analysis Batch: 6098f 8

Client Sample ID: Method Blank
Wrep Pype: Potal3T A
Wrep Batch: 6061N6

Analyte	MB Result	MB Qualizier	Count Fncert. 285 (3σ	Potal Fncert. 285 (3σ	RL	MDC	Fnit	Wrepared	Analy) ed	Dil +ac
Radium-226	0.1227	U	0.134	0.135	1.00	0.213	pCi/L	04/05/23 09:50	04/28/23 07:42	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.6*		*30 - 110*	*04/05/23 09:50*	*04/28/23 07:42*	*1*

Lab Sample ID: LCS 160-6061N633-A
Matri/ : x ater
Analysis Batch: 6098f 8

Client Sample ID: Lab Control Sample
Wrep Pype: Potal3T A
Wrep Batch: 6061N6

Analyte	Spike Added	LCS Result	LCS Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits
Radium-226	11.3	9.890		1.23	1.00	0.246	pCi/L	87	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.6*		*30 - 110*

Method: 90Q0 - Radium-887 2G+WCσ

Lab Sample ID: MB 160-60616N31-A
Matri/ : x ater
Analysis Batch: 6091NO

Client Sample ID: Method Blank
Wrep Pype: Potal3T A
Wrep Batch: 60616N

Analyte	MB Result	MB Qualizier	Count Fncert. 285 (3σ	Potal Fncert. 285 (3σ	RL	MDC	Fnit	Wrepared	Analy) ed	Dil +ac
Radium-228	0.1919	U	0.347	0.347	1.00	0.595	pCi/L	04/05/23 10:22	04/27/23 12:29	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.6*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:29*	*1*
Y Carrier	*84.9*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:29*	*1*

Method: 90Q0 - Radium-887 2G+WCσ2Continuedσ

Lab Sample ID: LCS 160-60616N38-A
Matri/ : x ater
Analysis Batch: 6091NO

Client Sample ID: Lab Control Sample
Wrep Pype: Potal3T A
Wrep Batch: 60616N

Analyte	Spike Added	LCS Result	LCS Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits
Radium-228	8.00	10.23		1.39	1.00	0.552	pCi/L	128	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.6*		*30 - 110*
Y Carrier	*84.1*		*30 - 110*

Method: 90N - Strontium-90 2G+WCσ

Lab Sample ID: MB 160-606N6N31-A
Matri/ : x ater
Analysis Batch: 60%7O1

Client Sample ID: Method Blank
Wrep Pype: Potal3T A
Wrep Batch: 606N6N

Analyte	MB Result	MB Qualizier	Count Fncert. 285 (3σ	Potal Fncert. 285 (3σ	RL	MDC	Fnit	Wrepared	Analy) ed	Dil +ac
Strontium-90	0.1675	U	0.204	0.204	3.00	0.337	pCi/L	04/07/23 11:12	04/17/23 19:03	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.6*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*
Y Carrier	*81.9*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*

Lab Sample ID: LCS 160-606N6N38-A
Matri/ : x ater
Analysis Batch: 60%7O1

Client Sample ID: Lab Control Sample
Wrep Pype: Potal3T A
Wrep Batch: 606N6N

Analyte	Spike Added	LCS Result	LCS Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits
Strontium-90	7.34	7.570		0.853	3.00	0.305	pCi/L	103	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*86.3*		*30 - 110*
Y Carrier	*77.0*		*30 - 110*

Lab Sample ID: LCSD 160-606N6N3F-A
Matri/ : x ater
Analysis Batch: 60%7O1

Client Sample ID: Lab Control Sample Dup
Wrep Pype: Potal3T A
Wrep Batch: 606N6N

Analyte	Spike Added	LCSD Result	LCSD Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits	R&R	R&R Limit
Strontium-90	7.34	7.501		0.887	3.00	0.401	pCi/L	102	75 - 125	0.04	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.1*		*30 - 110*
Y Carrier	*69.9*		*30 - 110*

Method: 90N - Strontium-90 2G+WCσ2Continuedσ

Lab Sample ID: MB 160-60%fNNN1-A
Matri/ : x ater
Analysis Batch: 607C9O

Client Sample ID: Method Blank
Wrep Pype: Potal3T A
Wrep Batch: 60%fNN

Analyte	MB Result	MB Qualizier	Count Fncert. 285 (3σ	Potal Fncert. 285 (3σ	RL	MDC	Fnit	Wrepared	Analy) ed	Dil +ac
Strontium-90	0.1022	U	0.206	0.206	3.00	0.351	pCi/L	04/13/23 14:59	04/24/23 19:21	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.8*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:21*	*1*
Y Carrier	*85.6*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:21*	*1*

Lab Sample ID: LCS 160-60%fNNN8-A
Matri/ : x ater
Analysis Batch: 607C9O

Client Sample ID: Lab Control Sample
Wrep Pype: Potal3T A
Wrep Batch: 60%fNN

Analyte	Spike Added	LCS Result	LCS Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits
Strontium-90	7.33	7.451		0.832	3.00	0.288	pCi/L	102	75 - 125

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*86.2*		*30 - 110*
Y Carrier	*84.1*		*30 - 110*

Method: 906.0 - Pritium4Potal 2LSCσ

Lab Sample ID: MB 160-60%7903l-A
Matri/ : x ater
Analysis Batch: 607161

Client Sample ID: Method Blank
Wrep Pype: Potal3T A
Wrep Batch: 60%790

Analyte	MB Result	MB Qualizier	Count Fncert. 285 (3σ	Potal Fncert. 285 (3σ	RL	MDC	Fnit	Wrepared	Analy) ed	Dil +ac
Tritium	-102.7	U	224	224	500	433	pCi/L	04/18/23 11:12	04/19/23 06:41	1

Lab Sample ID: LCS 160-60%7903B-A
Matri/ : x ater
Analysis Batch: 607161

Client Sample ID: Lab Control Sample
Wrep Pype: Potal3T A
Wrep Batch: 60%790

Analyte	Spike Added	LCS Result	LCS Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits
Tritium	2090	1604		396	500	420	pCi/L	77	75 - 125

Method: A-01-R - Isotopic Franium 2Alpha Spectrometryσ

Lab Sample ID: MB 160-6078813l-A
Matri/ : x ater
Analysis Batch: 607NN8

Client Sample ID: Method Blank
Wrep Pype: Potal3T A
Wrep Batch: 607881

Analyte	MB Result	MB Qualizier	Count Fncert. 285 (3σ	Potal Fncert. 285 (3σ	RL	MDC	Fnit	Wrepared	Analy) ed	Dil +ac
Dissolved Uranium	0.08812	U	0.1043	0.1045	1.00	0.129	pCi/L	04/20/23 13:36	04/24/23 23:28	1

Method: A-01-R - Isotopic Franium 2Alpha Spectrometryσ2Continuedσ

Lab Sample ID: LCS 160-6078813-A
Matri/ : x ater
Analysis Batch: 607NNf

Client Sample ID: Lab Control Sample
Wrep Pype: Potal3T A
Wrep Batch: 607881

Analyte	Spike Added	LCS Result	LCS Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits
Uranium-234	12.7	12.79		1.52	1.00	0.152	pCi/L	100	75 - 125
Uranium-238	13.0	14.84		1.70	1.00	0.0668	pCi/L	114	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*81.2*		*30 - 110*

Lab Sample ID: MB 160-607f 8N31-A
Matri/ : x ater
Analysis Batch: 607NN1

Client Sample ID: Method Blank
Wrep Pype: Potal3T A
Wrep Batch: 607f 8N

Analyte	MB Result	MB Qualizier	Count Fncert. 285 (3σ	Potal Fncert. 285 (3σ	RL	MDC	Fnit	Wrepared	Analy) ed	Dil +ac
Total Uranium	0.07277	U	0.1152	0.1153	1.00	0.184	pCi/L	04/20/23 16:08	04/24/23 23:27	1

Lab Sample ID: LCS 160-607f 8N38-A
Matri/ : x ater
Analysis Batch: 607NNN

Client Sample ID: Lab Control Sample
Wrep Pype: Potal3T A
Wrep Batch: 607f 8N

Analyte	Spike Added	LCS Result	LCS Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	U Rec	U Rec Limits
Uranium-234	12.7	13.86		1.59	1.00	0.144	pCi/L	109	75 - 125
Uranium-238	13.0	14.93		1.68	1.00	0.150	pCi/L	115	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*87.6*		*30 - 110*

Lab Sample ID: N%0-1f 8f f f -1 DF
Matri/ : x ater
Analysis Batch: 607NN6

Client Sample ID: &WBMC, 808f 0f 8f
Wrep Pype: Dissolved
Wrep Batch: 607881

Analyte	Sample Result	Sample Qual	DF Result	DF Qual	Potal Fncert. 285 (3σ	RL	MDC	Fnit	R&R R&R	R&R Limit
Dissolved Uranium	4.51		3.782		0.851	1.00	0.343	pCi/L	0.41	1

Rad

Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	Fill_Geo-0	
MB 160-605283/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605283/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Filtration Batch: 605402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	Filtration	
570-132333-1	EPBMC_20230323	Dissolved	Water	Filtration	
570-132333-1	EPBMC_20230323	Dissolved	Water	Filtration	
570-132333-1	EPBMC_20230323	Dissolved	Water	Filtration	
570-132333-1 DU	EPBMC_20230323	Dissolved	Water	Filtration	

Prep Batch: 605774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	Fill_Geo-0	605402
MB 160-605774/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605774/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 606156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	PrecSep-21	605402
570-132333-1	EPBMC_20230323	Total/NA	Water	PrecSep-21	
MB 160-606156/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-606156/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 606165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	PrecSep_0	605402
570-132333-1	EPBMC_20230323	Total/NA	Water	PrecSep_0	
MB 160-606165/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-606165/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 606565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	PrecSep-7	
MB 160-606565/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-606565/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-606565/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 607355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	PrecSep-7	605402
MB 160-607355/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-607355/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 607890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	LSC_Dist_Susp	
MB 160-607890/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-607890/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-8

Rad

Prep Batch: 608211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	Evaporation	605402
570-132333-1	EPBMC_20230323	Total/NA	Water	Evaporation	
MB 160-608211/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-608211/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-608211/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 608221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Dissolved	Water	ExtChrom	605402
MB 160-608221/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-608221/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	
570-132333-1 DU	EPBMC_20230323	Dissolved	Water	ExtChrom	605402

Prep Batch: 608325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132333-1	EPBMC_20230323	Total/NA	Water	ExtChrom	
MB 160-608325/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-608325/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Client Sample ID: EPBMC_20230323
Lab Sample ID: 570-132333-1
Date Collected: 03/23/23 11:10
Matrix: Water
Date Received: 03/23/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	Evaporation			51.91 mL	1.0 g	608211	04/20/23 12:05	MST	EET SL
Dissolved	Analysis	900.0		1			609154	04/27/23 18:32	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			46.58 mL	1.0 g	608211	04/20/23 12:05	MST	EET SL
Total/NA	Analysis	900.0		1			609154	04/27/23 18:32	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	605774	03/31/23 15:10	AJP	EET SL
Dissolved	Analysis	901.1		1			607330	04/13/23 20:38	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Total/NA	Analysis	901.1		1			607190	04/12/23 16:48	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	PrecSep-21			751.24 mL	1.0 g	606156	04/05/23 09:50	DJP	EET SL
Dissolved	Analysis	903.0		1			609232	04/28/23 07:44	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			759.80 mL	1.0 g	606156	04/05/23 09:50	DJP	EET SL
Total/NA	Analysis	903.0		1			609232	04/28/23 07:44	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	PrecSep_0			751.24 mL	1.0 g	606165	04/05/23 10:22	DJP	EET SL
Dissolved	Analysis	904.0		1			609225	04/27/23 12:08	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			759.80 mL	1.0 g	606165	04/05/23 10:22	DJP	EET SL
Total/NA	Analysis	904.0		1			609154	04/27/23 12:30	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	PrecSep-7			504.29 mL	1.0 g	607355	04/13/23 14:59	KAC	EET SL
Dissolved	Analysis	905		1			608494	04/24/23 19:24	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			256.18 mL	1.0 g	606565	04/07/23 11:12	DJP	EET SL
Total/NA	Analysis	905		1			607834	04/17/23 19:22	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			100.22 mL	1.0 g	607890	04/18/23 11:12	ZR	EET SL
Total/NA	Analysis	906.0		1			608161	04/19/23 10:33	REV	EET SL
	Instrument ID: LSC3180									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	ExtChrom			252.7 mL	1.0 mL	608221	04/20/23 13:36	SEH	EET SL
Dissolved	Analysis	A-01-R		1			608554	04/24/23 23:28	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			246.1 mL	1.0 mL	608325	04/20/23 16:08	SEH	EET SL
Total/NA	Analysis	A-01-R		1			608558	04/24/23 23:27	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client: Haley & Aldrich, Inc.
Job ID: 570-132333-8
Project/Site: Boeing SSFL ISRA and BMP

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-8

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-8

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132333-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132333-1	EPBMC_20230323	Water	03/23/23 11:10	03/23/23 19:20

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

570-132333 Chain of Custody

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, CS-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBMC_20230323	3/23/23	1110	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230323-1	3/23/23	1110	TB	WM	3	N	N														x					

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #
Time of Readings 1110
DO (mg/L) 16.76
pH 8.52
Temp (°C/°F) 13.77°C
TRC (mg/L)
Checked by: MMD
Date/Time: 3/23/23 1300

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~ECI #570144595~~ ECI #570187 ECI #570144595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: ____ Corr'd: ____ Therm ID No.:	
Relinquished by: Michelle Dallalah	Company: H&A	Date/Time: 3/23/23 1695	Received by: EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.4/2.4 2.9/2.9 3.1/3.1 SCI

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12))(SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C)(E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodephnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	8-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBMC_20230323	3/23/23	1110	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1110	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☑ Return to Client ☐ Disposal by Lab ☐ Archive for ___ Months

Special Instructions/QC Requirements & Comments: ~~ECI #576048~~ ECI # ~~576048~~ 576048 = S7014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Receiv	EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	FE	Date/Time: 3/23/23 1920
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212491.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132333-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132333-3)	3/23/23	11:10 Pacific		Water			X				3	See Attached Instructions
												RUN PAST HT — VIR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 1447			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212452.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132333-1
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/6/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
Preservation Code:									
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									-VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 9:48	EC		3/24/23 0948	ED
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212452

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212453.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132336-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X		See Attached Instructions
									RUN PAST HT
									— V RENDR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		3-24-23 9:48	EC		3/24/23 0948	EM
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212453

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212695.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132333-8
Address: 13715 Rider Trail North,	Due Date Requested: 4/25/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha/Beta- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBMC_20230323 (570-132333-1)	3/23/23	11:10 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	9	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 03/27/23 6:52	Company: EC	Received by: FED EX	Date/Time:	Company:
Relinquished by: FED EX	Date/Time:	Company:	Received by: Sierra Worthington	Date/Time: MAR 28 2023 0910	Company: GASIL
Relinquished by:	Date/Time:	Company:	Received by:	Date/Time:	Company:
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132333-8

Login Number: 132333

List Number: 1

Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132333-8

Login Number: 132333
List Number: 4
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 03/28/23 11:53 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/7/2023 11:25:31 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132336-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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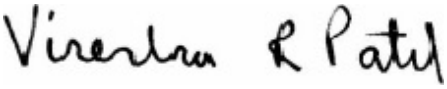
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/7/2023 11:25:31 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Qualifiers

GC/MS mV O

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Sep i mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LR	LCS/LCSD recovery below method control limits

HPLC/IC

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier DesAriction
BU	Sample was prepped beyond the specified holding time
IB	CCV recovery above limit; analyte not detected
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits
MB	Analyte present in the method blank

General Chep istry

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Glossary (Continued)

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132336-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132336-1

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.8º C.

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-314233. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8260B SIM: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-314624.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method 625.1 SIM: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 570-316081 and analytical batch 570-316467 recovered outside control limits for the following analytes: Benzidine.

Method 625.1 SIM: The laboratory control sample (LCS) for preparation batch 570-316081 and analytical batch 570-316467 recovered outside acceptance limits for 1,2,4-Trichlorobenzene. There was insufficient sample to perform a re-extraction or re-analysis; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HPLC/IC
Method 300.0: Due to the high concentration of Chloride, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 570-314360 could not be evaluated for accuracy and precision. The associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 200.7 Rev 4.4: The matrix spike duplicate (MSD) recoveries and precision of Calcium and Magnesium for preparation batch 570-314531 and analytical batch 570-315160 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) was within acceptance limits

Method 200.8: The continuing calibration verification (CCV) associated with batch 570-314988 recovered above the upper control limit for Beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: EPBLLC_20230323 (570-132336-1).

Method 200.8: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 570-314528 and analytical batch 570-314988 recovered outside control limits for the following analytes: Beryllium. These analytes were biased high in

Job ID: 570-132336-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 200.8: The method blank for preparation batch 570-314924 and analytical batch 570-315053 contained Manganese above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EPBLLC_20230323 (570-132336-1). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EPBLLC_20230323 (570-132336-1), (570-132336-K-1 MS) and (570-132336-K-1 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method Kelada 01: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 570-315871 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method SM 2540F: Insufficient sample volume was available to perform a sample duplicate (DUP) associated with analytical batch 570-314439.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method 1664A: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-315686.The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.
Method: 1664.

Method 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-315947. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. 8015B_DRO.

Method 625: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 570-316081. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch. Method 625.1 Sim

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Client Sample ID: EPBLLC_20230323

Lab Sample ID: 570-132336-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.033	J,DX	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.032	J,DX	0.20	0.019	ug/L	1		218.6	Dissolved
Chloride	59		1.0	0.36	mg/L	1		300.0	Total/NA
Fluoride	0.93		0.10	0.046	mg/L	1		300.0	Total/NA
Nitrate as N	3.4		0.10	0.020	mg/L	1		300.0	Total/NA
Sulfate - DL	720		10	2.4	mg/L	10		300.0	Total/NA
Nitrate Nitrite as N	3.4		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	0.90		0.50	0.0035	mg/L	1		200.7 Rev 4.4	Total Recoverable
Boron	0.86	BU	0.50	0.0035	mg/L	1		200.7 Rev 4.4	Dissolved
Aluminum	10000		150	86	ug/L	10		200.8	Total Recoverable
Arsenic	7.3		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	210		1.0	0.17	ug/L	1		200.8	Total Recoverable
Beryllium	0.86		0.50	0.26	ug/L	1		200.8	Total Recoverable
Cadmium	3.9		1.0	0.13	ug/L	1		200.8	Total Recoverable
Chromium	22		2.0	0.14	ug/L	1		200.8	Total Recoverable
Cobalt	9.7		1.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	29		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	21000		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	450	MB	1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	55		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	8.9		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	1.3	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Zinc	77		20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	25		2.0	0.52	ug/L	1		200.8	Total Recoverable
Thallium	0.32	J,DX	1.0	0.11	ug/L	1		200.8	Total Recoverable
Arsenic	1.3	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	59	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Cadmium	0.22	J,DX BU	1.0	0.13	ug/L	1		200.8	Dissolved
Chromium	0.60	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Cobalt	0.43	J,DX BU	1.0	0.14	ug/L	1		200.8	Dissolved
Copper	3.1	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	11	J,DX BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	29	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	21	BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	0.93	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Selenium	24	BU	2.0	0.52	ug/L	1		200.8	Dissolved
Hardness as calcium carbonate	940		7.1	0.50	mg/L	1		SM 2340B	Total Recoverable

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPBLLC_20230323 (Continued)
Lab Sample ID: 570-132336-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hardness as calcium carbonate	850		7.1	0.50	mg/L	1		SM 2340B	Dissolved
HEM (Oil & Grease)	0.78	J,DX	0.97	0.50	mg/L	1		1664A	Total/NA
Cr (III)	0.022	J,DX	0.050	0.0030	mg/L	1		218.6 CR3	Total/NA
Ammonia	0.047	J,DX	0.075	0.032	mg/L	1		350.1	Total/NA
Turbidity	390		0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	1800		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	1600		20	17	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	620		10	8.3	mg/L	1		SM 2540D	Total/NA
Settleable Solids	2.0		0.10	0.10	mL/L	1		SM 2540F	Total/NA
Carbon, Total Organic	14		4.0	2.1	mg/L	8		SM 5310D	Total/NA
MBAS	0.052	J,DX	0.20	0.050	mg/L	1		SM 5540C	Total/NA
Clay (less than 0.00391 mm)	18.08		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	8.57		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	59.90		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	77.98		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	13.45		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: TB-20230323-1
Lab Sample ID: 570-132336-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/24/23 00:43	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/24/23 00:43	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/24/23 00:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/24/23 00:43	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/24/23 00:43	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/24/23 00:43	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/24/23 00:43	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/24/23 00:43	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/24/23 00:43	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/24/23 00:43	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/24/23 00:43	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/24/23 00:43	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/24/23 00:43	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/24/23 00:43	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/24/23 00:43	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/24/23 00:43	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/24/23 00:43	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/24/23 00:43	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/24/23 00:43	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/24/23 00:43	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/24/23 00:43	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/24/23 00:43	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/24/23 00:43	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/24/23 00:43	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/24/23 00:43	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/24/23 00:43	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/24/23 00:43	1
2-Hexanone	ND		5.0	2.2	ug/L			03/24/23 00:43	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/24/23 00:43	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/24/23 00:43	1
Acetone	ND		20	16	ug/L			03/24/23 00:43	1
Acrolein	ND		5.0	4.6	ug/L			03/24/23 00:43	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/24/23 00:43	1
Benzene	ND		0.50	0.28	ug/L			03/24/23 00:43	1
Bromobenzene	ND		0.50	0.23	ug/L			03/24/23 00:43	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/24/23 00:43	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/24/23 00:43	1
Bromoform	ND		1.0	0.25	ug/L			03/24/23 00:43	1
Bromomethane	ND		0.50	0.22	ug/L			03/24/23 00:43	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/24/23 00:43	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/24/23 00:43	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/24/23 00:43	1
Chloroethane	ND		1.0	0.29	ug/L			03/24/23 00:43	1
Chloroform	ND		0.50	0.19	ug/L			03/24/23 00:43	1
Chloromethane	ND		0.50	0.30	ug/L			03/24/23 00:43	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/24/23 00:43	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/24/23 00:43	1
Cyclohexane	ND		2.0	0.79	ug/L			03/24/23 00:43	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/24/23 00:43	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		0.50	0.19	ug/L			03/24/23 00:43	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/24/23 00:43	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/24/23 00:43	1
Ethanol	ND		100	65	ug/L			03/24/23 00:43	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/24/23 00:43	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/24/23 00:43	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/24/23 00:43	1
Isopropanol	ND		250	120	ug/L			03/24/23 00:43	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/24/23 00:43	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/24/23 00:43	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/24/23 00:43	1
Naphthalene	ND		1.0	0.33	ug/L			03/24/23 00:43	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/24/23 00:43	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/24/23 00:43	1
o-Xylene	ND		0.50	0.15	ug/L			03/24/23 00:43	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/24/23 00:43	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/24/23 00:43	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/24/23 00:43	1
Styrene	ND		0.50	0.19	ug/L			03/24/23 00:43	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/24/23 00:43	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/24/23 00:43	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/24/23 00:43	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/24/23 00:43	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/24/23 00:43	1
Toluene	ND		0.50	0.23	ug/L			03/24/23 00:43	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/24/23 00:43	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/24/23 00:43	1
Trichloroethene	ND		0.50	0.17	ug/L			03/24/23 00:43	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/24/23 00:43	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/24/23 00:43	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/24/23 00:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*84*		*96 - 146*		*03/24/23 00:43*	*1*
4-Bromofluorobenzene (Surr)	*16b*		*96 - 146*		*03/24/23 00:43*	*1*
Dibromofluoromethane (Surr)	*zb*		*96 - 146*		*03/24/23 00:43*	*1*
Toluene-d8 (Surr)	*160*		*96 - 146*		*03/24/23 00:43*	*1*

Client Sample ID: TB-20230323-1
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/24/23 01:49	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/24/23 01:49	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/24/23 01:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/24/23 01:49	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/24/23 01:49	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/24/23 01:49	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/24/23 01:49	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/24/23 01:49	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-20230323-1
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/24/23 01:49	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/24/23 01:49	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/24/23 01:49	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/24/23 01:49	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/24/23 01:49	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/24/23 01:49	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/24/23 01:49	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/24/23 01:49	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/24/23 01:49	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/24/23 01:49	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/24/23 01:49	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/24/23 01:49	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/24/23 01:49	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/24/23 01:49	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/24/23 01:49	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/24/23 01:49	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/24/23 01:49	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/24/23 01:49	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/24/23 01:49	1
2-Hexanone	ND		5.0	2.2	ug/L			03/24/23 01:49	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/24/23 01:49	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/24/23 01:49	1
Acetone	ND		20	16	ug/L			03/24/23 01:49	1
Acrolein	ND		5.0	4.6	ug/L			03/24/23 01:49	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/24/23 01:49	1
Benzene	ND		0.50	0.28	ug/L			03/24/23 01:49	1
Bromobenzene	ND		0.50	0.23	ug/L			03/24/23 01:49	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/24/23 01:49	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/24/23 01:49	1
Bromoform	ND		1.0	0.25	ug/L			03/24/23 01:49	1
Bromomethane	ND		0.50	0.22	ug/L			03/24/23 01:49	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/24/23 01:49	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/24/23 01:49	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/24/23 01:49	1
Chloroethane	ND		1.0	0.29	ug/L			03/24/23 01:49	1
Chloroform	ND		0.50	0.19	ug/L			03/24/23 01:49	1
Chloromethane	ND		0.50	0.30	ug/L			03/24/23 01:49	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/24/23 01:49	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/24/23 01:49	1
Cyclohexane	ND		2.0	0.79	ug/L			03/24/23 01:49	1
Dibromochloromethane	ND		0.50	0.15	ug/L			03/24/23 01:49	1
Dibromomethane	ND		0.50	0.19	ug/L			03/24/23 01:49	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/24/23 01:49	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/24/23 01:49	1
Ethanol	ND		100	65	ug/L			03/24/23 01:49	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/24/23 01:49	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/24/23 01:49	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/24/23 01:49	1
Isopropanol	ND		250	120	ug/L			03/24/23 01:49	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-20230323-1
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		0.50	0.16	ug/L			03/24/23 01:49	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/24/23 01:49	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/24/23 01:49	1
Naphthalene	ND		1.0	0.33	ug/L			03/24/23 01:49	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/24/23 01:49	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/24/23 01:49	1
o-Xylene	ND		0.50	0.15	ug/L			03/24/23 01:49	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/24/23 01:49	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/24/23 01:49	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/24/23 01:49	1
Styrene	ND		0.50	0.19	ug/L			03/24/23 01:49	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/24/23 01:49	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/24/23 01:49	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/24/23 01:49	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/24/23 01:49	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/24/23 01:49	1
Toluene	ND		0.50	0.23	ug/L			03/24/23 01:49	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/24/23 01:49	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/24/23 01:49	1
Trichloroethene	ND		0.50	0.17	ug/L			03/24/23 01:49	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/24/23 01:49	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/24/23 01:49	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/24/23 01:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*164*		*96 - 146*		*03/24/23 01:49*	*1*
4-Bromofluorobenzene (Surr)	*162*		*96 - 146*		*03/24/23 01:49*	*1*
Dibromofluoromethane (Surr)	*82*		*96 - 146*		*03/24/23 01:49*	*1*
Toluene-d8 (Surr)	*162*		*96 - 146*		*03/24/23 01:49*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/24/23 22:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*122*		*97 - 100*		*03/24/23 22:24*	*1*

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND	LR	0.20	0.13	ug/L		03/30/23 10:27	04/03/23 17:55	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		03/30/23 10:27	04/03/23 17:55	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.089	ug/L		03/30/23 10:27	04/03/23 17:55	1
1,3-Dichlorobenzene	ND		0.20	0.11	ug/L		03/30/23 10:27	04/03/23 17:55	1
1,4-Dichlorobenzene	ND		0.20	0.13	ug/L		03/30/23 10:27	04/03/23 17:55	1
2,4,6-Trichlorophenol	ND		0.98	0.14	ug/L		03/30/23 10:27	04/03/23 17:55	1
2,4-Dichlorophenol	ND		0.98	0.13	ug/L		03/30/23 10:27	04/03/23 17:55	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		03/30/23 10:27	04/03/23 17:55	1
2,4-Dinitrophenol	ND		4.9	4.2	ug/L		03/30/23 10:27	04/03/23 17:55	1
2,4-Dinitrotoluene	ND		0.20	0.11	ug/L		03/30/23 10:27	04/03/23 17:55	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		03/30/23 10:27	04/03/23 17:55	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		03/30/23 10:27	04/03/23 17:55	1
2-Chlorophenol	ND		0.20	0.094	ug/L		03/30/23 10:27	04/03/23 17:55	1
2-Nitrophenol	ND		4.9	3.4	ug/L		03/30/23 10:27	04/03/23 17:55	1
3,3'-Dichlorobenzidine	ND		4.9	2.9	ug/L		03/30/23 10:27	04/03/23 17:55	1
4,6-Dinitro-2-methylphenol	ND		4.9	4.5	ug/L		03/30/23 10:27	04/03/23 17:55	1
4-Bromophenyl phenyl ether	ND		0.20	0.098	ug/L		03/30/23 10:27	04/03/23 17:55	1
4-Chloro-3-methylphenol	ND		0.98	0.13	ug/L		03/30/23 10:27	04/03/23 17:55	1
4-Chlorophenyl phenyl ether	ND		0.20	0.16	ug/L		03/30/23 10:27	04/03/23 17:55	1
4-Nitrophenol	ND		4.9	3.3	ug/L		03/30/23 10:27	04/03/23 17:55	1
Acenaphthene	ND		0.20	0.097	ug/L		03/30/23 10:27	04/03/23 17:55	1
Acenaphthylene	ND		0.20	0.13	ug/L		03/30/23 10:27	04/03/23 17:55	1
Anthracene	ND		0.20	0.083	ug/L		03/30/23 10:27	04/03/23 17:55	1
Benzidine	ND	BA	4.9	2.7	ug/L		03/30/23 10:27	04/03/23 17:55	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		03/30/23 10:27	04/03/23 17:55	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		03/30/23 10:27	04/03/23 17:55	1
Benzo[b]fluoranthene	ND		0.20	0.11	ug/L		03/30/23 10:27	04/03/23 17:55	1
Benzo[g,h,i]perylene	ND		0.20	0.10	ug/L		03/30/23 10:27	04/03/23 17:55	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		03/30/23 10:27	04/03/23 17:55	1
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		03/30/23 10:27	04/03/23 17:55	1
Bis(2-chloroethoxy)methane	ND		0.20	0.10	ug/L		03/30/23 10:27	04/03/23 17:55	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		03/30/23 10:27	04/03/23 17:55	1
Bis(2-ethylhexyl) phthalate	ND		4.9	3.5	ug/L		03/30/23 10:27	04/03/23 17:55	1
Butyl benzyl phthalate	ND		0.98	0.66	ug/L		03/30/23 10:27	04/03/23 17:55	1
Chrysene	ND		0.20	0.11	ug/L		03/30/23 10:27	04/03/23 17:55	1
Dibenz(a,h)anthracene	ND		0.20	0.15	ug/L		03/30/23 10:27	04/03/23 17:55	1
Diethyl phthalate	ND		2.0	0.18	ug/L		03/30/23 10:27	04/03/23 17:55	1
Dimethyl phthalate	ND		2.0	0.096	ug/L		03/30/23 10:27	04/03/23 17:55	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		03/30/23 10:27	04/03/23 17:55	1
Di-n-octyl phthalate	ND		2.9	0.53	ug/L		03/30/23 10:27	04/03/23 17:55	1
Fluoranthene	ND		0.20	0.099	ug/L		03/30/23 10:27	04/03/23 17:55	1
Fluorene	ND		0.20	0.093	ug/L		03/30/23 10:27	04/03/23 17:55	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		03/30/23 10:27	04/03/23 17:55	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		03/30/23 10:27	04/03/23 17:55	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		03/30/23 10:27	04/03/23 17:55	1
Hexachloroethane	ND		0.20	0.13	ug/L		03/30/23 10:27	04/03/23 17:55	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		03/30/23 10:27	04/03/23 17:55	1
Isophorone	ND		0.20	0.097	ug/L		03/30/23 10:27	04/03/23 17:55	1
Naphthalene	ND		0.20	0.11	ug/L		03/30/23 10:27	04/03/23 17:55	1

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrobenzene	ND		0.20	0.14	ug/L		03/30/23 10:27	04/03/23 17:55	1
N-Nitrosodimethylamine	ND		0.20	0.18	ug/L		03/30/23 10:27	04/03/23 17:55	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		03/30/23 10:27	04/03/23 17:55	1
N-Nitrosodiphenylamine	ND		0.20	0.10	ug/L		03/30/23 10:27	04/03/23 17:55	1
Pentachlorophenol	ND		0.98	0.83	ug/L		03/30/23 10:27	04/03/23 17:55	1
Phenanthrene	ND		0.20	0.16	ug/L		03/30/23 10:27	04/03/23 17:55	1
Phenol	ND		0.98	0.52	ug/L		03/30/23 10:27	04/03/23 17:55	1
Pyrene	ND		0.20	0.084	ug/L		03/30/23 10:27	04/03/23 17:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,9-Trimro: ophenol	*86*		*2z - 127*	*603063 20 16/27*	*643603 20 17/bb*	*1*
2-Fluoromiphenyl (Surr)	*b6*		*01 - 126*	*603063 20 16/27*	*643603 20 17/bb*	*1*
2-Fluorophenol	*2z*		*17 - 126*	*603063 20 16/27*	*643603 20 17/bb*	*1*
Nitromenf ene-db	*48*		*27 - 126*	*603063 20 16/27*	*643603 20 17/bb*	*1*
Phenol-d9 (Surr)	*21*		*16 - 126*	*603063 20 16/27*	*643603 20 17/bb*	*1*
p-Terphenyl-d14 (Surr)	*z1*		*4b - 126*	*603063 20 16/27*	*643603 20 17/bb*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/31/23 14:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*77*		*26 - 144*		*03/31/23 14:17*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/29/23 21:24	04/01/23 20:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*167*		*b0 - 1b1*	*603283 20 21/24*	*643513 20 26/28*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.033	J,DX	0.20	0.019	ug/L			03/24/23 06:29	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.032	J,DX	0.20	0.019	ug/L			03/24/23 08:05	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**59**		1.0	0.36	mg/L			03/24/23 07:49	1
Nitrite as N	ND		0.10	0.043	mg/L			03/24/23 07:49	1
Fluoride	**0.93**		0.10	0.046	mg/L			03/24/23 07:49	1
Nitrate as N	**3.4**		0.10	0.020	mg/L			03/24/23 07:49	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: EPA 300.0 - Anions, Ion Chromatography - DL

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	720		10	2.4	mg/L			03/24/23 09:29	10

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/25/23 04:19	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	3.4		0.10	0.020	mg/L			04/05/23 12:20	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.90		0.50	0.0035	mg/L		03/27/23 08:29	03/28/23 12:24	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.86	BU	0.50	0.0035	mg/L			03/27/23 18:08	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**10000**		150	86	ug/L		03/27/23 08:51	03/27/23 13:30	10
Silver	ND		1.0	0.23	ug/L		03/27/23 08:51	03/27/23 13:12	1
Arsenic	**7.3**		1.0	0.16	ug/L		03/27/23 08:51	03/27/23 13:12	1
Barium	**210**		1.0	0.17	ug/L		03/27/23 08:51	03/27/23 13:12	1
Beryllium	**0.86**		0.50	0.26	ug/L		03/27/23 08:51	03/29/23 09:13	1
Cadmium	**3.9**		1.0	0.13	ug/L		03/27/23 08:51	03/27/23 13:12	1
Chromium	**22**		2.0	0.14	ug/L		03/27/23 08:51	03/27/23 13:12	1
Cobalt	**9.7**		1.0	0.14	ug/L		03/27/23 08:51	03/27/23 13:12	1
Copper	**29**		2.0	0.32	ug/L		03/27/23 08:51	03/27/23 13:12	1
Iron	**21000**		20	3.7	ug/L		03/27/23 08:51	03/27/23 13:12	1
Manganese	**450**	**MB**	1.0	0.41	ug/L		03/27/23 08:51	03/27/23 13:12	1
Nickel	**55**		2.0	0.17	ug/L		03/27/23 08:51	03/27/23 13:12	1
Lead	**8.9**		1.0	0.12	ug/L		03/27/23 08:51	03/27/23 13:12	1
Antimony	**1.3**	**J,DX**	2.0	0.36	ug/L		03/27/23 08:51	03/27/23 13:12	1
Zinc	**77**		20	2.8	ug/L		03/27/23 08:51	03/27/23 13:12	1
Selenium	**25**		2.0	0.52	ug/L		03/27/23 08:51	03/27/23 13:12	1
Thallium	**0.32**	**J,DX**	1.0	0.11	ug/L		03/27/23 08:51	03/27/23 13:12	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND	BU	15	8.6	ug/L			03/27/23 10:37	1
Silver	ND	BU	1.0	0.23	ug/L			03/27/23 10:37	1
Arsenic	**1.3**	**BU**	1.0	0.16	ug/L			03/27/23 10:37	1
Barium	**59**	**BU**	1.0	0.17	ug/L			03/27/23 10:37	1
Beryllium	ND	BU IB LQ	0.50	0.26	ug/L			03/27/23 10:37	1
Cadmium	**0.22**	**J,DX BU**	1.0	0.13	ug/L			03/27/23 10:37	1
Chromium	**0.60**	**J,DX BU**	2.0	0.14	ug/L			03/27/23 10:37	1
Cobalt	**0.43**	**J,DX BU**	1.0	0.14	ug/L			03/27/23 10:37	1
Copper	**3.1**	**BU**	2.0	0.32	ug/L			03/27/23 10:37	1
Iron	**11**	**J,DX BU**	20	3.7	ug/L			03/27/23 10:37	1
Manganese	**29**	**BU**	1.0	0.41	ug/L			03/27/23 10:37	1
Nickel	**21**	**BU**	2.0	0.17	ug/L			03/27/23 10:37	1
Thallium	ND	BU	1.0	0.11	ug/L			03/27/23 10:37	1
Lead	ND	BU	1.0	0.12	ug/L			03/27/23 10:37	1
Antimony	**0.93**	**J,DX BU**	2.0	0.36	ug/L			03/27/23 10:37	1
Zinc	ND	BU	20	2.8	ug/L			03/27/23 10:37	1
Selenium	**24**	**BU**	2.0	0.52	ug/L			03/27/23 10:37	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	940		7.1	0.50	mg/L			03/30/23 19:07	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	850		7.1	0.50	mg/L			03/29/23 19:06	1

General Chemistry

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	**0.78**	**J,DX**	0.97	0.50	mg/L		03/29/23 09:20	03/29/23 13:42	1
Cr (III) (EPA 218.6 CR3)	**0.022**	**J,DX**	0.050	0.0030	mg/L			04/05/23 15:09	1
Ammonia (EPA 350.1)	**0.047**	**J,DX**	0.075	0.032	mg/L		04/04/23 10:15	04/04/23 12:35	1
Cyanide, Total (EPA Kelada 01)	ND		5.0	2.5	ug/L			03/29/23 15:34	1
Turbidity (SM 2130B)	**390**		0.05	0.05	NTU			03/24/23 17:20	1
Total Dissolved Solids (SM 2540C)	**1600**		20	17	mg/L			03/29/23 13:29	1
Total Suspended Solids (SM 2540D)	**620**		10	8.3	mg/L			03/29/23 18:17	1
Biochemical Oxygen Demand (SM 5210B)	ND		2.0	1.0	mg/L		03/24/23 11:11	03/24/23 12:02	1
Carbon, Total Organic (SM 5310D)	**14**		4.0	2.1	mg/L			04/06/23 23:34	8
MBAS (SM 5540C)	**0.052**	**J,DX**	0.20	0.050	mg/L		03/24/23 16:43	03/24/23 17:28	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**1800**		1.0	1.0	umhos/cm			03/30/23 16:38	1
Settleable Solids (SM 2540F)	**2.0**		0.10	0.10	mL/L			03/24/23 16:35	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

General Chemistry - Dissolved

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cr (III) (EPA 218.6 CR3)	ND		0.050	0.0030	mg/L			04/05/23 15:22	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**18.08**		0.01	0.01	%			04/05/23 08:17	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			04/05/23 08:17	1
Fine Sand (0.125 to 0.25mm)	**8.57**		0.01	0.01	%			04/05/23 08:17	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			04/05/23 08:17	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			04/05/23 08:17	1
Silt (0.00391 to 0.0625mm)	**59.90**		0.01	0.01	%			04/05/23 08:17	1
Total Silt and Clay (0 to 0.0626mm)	**77.98**		0.01	0.01	%			04/05/23 08:17	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			04/05/23 08:17	1
Very Fine Sand (0.0625 to 0.125 mm)	**13.45**		0.01	0.01	%			04/05/23 08:17	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

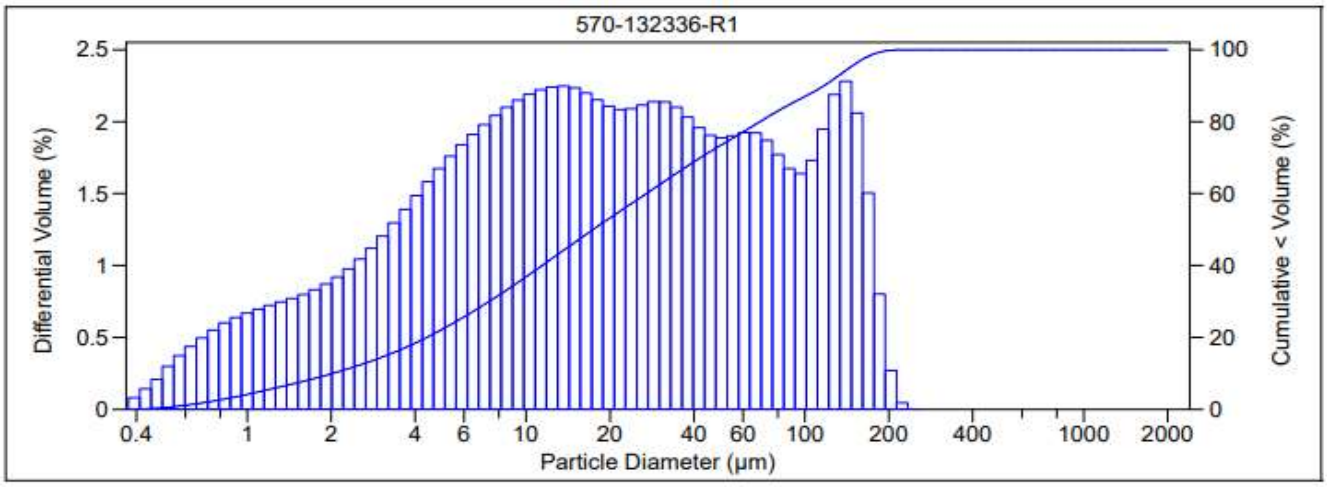
Haley & Aldrich, Inc.

Date Sampled:	03/23/23
Date Received:	03/23/23
Work Order No:	570-132336
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBLLC_20230323		Silt	0.038

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	8.57	13.45	59.90	18.08	77.98



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

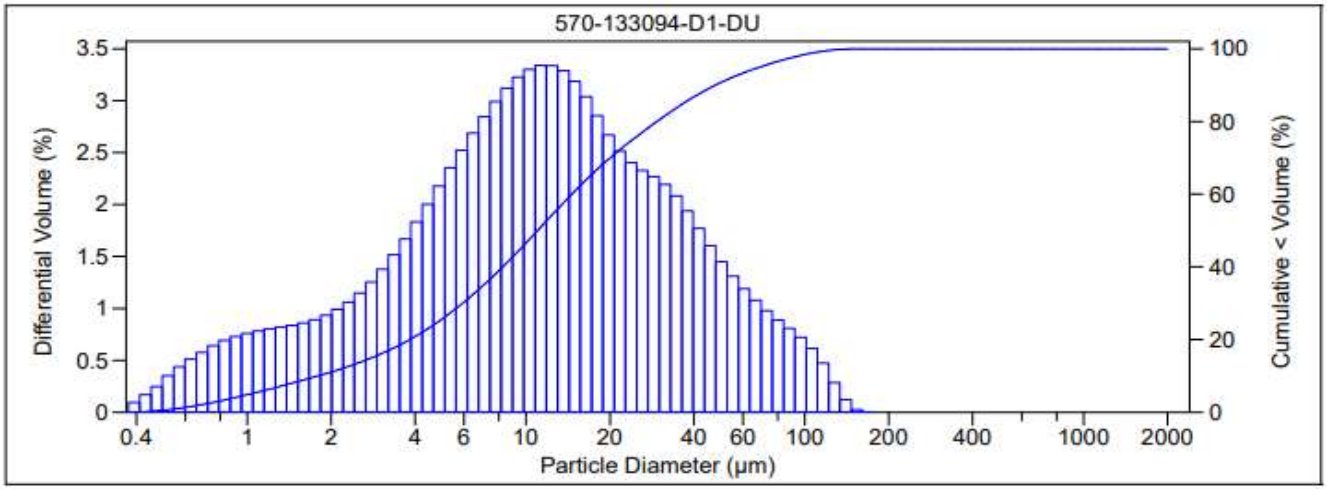
Enthalpy Analytical LLC

Date Sampled:	03/29/23
Date Received:	03/30/23
Work Order No:	570-133094
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: 482457

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230329		Silt	0.019

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.36	5.83	73.42	20.39	93.81



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

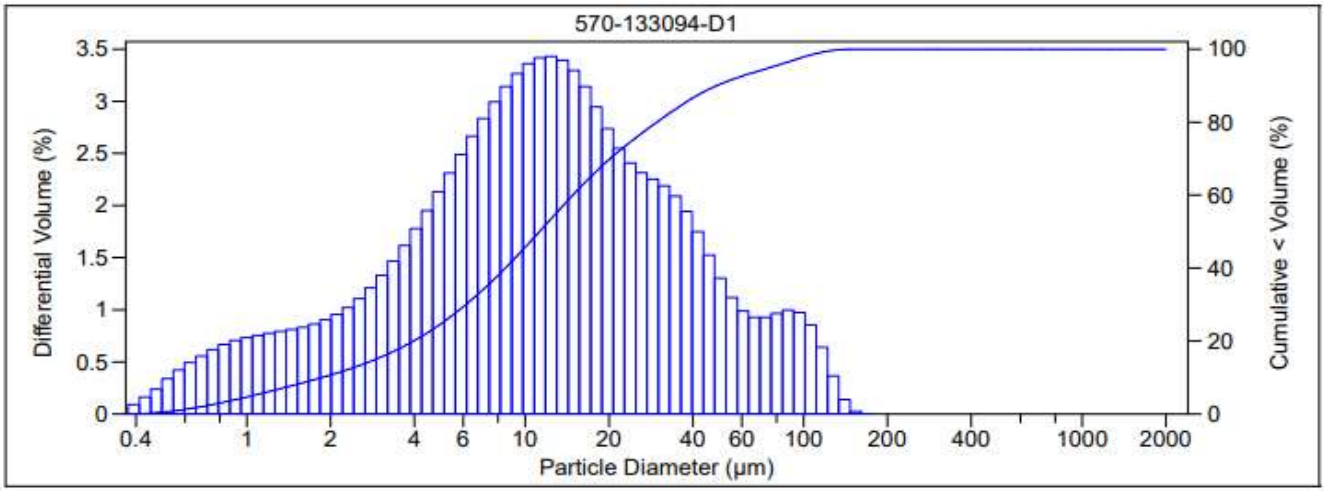
Enthalpy Analytical LLC

Date Sampled:	03/29/23
Date Received:	03/30/23
Work Order No:	570-133094
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: 482457

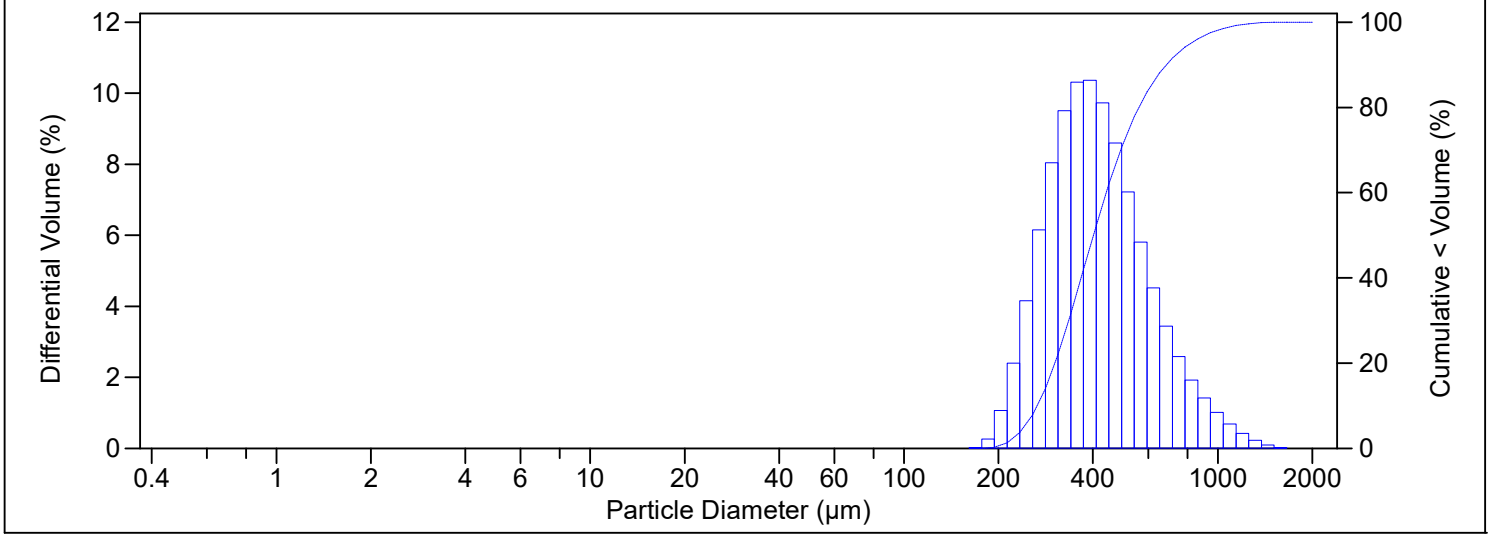
Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230329		Silt	0.020

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.44	6.54	73.33	19.69	93.02



V 3.0

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.27.17.$ls STD SAND_ 5 Apr 2023_11.27.17.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	17 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.71%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:26 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.27.17.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	446.6 µm	S.D.:	184.8 µm
Median:	401.6 µm	Variance:	34149 μm^2
Mean/Median ratio:	1.112	Skewness:	1.650 Right skewed
Mode:	391.0 µm	Kurtosis:	3.726 Leptokurtic

d_{10}: 265.5 µm d_{50}: 401.6 µm d_{90}: 687.4 µm

Folk and Ward Statistics (Phi)

Mean:	1.28	Median:	1.32	Deviation:	0.53
Skewness:	-0.13	Kurtosis:	1.01		

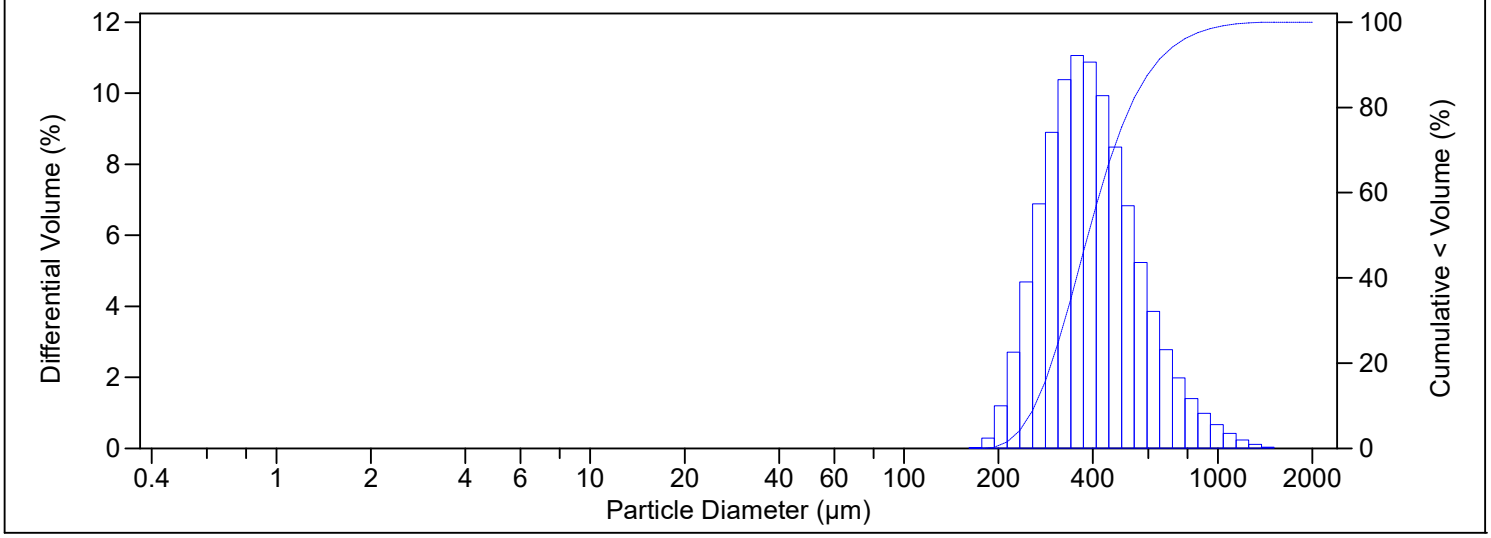
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
241.0 µm	288.7 µm	318.9 µm	367.0 µm	401.6 µm	523.0 µm	599.7 µm	820.0 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.27.17 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.64
250	64.9
500	26.5
1000	1.92
2000	

STD SAND_ 5 Apr 2023_11.27.17.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.42
0.412	0	22.73	0	1255	0.23
0.452	0	24.95	0	1377	0.099
0.496	0	27.39	0	1512	0.021
0.545	0	30.07	0	1660	0.0010
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.016		
3.206	0	176.9	0.26		
3.519	0	194.2	1.07		
3.863	0	213.2	2.40		
4.241	0	234.1	4.16		
4.656	0	256.9	6.15		
5.111	0	282.1	8.04		
5.611	0	309.6	9.51		
6.159	0	339.9	10.3		
6.761	0	373.1	10.4		
7.422	0	409.6	9.73		
8.148	0	449.7	8.60		
8.944	0	493.6	7.22		
9.819	0	541.9	5.81		
10.78	0	594.9	4.52		
11.83	0	653.0	3.44		
12.99	0	716.9	2.58		
14.26	0	786.9	1.93		
15.65	0	863.9	1.42		
17.18	0	948.3	1.02		
18.86	0	1041	0.69		

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.55.13.$ls STD SAND_ 5 Apr 2023_11.55.13.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	19 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.77%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:54 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	10%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.55.13.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	423.4 µm	S.D.:	164.0 µm
Median:	386.1 µm	Variance:	26894 µm^2
Mean/Median ratio:	1.097	Skewness:	1.674 Right skewed
Mode:	356.1 µm	Kurtosis:	4.130 Leptokurtic

d_{10}: 260.9 µm d_{50}: 386.1 µm d_{90}: 632.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.34	Median:	1.37	Deviation:	0.50
Skewness:	-0.12	Kurtosis:	1.02		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
237.9 µm	282.7 µm	310.5 µm	354.7 µm	386.1 µm	491.4 µm	559.5 µm	747.2 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.55.13 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.49
250	68.8
500	22.6
1000	1.11
2000	

STD SAND_ 5 Apr 2023_11.55.13.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.23
0.412	0	22.73	0	1255	0.12
0.452	0	24.95	0	1377	0.040
0.496	0	27.39	0	1512	0.0034
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.017		
3.206	0	176.9	0.29		
3.519	0	194.2	1.20		
3.863	0	213.2	2.71		
4.241	0	234.1	4.69		
4.656	0	256.9	6.88		
5.111	0	282.1	8.90		
5.611	0	309.6	10.4		
6.159	0	339.9	11.1		
6.761	0	373.1	10.9		
7.422	0	409.6	9.93		
8.148	0	449.7	8.48		
8.944	0	493.6	6.83		
9.819	0	541.9	5.23		
10.78	0	594.9	3.86		
11.83	0	653.0	2.78		
12.99	0	716.9	1.98		
14.26	0	786.9	1.41		
15.65	0	863.9	0.98		
17.18	0	948.3	0.67		
18.86	0	1041	0.42		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-132336-1	EPBLLC_20230323	94	105	85	103
570-132336-2	TB-20230323-1	104	102	92	102
LCS 570-314233/1004	Lab Control Sample	111	105	92	101
LCSD 570-314233/5	Lab Control Sample Dup	106	105	92	105
MB 570-314233/7	Method Blank	104	99	92	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		14DCBTN
Lab Sample ID	Client Sample ID	(67-133)
570-132336-1	EPBLLC_20230323	122
LCS 570-314624/4	Lab Control Sample	109
LCSD 570-314624/5	Lab Control Sample Dup	107
MB 570-314624/8	Method Blank	107

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-132336-1	EPBLLC_20230323	90	50	28	49	21	81
LCS 570-316081/2-A	Lab Control Sample	96	69	42	66	29	89
LCSD 570-316081/3-A	Lab Control Sample Dup	100	72	44	68	30	90
MB 570-316081/1-A	Method Blank	60	42	29	47	19	75

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(20-144)
570-132336-1	EPBLLC_20230323	77

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**BFB1 (20-144)**
LCS 570-316426/3	Lab Control Sample	84
LCSD 570-316426/4	Lab Control Sample Dup	87
MB 570-316426/5	Method Blank	77

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	**Client Sample ID**	**OTCSN1 (53-151)**
570-132336-1	EPBLLC_20230323	107
LCS 570-315947/2-A	Lab Control Sample	99
LCSD 570-315947/3-A	Lab Control Sample Dup	105
MB 570-315947/1-A	Method Blank	102

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-314233/7
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/23/23 18:36	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/23/23 18:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/23/23 18:36	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/23/23 18:36	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/23/23 18:36	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/23/23 18:36	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/23/23 18:36	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/23/23 18:36	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/23/23 18:36	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/23/23 18:36	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/23/23 18:36	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/23/23 18:36	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/23/23 18:36	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/23/23 18:36	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/23/23 18:36	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/23/23 18:36	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/23/23 18:36	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/23/23 18:36	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/23/23 18:36	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/23/23 18:36	1
2-Hexanone	ND		5.0	2.2	ug/L			03/23/23 18:36	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/23/23 18:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/23/23 18:36	1
Acetone	ND		20	16	ug/L			03/23/23 18:36	1
Acrolein	ND		5.0	4.6	ug/L			03/23/23 18:36	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/23/23 18:36	1
Benzene	ND		0.50	0.28	ug/L			03/23/23 18:36	1
Bromobenzene	ND		0.50	0.23	ug/L			03/23/23 18:36	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Bromoform	ND		1.0	0.25	ug/L			03/23/23 18:36	1
Bromomethane	ND		0.50	0.22	ug/L			03/23/23 18:36	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/23/23 18:36	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/23/23 18:36	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Chloroethane	ND		1.0	0.29	ug/L			03/23/23 18:36	1
Chloroform	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Chloromethane	ND		0.50	0.30	ug/L			03/23/23 18:36	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/23/23 18:36	1
Cyclohexane	ND		2.0	0.79	ug/L			03/23/23 18:36	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-314233/7
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	ND		0.50	0.15	ug/L			03/23/23 18:36	1
Dibromomethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/23/23 18:36	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Ethanol	ND		100	65	ug/L			03/23/23 18:36	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/23/23 18:36	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/23/23 18:36	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Isopropanol	ND		250	120	ug/L			03/23/23 18:36	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/23/23 18:36	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/23/23 18:36	1
Naphthalene	ND		1.0	0.33	ug/L			03/23/23 18:36	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/23/23 18:36	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/23/23 18:36	1
o-Xylene	ND		0.50	0.15	ug/L			03/23/23 18:36	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/23/23 18:36	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/23/23 18:36	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/23/23 18:36	1
Styrene	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/23/23 18:36	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/23/23 18:36	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/23/23 18:36	1
Toluene	ND		0.50	0.23	ug/L			03/23/23 18:36	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/23/23 18:36	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/23/23 18:36	1
Trichloroethene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/23/23 18:36	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/23/23 18:36	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/23/23 18:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*194*		*39 - 149*		*03/23/23 18:36*	*1*
4-5roB omuorof enbene (Surr)	*: :*		*39 - 149*		*03/23/23 18:36*	*1*
Dif roB omuoroB ethane (Surr)	*: 2*		*39 - 149*		*03/23/23 18:36*	*1*
zoluene-d/ (Surr)	*191*		*39 - 149*		*03/23/23 18:36*	*1*

Lab Sample ID: LCS 570-314233/1004
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.9		ug/L		109	60 - 140
1,1,1-Trichloroethane	10.0	11.1		ug/L		111	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.36		ug/L		94	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	7.90		ug/L		79	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-314233/1004
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	10.0	9.95		ug/L		100	70 - 130
1,1-Dichloroethane	10.0	11.9		ug/L		119	70 - 130
1,1-Dichloroethene	10.0	10.7		ug/L		107	50 - 150
1,1-Dichloropropene	10.0	10.3		ug/L		103	60 - 140
1,2,3-Trichlorobenzene	10.0	9.96		ug/L		100	60 - 140
1,2,3-Trichloropropane	10.0	10.1		ug/L		101	60 - 140
1,2,4-Trichlorobenzene	10.0	10.0		ug/L		100	60 - 140
1,2,4-Trimethylbenzene	10.0	9.65		ug/L		96	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	9.56		ug/L		96	60 - 140
1,2-Dibromoethane	10.0	10.4		ug/L		104	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	9.04		ug/L		90	60 - 140
1,2-Dichlorobenzene	10.0	9.91		ug/L		99	65 - 135
1,2-Dichloroethane	10.0	12.4		ug/L		124	70 - 130
1,2-Dichloropropane	10.0	12.7		ug/L		127	35 - 165
1,3,5-Trimethylbenzene	10.0	11.1		ug/L		111	60 - 140
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,3-Dichloropropane	10.0	10.5		ug/L		105	60 - 140
1,4-Dichlorobenzene	10.0	10.4		ug/L		104	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	8.77	J,DX	ug/L		88	60 - 140
2,2-Dichloropropane	10.0	12.0		ug/L		120	60 - 140
2-Butanone (MEK)	10.0	9.31		ug/L		93	60 - 140
2-Chloroethyl vinyl ether	10.0	9.23		ug/L		92	1 - 225
2-Chlorotoluene	10.0	11.5		ug/L		115	60 - 140
2-Hexanone	10.0	9.36		ug/L		94	60 - 140
4-Chlorotoluene	10.0	10.4		ug/L		104	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	12.6		ug/L		126	60 - 140
Acetone	10.0	ND		ug/L		99	60 - 140
Acrolein	20.0	20.6		ug/L		103	60 - 140
Acrylonitrile	10.0	14.0		ug/L		140	60 - 140
Benzene	10.0	10.7		ug/L		107	65 - 135
Bromobenzene	10.0	11.5		ug/L		115	60 - 140
Bromochloromethane	10.0	10.7		ug/L		107	60 - 140
Bromodichloromethane	10.0	11.1		ug/L		111	65 - 135
Bromoform	10.0	10.8		ug/L		108	70 - 130
Bromomethane	10.0	11.6		ug/L		116	15 - 185
Carbon disulfide	10.0	8.29		ug/L		83	60 - 140
Carbon tetrachloride	10.0	10.4		ug/L		104	70 - 130
Chlorobenzene	10.0	11.0		ug/L		110	65 - 135
Chloroethane	10.0	9.95		ug/L		99	40 - 160
Chloroform	10.0	10.5		ug/L		105	70 - 135
Chloromethane	10.0	12.0		ug/L		120	1 - 205
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	60 - 140
cis-1,3-Dichloropropene	10.0	10.8		ug/L		108	25 - 175
Cyclohexane	10.0	9.61		ug/L		96	60 - 140
Dibromochloromethane	10.0	11.0		ug/L		110	70 - 135
Dibromomethane	10.0	11.0		ug/L		110	60 - 140
Dichlorodifluoromethane	10.0	10.3		ug/L		103	60 - 140
Di-isopropyl ether (DIPE)	10.0	12.7		ug/L		127	60 - 140
Ethanol	100	97.3	J,DX	ug/L		97	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-314233/1004
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	13.0		ug/L		130	60 - 140
Ethylbenzene	10.0	11.2		ug/L		112	60 - 140
Hexachloro-1,3-butadiene	10.0	10.9		ug/L		109	60 - 140
Isopropanol	50.0	ND		ug/L		107	60 - 140
Isopropylbenzene	10.0	11.3		ug/L		113	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	10.1		ug/L		101	60 - 140
Methylene Chloride	10.0	9.43		ug/L		94	60 - 140
Naphthalene	10.0	10.2		ug/L		102	60 - 140
n-Butylbenzene	10.0	10.9		ug/L		109	60 - 140
N-Propylbenzene	10.0	11.7		ug/L		117	60 - 140
o-Xylene	10.0	11.3		ug/L		113	60 - 140
m,p-Xylene	20.0	23.7		ug/L		118	60 - 140
p-Isopropyltoluene	10.0	10.3		ug/L		103	60 - 140
sec-Butylbenzene	10.0	10.5		ug/L		105	60 - 140
Styrene	10.0	11.1		ug/L		111	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	10.7		ug/L		107	60 - 140
tert-Butyl alcohol (TBA)	50.0	55.3		ug/L		111	60 - 140
tert-Butylbenzene	10.0	10.8		ug/L		108	60 - 140
Tetrachloroethene	10.0	11.6		ug/L		116	70 - 130
Tetrahydrofuran	10.0	12.1		ug/L		121	60 - 140
Toluene	10.0	11.0		ug/L		110	70 - 130
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
trans-1,3-Dichloropropene	10.0	10.4		ug/L		104	50 - 150
Trichloroethene	10.0	10.9		ug/L		109	65 - 135
Trichlorofluoromethane	10.0	10.5		ug/L		105	50 - 150
Vinyl acetate	10.0	11.5		ug/L		115	60 - 140
Vinyl chloride	10.0	11.0		ug/L		110	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*39 - 149*
4-5roB orhuorof enbene (Surr)	*198*		*39 - 149*
Dif roB orhuoroB ethane (Surr)	*: 2*		*39 - 149*
zoluene-d/ (Surr)	*191*		*39 - 149*

Lab Sample ID: LCSD 570-314233/5
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	10.0	11.1		ug/L		111	60 - 140	1	30
1,1,1-Trichloroethane	10.0	11.1		ug/L		111	70 - 130	1	36
1,1,2,2-Tetrachloroethane	10.0	9.50		ug/L		95	60 - 140	2	61
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	9.65		ug/L		97	60 - 140	20	30
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	70 - 130	2	45
1,1-Dichloroethane	10.0	11.9		ug/L		119	70 - 130	0	40
1,1-Dichloroethene	10.0	10.9		ug/L		109	50 - 150	1	32
1,1-Dichloropropene	10.0	10.5		ug/L		105	60 - 140	2	30
1,2,3-Trichlorobenzene	10.0	10.5		ug/L		105	60 - 140	6	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-314233/5
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,3-Trichloropropane			10.0	9.96		ug/L		100	60 - 140	2	30
1,2,4-Trichlorobenzene			10.0	10.8		ug/L		108	60 - 140	8	30
1,2,4-Trimethylbenzene			10.0	10.2		ug/L		102	60 - 140	5	30
1,2-Dibromo-3-Chloropropane			10.0	9.93		ug/L		99	60 - 140	4	30
1,2-Dibromoethane			10.0	10.3		ug/L		103	60 - 140	1	30
1,2-Dichloro-1,1,2-trifluoroethane			10.0	9.51		ug/L		95	60 - 140	5	30
1,2-Dichlorobenzene			10.0	10.3		ug/L		103	65 - 135	4	57
1,2-Dichloroethane			10.0	12.5		ug/L		125	70 - 130	1	49
1,2-Dichloropropane			10.0	12.7		ug/L		127	35 - 165	0	55
1,3,5-Trimethylbenzene			10.0	11.4		ug/L		114	60 - 140	2	30
1,3-Dichlorobenzene			10.0	10.7		ug/L		107	70 - 130	3	43
1,3-Dichloropropane			10.0	10.4		ug/L		104	60 - 140	1	30
1,4-Dichlorobenzene			10.0	10.8		ug/L		108	65 - 135	4	57
2,2-Dichloro-1,1,1-trifluoroethane			10.0	9.03	J,DX	ug/L		90	60 - 140	3	30
2,2-Dichloropropane			10.0	12.1		ug/L		121	60 - 140	1	30
2-Butanone (MEK)			10.0	7.93		ug/L		79	60 - 140	16	30
2-Chloroethyl vinyl ether			10.0	8.53		ug/L		85	1 - 225	8	71
2-Chlorotoluene			10.0	11.5		ug/L		115	60 - 140	1	30
2-Hexanone			10.0	11.1		ug/L		111	60 - 140	17	30
4-Chlorotoluene			10.0	11.0		ug/L		110	60 - 140	5	30
4-Methyl-2-pentanone (MIBK)			10.0	13.1		ug/L		131	60 - 140	4	30
Acetone			10.0	ND		ug/L		113	60 - 140	13	30
Acrolein			20.0	18.9		ug/L		95	60 - 140	8	60
Acrylonitrile			10.0	12.3		ug/L		123	60 - 140	13	60
Benzene			10.0	11.1		ug/L		111	65 - 135	3	61
Bromobenzene			10.0	11.4		ug/L		114	60 - 140	1	30
Bromochloromethane			10.0	10.3		ug/L		103	60 - 140	4	30
Bromodichloromethane			10.0	11.4		ug/L		114	65 - 135	2	56
Bromoform			10.0	10.9		ug/L		109	70 - 130	1	42
Bromomethane			10.0	10.7		ug/L		107	15 - 185	7	61
Carbon disulfide			10.0	10.2		ug/L		102	60 - 140	21	30
Carbon tetrachloride			10.0	11.0		ug/L		110	70 - 130	6	41
Chlorobenzene			10.0	11.1		ug/L		111	65 - 135	2	53
Chloroethane			10.0	9.15		ug/L		91	40 - 160	8	78
Chloroform			10.0	9.96		ug/L		100	70 - 135	5	30
Chloromethane			10.0	11.5		ug/L		115	1 - 205	4	60
cis-1,2-Dichloroethene			10.0	10.6		ug/L		106	60 - 140	0	30
cis-1,3-Dichloropropene			10.0	11.3		ug/L		113	25 - 175	4	58
Cyclohexane			10.0	10.8		ug/L		108	60 - 140	12	30
Dibromochloromethane			10.0	10.9		ug/L		109	70 - 135	1	50
Dibromomethane			10.0	11.3		ug/L		113	60 - 140	3	30
Dichlorodifluoromethane			10.0	7.99		ug/L		80	60 - 140	25	30
Di-isopropyl ether (DIPE)			10.0	12.3		ug/L		123	60 - 140	3	30
Ethanol			100	117		ug/L		117	60 - 140	18	30
Ethyl-t-butyl ether (ETBE)			10.0	12.6		ug/L		126	60 - 140	3	30
Ethylbenzene			10.0	11.6		ug/L		116	60 - 140	3	63
Hexachloro-1,3-butadiene			10.0	11.7		ug/L		117	60 - 140	7	30
Isopropanol			50.0	ND		ug/L		92	60 - 140	16	30
Isopropylbenzene			10.0	11.6		ug/L		116	60 - 140	2	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-314233/5
Matrix: Water
Analysis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	9.74		ug/L		97	60 - 140	4	30
Methylene Chloride	10.0	9.50		ug/L		95	60 - 140	1	28
Naphthalene	10.0	10.4		ug/L		104	60 - 140	2	30
n-Butylbenzene	10.0	11.4		ug/L		114	60 - 140	4	30
N-Propylbenzene	10.0	12.2		ug/L		122	60 - 140	4	30
o-Xylene	10.0	11.5		ug/L		115	60 - 140	2	30
m,p-Xylene	20.0	23.8		ug/L		119	60 - 140	1	30
p-Isopropyltoluene	10.0	10.8		ug/L		108	60 - 140	4	30
sec-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	5	30
Styrene	10.0	11.0		ug/L		110	60 - 140	1	30
Tert-amyl-methyl ether (TAME)	10.0	10.6		ug/L		106	60 - 140	1	30
tert-Butyl alcohol (TBA)	50.0	67.4		ug/L		135	60 - 140	20	30
tert-Butylbenzene	10.0	11.3		ug/L		113	60 - 140	4	30
Tetrachloroethene	10.0	11.9		ug/L		119	70 - 130	3	39
Tetrahydrofuran	10.0	11.5		ug/L		115	60 - 140	5	30
Toluene	10.0	11.2		ug/L		112	70 - 130	2	41
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130	3	45
trans-1,3-Dichloropropene	10.0	11.0		ug/L		110	50 - 150	5	86
Trichloroethene	10.0	11.8		ug/L		118	65 - 135	8	48
Trichlorofluoromethane	10.0	8.44		ug/L		84	50 - 150	22	84
Vinyl acetate	10.0	11.2		ug/L		112	60 - 140	3	30
Vinyl chloride	10.0	9.50		ug/L		95	5 - 195	15	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*193*		*39 - 149*
4-5roB orhuorof enbene (Surr)	*198*		*39 - 149*
Dif roB orhuoroB ethane (Surr)	*: 2*		*39 - 149*
zoluene-d/ (Surr)	*198*		*39 - 149*

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-314624/8
Matrix: Water
Analysis Batch: 314624

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/24/23 20:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorof utane (Surr)	*19T*		*3T - 166*		*960240 26 297 93*	*1*

Lab Sample ID: LCS 570-314624/4
Matrix: Water
Analysis Batch: 314624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	20.0	18.3		ug/L		91	75 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-314624/4
Matrix: Water
Analysis Batch: 314624

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dichlorof utane (Surr)	*19:*		*3T - 166*

Lab Sample ID: LCSD 570-314624/5
Matrix: Water
Analysis Batch: 314624

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane			20.0	17.5		ug/L		88	75 - 120	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Dichlorof utane (Surr)	*19T*		*3T - 166*

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-316081/1-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316081

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		03/30/23 10:27	03/31/23 14:39	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		03/30/23 10:27	03/31/23 14:39	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/30/23 10:27	03/31/23 14:39	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		03/30/23 10:27	03/31/23 14:39	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
2-Chlorophenol	ND		0.20	0.096	ug/L		03/30/23 10:27	03/31/23 14:39	1
2-Nitrophenol	ND		5.0	3.5	ug/L		03/30/23 10:27	03/31/23 14:39	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		03/30/23 10:27	03/31/23 14:39	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		03/30/23 10:27	03/31/23 14:39	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		03/30/23 10:27	03/31/23 14:39	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		03/30/23 10:27	03/31/23 14:39	1
4-Nitrophenol	ND		5.0	3.4	ug/L		03/30/23 10:27	03/31/23 14:39	1
Acenaphthene	ND		0.20	0.098	ug/L		03/30/23 10:27	03/31/23 14:39	1
Acenaphthylene	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
Anthracene	ND		0.20	0.084	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzidine	ND		5.0	2.7	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzo[a]pyrene	0.172	J,DX	0.20	0.15	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzo[b]fluoranthene	0.145	J,DX	0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-316081/1-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316081

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		03/30/23 10:27	03/31/23 14:39	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/30/23 10:27	03/31/23 14:39	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		03/30/23 10:27	03/31/23 14:39	1
Chrysene	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		03/30/23 10:27	03/31/23 14:39	1
Diethyl phthalate	0.195	J,DX	2.0	0.18	ug/L		03/30/23 10:27	03/31/23 14:39	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		03/30/23 10:27	03/31/23 14:39	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		03/30/23 10:27	03/31/23 14:39	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		03/30/23 10:27	03/31/23 14:39	1
Fluoranthene	ND		0.20	0.10	ug/L		03/30/23 10:27	03/31/23 14:39	1
Fluorene	ND		0.20	0.095	ug/L		03/30/23 10:27	03/31/23 14:39	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		03/30/23 10:27	03/31/23 14:39	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		03/30/23 10:27	03/31/23 14:39	1
Hexachloroethane	ND		0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
Indeno[1,2,3-cd]pyrene	0.149	J,DX	0.20	0.13	ug/L		03/30/23 10:27	03/31/23 14:39	1
Isophorone	ND		0.20	0.099	ug/L		03/30/23 10:27	03/31/23 14:39	1
Naphthalene	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Nitrobenzene	ND		0.20	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/30/23 10:27	03/31/23 14:39	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		03/30/23 10:27	03/31/23 14:39	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		03/30/23 10:27	03/31/23 14:39	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/30/23 10:27	03/31/23 14:39	1
Phenanthrene	ND		0.20	0.16	ug/L		03/30/23 10:27	03/31/23 14:39	1
Phenol	ND		1.0	0.52	ug/L		03/30/23 10:27	03/31/23 14:39	1
Pyrene	ND		0.20	0.086	ug/L		03/30/23 10:27	03/31/23 14:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,3-zrif roB ophenol	*39*		*2/ - 12T*	*960690260197 2T*	*960610260147 6:*	*1*
2-Fluorof iphenyl (Surr)	*42*		*61 - 129*	*960690260197 2T*	*960610260147 6:*	*1*
2-Fluorophenol	*2:*		*1T - 129*	*960690260197 2T*	*960610260147 6:*	*1*
Nitrof enbene-d8	*4T*		*2T - 129*	*960690260197 2T*	*960610260147 6:*	*1*
Phenol-d3 (Surr)	*1:*		*19 - 129*	*960690260197 2T*	*960610260147 6:*	*1*
p-zerphenyl-d14 (Surr)	*T8*		*48 - 129*	*960690260197 2T*	*960610260147 6:*	*1*

Lab Sample ID: LCS 570-316081/2-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316081

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,4-Trichlorobenzene	20.0	10.9	LR	ug/L		55	57 - 130
1,2-Dichlorobenzene	20.0	11.7		ug/L		59	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	16.8		ug/L		84	60 - 115
1,3-Dichlorobenzene	20.0	11.0		ug/L		55	37 - 120
1,4-Dichlorobenzene	20.0	11.6		ug/L		58	39 - 120
2,4,6-Trichlorophenol	20.0	16.8		ug/L		84	52 - 129

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-316081/2-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316081

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,4-Dichlorophenol	20.0	14.9		ug/L		74	53 - 122
2,4-Dimethylphenol	20.0	15.0		ug/L		75	42 - 120
2,4-Dinitrophenol	20.0	13.3		ug/L		67	1 - 173
2,4-Dinitrotoluene	20.0	20.4		ug/L		102	48 - 127
2,6-Dinitrotoluene	20.0	19.9		ug/L		100	68 - 137
2-Chloronaphthalene	20.0	13.5		ug/L		67	65 - 120
2-Chlorophenol	20.0	14.4		ug/L		72	36 - 120
2-Nitrophenol	20.0	15.8		ug/L		79	45 - 167
3,3'-Dichlorobenzidine	20.0	18.7		ug/L		94	8 - 213
4,6-Dinitro-2-methylphenol	20.0	19.0		ug/L		95	53 - 130
4-Bromophenyl phenyl ether	20.0	15.5		ug/L		78	65 - 120
4-Chloro-3-methylphenol	20.0	15.4		ug/L		77	41 - 128
4-Chlorophenyl phenyl ether	20.0	15.2		ug/L		76	38 - 145
4-Nitrophenol	20.0	8.20		ug/L		41	13 - 129
Acenaphthene	20.0	14.6		ug/L		73	60 - 132
Acenaphthylene	20.0	17.5		ug/L		88	54 - 126
Anthracene	20.0	18.5		ug/L		93	43 - 120
Benzidine	20.0	6.41		ug/L		32	20 - 164
Benzo[a]anthracene	20.0	19.2		ug/L		96	42 - 133
Benzo[a]pyrene	20.0	20.8		ug/L		104	32 - 148
Benzo[b]fluoranthene	20.0	19.2		ug/L		96	42 - 140
Benzo[g,h,i]perylene	20.0	19.8		ug/L		99	1 - 195
Benzo[k]fluoranthene	20.0	20.3		ug/L		101	25 - 146
bis (2-chloroisopropyl) ether	20.0	14.4		ug/L		72	63 - 139
Bis(2-chloroethoxy)methane	20.0	12.6		ug/L		63	49 - 165
Bis(2-chloroethyl)ether	20.0	13.8		ug/L		69	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	22.9		ug/L		115	29 - 137
Butyl benzyl phthalate	20.0	21.2		ug/L		106	1 - 140
Chrysene	20.0	18.3		ug/L		92	44 - 140
Dibenz(a,h)anthracene	20.0	18.5		ug/L		92	1 - 200
Diethyl phthalate	20.0	18.8		ug/L		94	1 - 120
Dimethyl phthalate	20.0	18.5		ug/L		92	1 - 120
Di-n-butyl phthalate	20.0	19.8		ug/L		99	8 - 120
Di-n-octyl phthalate	20.0	23.9		ug/L		120	19 - 132
Fluoranthene	20.0	18.7		ug/L		94	43 - 121
Fluorene	20.0	15.7		ug/L		79	70 - 120
Hexachlorobenzene	20.0	15.9		ug/L		80	8 - 142
Hexachlorobutadiene	20.0	10.5		ug/L		53	38 - 120
Hexachlorocyclopentadiene	20.0	15.1		ug/L		75	43 - 145
Hexachloroethane	20.0	11.2		ug/L		56	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	18.5		ug/L		93	1 - 151
Isophorone	20.0	14.4		ug/L		72	47 - 180
Naphthalene	20.0	11.0		ug/L		55	36 - 120
Nitrobenzene	20.0	13.6		ug/L		68	54 - 158
N-Nitrosodimethylamine	20.0	8.93		ug/L		45	20 - 120
N-Nitrosodi-n-propylamine	20.0	15.0		ug/L		75	14 - 198
N-Nitrosodiphenylamine	20.0	19.4		ug/L		97	65 - 133
Pentachlorophenol	20.0	13.7		ug/L		68	38 - 152
Phenanthrene	20.0	16.4		ug/L		82	65 - 120

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-316081/2-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316081

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Phenol			20.0	6.01		ug/L		30	17 - 120		
Pyrene			20.0	17.5		ug/L		87	70 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,3-zrif roB ophenol	*: 3*		*2/ - 12T*
2-Fluorof iphenyl (Surr)	*3:*		*61 - 129*
2-Fluorophenol	*42*		*1T - 129*
Nitrof enbene-d8	*33*		*2T - 129*
Phenol-d3 (Surr)	*2:*		*19 - 129*
p-zerphenyl-d14 (Surr)	*/ :*		*48 - 129*

Lab Sample ID: LCSD 570-316081/3-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 316081

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene			20.0	10.7	LR	ug/L		53	57 - 130	2	30
1,2-Dichlorobenzene			20.0	12.1		ug/L		61	40 - 120	3	20
1,2-Diphenylhydrazine(as Azobenzene)			20.0	17.1		ug/L		85	60 - 115	2	30
1,3-Dichlorobenzene			20.0	12.0		ug/L		60	37 - 120	8	20
1,4-Dichlorobenzene			20.0	12.1		ug/L		60	39 - 120	4	20
2,4,6-Trichlorophenol			20.0	17.2		ug/L		86	52 - 129	2	35
2,4-Dichlorophenol			20.0	15.2		ug/L		76	53 - 122	2	30
2,4-Dimethylphenol			20.0	15.0		ug/L		75	42 - 120	0	35
2,4-Dinitrophenol			20.0	14.2		ug/L		71	1 - 173	6	79
2,4-Dinitrotoluene			20.0	21.2		ug/L		106	48 - 127	4	25
2,6-Dinitrotoluene			20.0	21.1		ug/L		106	68 - 137	6	29
2-Chloronaphthalene			20.0	14.0		ug/L		70	65 - 120	4	15
2-Chlorophenol			20.0	15.2		ug/L		76	36 - 120	5	37
2-Nitrophenol			20.0	16.6		ug/L		83	45 - 167	5	33
3,3'-Dichlorobenzidine			20.0	18.9		ug/L		95	8 - 213	1	65
4,6-Dinitro-2-methylphenol			20.0	20.5		ug/L		103	53 - 130	8	122
4-Bromophenyl phenyl ether			20.0	15.8		ug/L		79	65 - 120	2	26
4-Chloro-3-methylphenol			20.0	16.2		ug/L		81	41 - 128	5	44
4-Chlorophenyl phenyl ether			20.0	16.0		ug/L		80	38 - 145	5	36
4-Nitrophenol			20.0	8.87		ug/L		44	13 - 129	8	79
Acenaphthene			20.0	15.3		ug/L		77	60 - 132	5	29
Acenaphthylene			20.0	18.4		ug/L		92	54 - 126	4	45
Anthracene			20.0	19.0		ug/L		95	43 - 120	2	40
Benzidine			20.0	9.53	BA	ug/L		48	20 - 164	39	30
Benzo[a]anthracene			20.0	19.0		ug/L		95	42 - 133	1	32
Benzo[a]pyrene			20.0	20.6		ug/L		103	32 - 148	1	43
Benzo[b]fluoranthene			20.0	19.4		ug/L		97	42 - 140	1	43
Benzo[g,h,i]perylene			20.0	20.5		ug/L		102	1 - 195	3	61
Benzo[k]fluoranthene			20.0	20.9		ug/L		104	25 - 146	3	38
bis (2-chloroisopropyl) ether			20.0	14.6		ug/L		73	63 - 139	2	46
Bis(2-chloroethoxy)methane			20.0	12.6		ug/L		63	49 - 165	0	32
Bis(2-chloroethyl)ether			20.0	14.3		ug/L		71	43 - 126	4	65

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-316081/3-A
Matrix: Water
Analysis Batch: 316467

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 316081

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bis(2-ethylhexyl) phthalate	20.0	23.3		ug/L		117	29 - 137	2	50
Butyl benzyl phthalate	20.0	21.2		ug/L		106	1 - 140	0	36
Chrysene	20.0	18.7		ug/L		94	44 - 140	2	53
Dibenz(a,h)anthracene	20.0	19.0		ug/L		95	1 - 200	3	75
Diethyl phthalate	20.0	20.0		ug/L		100	1 - 120	6	60
Dimethyl phthalate	20.0	19.5		ug/L		97	1 - 120	5	110
Di-n-butyl phthalate	20.0	20.8		ug/L		104	8 - 120	5	28
Di-n-octyl phthalate	20.0	24.0		ug/L		120	19 - 132	0	42
Fluoranthene	20.0	19.5		ug/L		98	43 - 121	4	40
Fluorene	20.0	16.7		ug/L		84	70 - 120	6	23
Hexachlorobenzene	20.0	16.1		ug/L		80	8 - 142	1	33
Hexachlorobutadiene	20.0	10.5		ug/L		53	38 - 120	0	38
Hexachlorocyclopentadiene	20.0	15.4		ug/L		77	43 - 145	2	22
Hexachloroethane	20.0	11.6		ug/L		58	55 - 120	3	32
Indeno[1,2,3-cd]pyrene	20.0	18.9		ug/L		94	1 - 151	2	60
Isophorone	20.0	14.9		ug/L		75	47 - 180	4	56
Naphthalene	20.0	11.2		ug/L		56	36 - 120	2	39
Nitrobenzene	20.0	14.0		ug/L		70	54 - 158	3	37
N-Nitrosodimethylamine	20.0	8.51		ug/L		43	20 - 120	5	21
N-Nitrosodi-n-propylamine	20.0	15.5		ug/L		77	14 - 198	3	52
N-Nitrosodiphenylamine	20.0	19.7		ug/L		99	65 - 133	2	20
Pentachlorophenol	20.0	14.3		ug/L		71	38 - 152	4	52
Phenanthrene	20.0	16.8		ug/L		84	65 - 120	2	24
Phenol	20.0	6.20		ug/L		31	17 - 120	3	39
Pyrene	20.0	17.4		ug/L		87	70 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,3-zrif roB ophenol	*199*		*2/ - 12T*
2-Fluorof iphenyl (Surr)	*T2*		*61 - 129*
2-Fluorophenol	*44*		*1T - 129*
Nitrof enbene-d8	*3/*		*2T - 129*
Phenol-d3 (Surr)	*69*		*19 - 129*
p-zerphenyl-d14 (Surr)	*: 9*		*48 - 129*

Method: 8015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-316426/5
Matrix: Water
Analysis Batch: 316426

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
GRO (C4-C12)	ND		50	30	ug/L			03/31/23 12:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-5roB orhuorof enbene (Surr)	*TT*		*29 - 144*		*960610261279:*	*1*

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCS 570-316426/3
Matrix: Water
Analysis Batch: 316426

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Gasoline Range Organics (C4-C13)			1920	1840		ug/L		96	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-5roB orhuorof enbene (Surr)	*/ 4*		*29 - 144*

Lab Sample ID: LCSD 570-316426/4
Matrix: Water
Analysis Batch: 316426

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Gasoline Range Organics (C4-C13)			1920	1890		ug/L		98	71 - 120	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-5roB orhuorof enbene (Surr)	*/ T*		*29 - 144*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-315947/1-A
Matrix: Water
Analysis Batch: 316730

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315947

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C13-C28	ND		0.050	0.036	mg/L		03/29/23 21:24	04/01/23 12:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*192*		*86 - 181*	*9602: 026 21724*	*940910 26 12713*	*1*

Lab Sample ID: LCS 570-315947/2-A
Matrix: Water
Analysis Batch: 316730

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315947

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
C10-C28			4.00	3.85		mg/L		96	65 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane (Surr)	*: :*		*86 - 181*

Lab Sample ID: LCSD 570-315947/3-A
Matrix: Water
Analysis Batch: 316730

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315947

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C10-C28			4.00	4.19		mg/L		105	65 - 129	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane (Surr)	*198*		*86 - 181*

Method: 218.6 - Chromium, Hexavalent (Ion Chromatography)

Lab Sample ID: MB 570-314343/4
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/24/23 01:54	1

Lab Sample ID: LCS 570-314343/5
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	50.3		ug/L		100	95 - 107

Lab Sample ID: LCSD 570-314343/6
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	49.5		ug/L		99	95 - 107	1	20

Lab Sample ID: MRL 570-314343/3
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	0.200	0.192	J,DX	ug/L		96	50 - 150

Lab Sample ID: MB 570-314348/1-A
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/24/23 07:17	1

Lab Sample ID: LCS 570-314348/2-A
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexavalent chromium	50.1	50.5		ug/L		101	95 - 107

Lab Sample ID: LCSD 570-314348/3-A
Matrix: Water
Analysis Batch: 314343

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Hexavalent chromium	50.1	50.3		ug/L		100	95 - 107	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-314359/5
Matrix: Water
Analysis Batch: 314359

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrite as N	ND		0.10	0.043	mg/L			03/24/23 06:58	1
Nitrate as N	ND		0.10	0.020	mg/L			03/24/23 06:58	1

Lab Sample ID: LCS 570-314359/6
Matrix: Water
Analysis Batch: 314359

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrite as N	2.50	2.50		mg/L		100	90 - 110
Nitrate as N	5.00	5.14		mg/L		103	90 - 110

Lab Sample ID: LCSD 570-314359/7
Matrix: Water
Analysis Batch: 314359

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrite as N	2.50	2.50		mg/L		100	90 - 110	0	15
Nitrate as N	5.00	5.14		mg/L		103	90 - 110	0	15

Lab Sample ID: MB 570-314360/5
Matrix: Water
Analysis Batch: 314360

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.0	0.36	mg/L			03/24/23 06:58	1
Fluoride	ND		0.10	0.046	mg/L			03/24/23 06:58	1
Sulfate	ND		1.0	0.24	mg/L			03/24/23 06:58	1

Lab Sample ID: LCS 570-314360/6
Matrix: Water
Analysis Batch: 314360

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	50.0	50.4		mg/L		101	90 - 110
Fluoride	2.50	2.72		mg/L		109	90 - 110
Sulfate	50.0	50.3		mg/L		101	90 - 110

Lab Sample ID: LCSD 570-314360/7
Matrix: Water
Analysis Batch: 314360

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	50.0	50.3		mg/L		101	90 - 110	0	15
Fluoride	2.50	2.73		mg/L		109	90 - 110	0	15
Sulfate	50.0	50.3		mg/L		101	90 - 110	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 570-314458/7
Matrix: Water
Analysis Batch: 314458

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		2.0	0.91	ug/L			03/24/23 12:33	1

Lab Sample ID: LCS 570-314458/8
Matrix: Water
Analysis Batch: 314458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.5		ug/L		98	85 - 115

Lab Sample ID: LCSD 570-314458/9
Matrix: Water
Analysis Batch: 314458

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.4		ug/L		98	85 - 115	0	15

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 570-314891/1-A
Matrix: Water
Analysis Batch: 315463

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 314891

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.50	0.0035	mg/L		03/27/23 08:29	03/28/23 11:44	1

Lab Sample ID: LCS 570-314891/2-A
Matrix: Water
Analysis Batch: 315463

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 314891

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Boron	0.500	0.481	J,DX	mg/L		96	85 - 115

Lab Sample ID: LCSD 570-314891/3-A
Matrix: Water
Analysis Batch: 315463

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 314891

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.500	0.486	J,DX	mg/L		97	85 - 115	1	20

Lab Sample ID: MB 570-314531/1-A
Matrix: Water
Analysis Batch: 315160

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.50	0.0035	mg/L			03/27/23 18:01	1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 570-314531/2-A
Matrix: Water
Analysis Batch: 315160

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron			0.500	0.453	J,DX	mg/L		91	85 - 115		

Lab Sample ID: LCSD 570-314531/3-A
Matrix: Water
Analysis Batch: 315160

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron			0.500	0.465	J,DX	mg/L		93	85 - 115	3	20

Lab Sample ID: 570-132336-1 MS
Matrix: Water
Analysis Batch: 315160

Client Sample ID: EPBLLC_20230323
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Boron	0.86	BU	0.500	1.33		mg/L		93	80 - 120		

Lab Sample ID: 570-132336-1 MSD
Matrix: Water
Analysis Batch: 315160

Client Sample ID: EPBLLC_20230323
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Boron	0.86	BU	0.500	1.32		mg/L		92	80 - 120	0	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-314924/1-A
Matrix: Water
Analysis Batch: 315053

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 314924

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L		03/27/23 08:51	03/27/23 12:53	1
Silver	ND		1.0	0.23	ug/L		03/27/23 08:51	03/27/23 12:53	1
Arsenic	ND		1.0	0.16	ug/L		03/27/23 08:51	03/27/23 12:53	1
Barium	ND		1.0	0.17	ug/L		03/27/23 08:51	03/27/23 12:53	1
Beryllium	ND	IB	0.50	0.26	ug/L		03/27/23 08:51	03/27/23 12:53	1
Cadmium	ND		1.0	0.13	ug/L		03/27/23 08:51	03/27/23 12:53	1
Chromium	ND		2.0	0.14	ug/L		03/27/23 08:51	03/27/23 12:53	1
Cobalt	ND		1.0	0.14	ug/L		03/27/23 08:51	03/27/23 12:53	1
Copper	ND		2.0	0.32	ug/L		03/27/23 08:51	03/27/23 12:53	1
Iron	ND		20	3.7	ug/L		03/27/23 08:51	03/27/23 12:53	1
Manganese	1.77		1.0	0.41	ug/L		03/27/23 08:51	03/27/23 12:53	1
Nickel	ND		2.0	0.17	ug/L		03/27/23 08:51	03/27/23 12:53	1
Lead	ND		1.0	0.12	ug/L		03/27/23 08:51	03/27/23 12:53	1
Antimony	ND		2.0	0.36	ug/L		03/27/23 08:51	03/27/23 12:53	1
Zinc	ND		20	2.8	ug/L		03/27/23 08:51	03/27/23 12:53	1
Selenium	ND		2.0	0.52	ug/L		03/27/23 08:51	03/27/23 12:53	1
Thallium	ND		1.0	0.11	ug/L		03/27/23 08:51	03/27/23 12:53	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 570-314924/2-A
Matrix: Water
Analysis Batch: 315053

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 314924

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	80.0	75.0		ug/L		94	85 - 115
Silver	80.0	78.4		ug/L		98	85 - 115
Arsenic	80.0	78.1		ug/L		98	85 - 115
Barium	80.0	77.0		ug/L		96	85 - 115
Beryllium	80.0	75.3	IB	ug/L		94	85 - 115
Cadmium	80.0	77.4		ug/L		97	85 - 115
Chromium	80.0	77.5		ug/L		97	85 - 115
Cobalt	80.0	76.3		ug/L		95	85 - 115
Copper	80.0	73.1		ug/L		91	85 - 115
Iron	800	777		ug/L		97	85 - 115
Manganese	80.0	80.7		ug/L		101	85 - 115
Nickel	80.0	76.7		ug/L		96	85 - 115
Lead	80.0	78.2		ug/L		98	85 - 115
Antimony	80.0	74.9		ug/L		94	85 - 115
Zinc	80.0	76.7		ug/L		96	85 - 115
Selenium	80.0	79.2		ug/L		99	85 - 115
Thallium	80.0	74.8		ug/L		94	85 - 115

Lab Sample ID: LCSD 570-314924/3-A
Matrix: Water
Analysis Batch: 315053

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 314924

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	80.0	75.3		ug/L		94	85 - 115	0	20
Silver	80.0	77.1		ug/L		96	85 - 115	2	20
Arsenic	80.0	77.6		ug/L		97	85 - 115	1	20
Barium	80.0	76.1		ug/L		95	85 - 115	1	20
Beryllium	80.0	75.4	IB	ug/L		94	85 - 115	0	20
Cadmium	80.0	76.6		ug/L		96	85 - 115	1	20
Chromium	80.0	76.7		ug/L		96	85 - 115	1	20
Cobalt	80.0	75.8		ug/L		95	85 - 115	1	20
Copper	80.0	72.2		ug/L		90	85 - 115	1	20
Iron	800	780		ug/L		98	85 - 115	0	20
Manganese	80.0	82.6		ug/L		103	85 - 115	2	20
Nickel	80.0	76.3		ug/L		95	85 - 115	1	20
Lead	80.0	78.6		ug/L		98	85 - 115	0	20
Antimony	80.0	74.9		ug/L		94	85 - 115	0	20
Zinc	80.0	76.1		ug/L		95	85 - 115	1	20
Selenium	80.0	77.4		ug/L		97	85 - 115	2	20
Thallium	80.0	75.6		ug/L		94	85 - 115	1	20

Lab Sample ID: MB 570-314528/1-A
Matrix: Water
Analysis Batch: 314988

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		15	8.6	ug/L			03/27/23 10:22	1
Silver	ND		1.0	0.23	ug/L			03/27/23 10:22	1
Arsenic	ND		1.0	0.16	ug/L			03/27/23 10:22	1

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-314528/1-A
Matrix: Water
Analysis Batch: 314988

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		1.0	0.17	ug/L			03/27/23 10:22	1
Beryllium	ND	IB	0.50	0.26	ug/L			03/27/23 10:22	1
Cadmium	ND		1.0	0.13	ug/L			03/27/23 10:22	1
Chromium	ND		2.0	0.14	ug/L			03/27/23 10:22	1
Cobalt	ND		1.0	0.14	ug/L			03/27/23 10:22	1
Copper	ND		2.0	0.32	ug/L			03/27/23 10:22	1
Iron	ND		20	3.7	ug/L			03/27/23 10:22	1
Manganese	ND		1.0	0.41	ug/L			03/27/23 10:22	1
Nickel	ND		2.0	0.17	ug/L			03/27/23 10:22	1
Lead	ND		1.0	0.12	ug/L			03/27/23 10:22	1
Antimony	ND		2.0	0.36	ug/L			03/27/23 10:22	1
Zinc	ND		20	2.8	ug/L			03/27/23 10:22	1
Selenium	ND		2.0	0.52	ug/L			03/27/23 10:22	1
Thallium	ND		1.0	0.11	ug/L			03/27/23 10:22	1

Lab Sample ID: LCS 570-314528/2-A
Matrix: Water
Analysis Batch: 314988

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum			80.0	81.2		ug/L		101	85 - 115		
Silver			80.0	81.2		ug/L		102	85 - 115		
Arsenic			80.0	79.1		ug/L		99	85 - 115		
Barium			80.0	79.6		ug/L		99	85 - 115		
Beryllium			80.0	91.9	IB	ug/L		115	85 - 115		
Cadmium			80.0	79.4		ug/L		99	85 - 115		
Chromium			80.0	80.8		ug/L		101	85 - 115		
Cobalt			80.0	79.8		ug/L		100	85 - 115		
Copper			80.0	79.5		ug/L		99	85 - 115		
Iron			800	814		ug/L		102	85 - 115		
Manganese			80.0	81.7		ug/L		102	85 - 115		
Nickel			80.0	80.6		ug/L		101	85 - 115		
Lead			80.0	82.0		ug/L		103	85 - 115		
Antimony			80.0	76.4		ug/L		95	85 - 115		
Zinc			80.0	78.2		ug/L		98	85 - 115		
Selenium			80.0	78.0		ug/L		97	85 - 115		
Thallium			80.0	80.7		ug/L		101	85 - 115		

Lab Sample ID: LCSD 570-314528/3-A
Matrix: Water
Analysis Batch: 314988

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum			80.0	85.8		ug/L		107	85 - 115	6	20
Silver			80.0	82.9		ug/L		104	85 - 115	2	20
Arsenic			80.0	79.5		ug/L		99	85 - 115	1	20
Barium			80.0	81.9		ug/L		102	85 - 115	3	20
Beryllium			80.0	93.8	IB LQ	ug/L		117	85 - 115	2	20
Cadmium			80.0	81.5		ug/L		102	85 - 115	3	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-314528/3-A
Matrix: Water
Analysis Batch: 314988

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium			80.0	82.1		ug/L		103	85 - 115	2	20
Cobalt			80.0	82.1		ug/L		103	85 - 115	3	20
Copper			80.0	81.2		ug/L		101	85 - 115	2	20
Iron			800	832		ug/L		104	85 - 115	2	20
Manganese			80.0	83.6		ug/L		105	85 - 115	2	20
Nickel			80.0	82.1		ug/L		103	85 - 115	2	20
Lead			80.0	84.2		ug/L		105	85 - 115	3	20
Antimony			80.0	79.5		ug/L		99	85 - 115	4	20
Zinc			80.0	79.9		ug/L		100	85 - 115	2	20
Selenium			80.0	75.9		ug/L		95	85 - 115	3	20
Thallium			80.0	82.0		ug/L		103	85 - 115	2	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 570-315686/1-A
Matrix: Water
Analysis Batch: 315803

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315686

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/29/23 09:20	03/29/23 13:42	1

Lab Sample ID: LCS 570-315686/2-A
Matrix: Water
Analysis Batch: 315803

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315686

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
HEM (Oil & Grease)			40.0	38.4		mg/L		96	78 - 114		

Lab Sample ID: LCSD 570-315686/3-A
Matrix: Water
Analysis Batch: 315803

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315686

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
HEM (Oil & Grease)			40.0	37.4		mg/L		93	78 - 114	3	18

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 570-317308/5-A
Matrix: Water
Analysis Batch: 317378

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 317308

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.075	0.032	mg/L		04/04/23 10:15	04/04/23 11:58	1

Lab Sample ID: LCS 570-317308/6-A
Matrix: Water
Analysis Batch: 317378

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 317308

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Ammonia			0.500	0.482		mg/L		96	90 - 110		

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCSD 570-317308/7-A
Matrix: Water
Analysis Batch: 317378

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 317308

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia			0.500	0.486		mg/L		97	90 - 110	1	20

Method: Kelada 01 - Cyanide, Total, Acid Dissociable and Thiocyanate

Lab Sample ID: MB 570-315871/11
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	2.5	ug/L			03/29/23 13:56	1

Lab Sample ID: LCS 570-315871/12
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			250	249		ug/L		100	90 - 110		

Lab Sample ID: LCSD 570-315871/13
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cyanide, Total			250	249		ug/L		100	90 - 110	0	20

Lab Sample ID: MRL 570-315871/10
Matrix: Water
Analysis Batch: 315871

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Cyanide, Total			5.00	4.82	J,DX	ug/L		96	50 - 150		

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-314625/1
Matrix: Water
Analysis Batch: 314625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			1000	1000		NTU		99.7	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-314625/2
Matrix: Water
Analysis Batch: 314625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			10.0	10		NTU		100.0	99.0 - 101.0		

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: LCSSRM 570-314625/3
Matrix: Water
Analysis Batch: 314625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Lab Sample ID: 570-132336-1 DU
Matrix: Water
Analysis Batch: 314625

Client Sample ID: EPBLLC_20230323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	390		390		NTU		0.3	25

Method: SM 2510B - Conductivity, Specific Conductance

Lab Sample ID: MB 570-316225/10
Matrix: Water
Analysis Batch: 316225

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/30/23 11:38	1

Lab Sample ID: MB 570-316225/42
Matrix: Water
Analysis Batch: 316225

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/30/23 14:48	1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 570-315801/1
Matrix: Water
Analysis Batch: 315801

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	8.7	mg/L			03/29/23 13:29	1

Lab Sample ID: LCS 570-315801/2
Matrix: Water
Analysis Batch: 315801

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1030		mg/L		103	84 - 108

Lab Sample ID: LCSD 570-315801/3
Matrix: Water
Analysis Batch: 315801

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Dissolved Solids	1000	1020		mg/L		102	84 - 108	0	10

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 570-132336-1 DU
Matrix: Water
Analysis Batch: 315801

Client Sample ID: EPBLLC_20230323
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1600		1590		mg/L		1	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-315900/1
Matrix: Water
Analysis Batch: 315900

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/29/23 18:16	1

Lab Sample ID: LCS 570-315900/2
Matrix: Water
Analysis Batch: 315900

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.0		mg/L		96	77 - 116

Lab Sample ID: LCSD 570-315900/3
Matrix: Water
Analysis Batch: 315900

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	97.0		mg/L		97	77 - 116	1	10

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: LCS 570-314487/2-A
Matrix: Water
Analysis Batch: 315785

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314487

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	199	204		mg/L		103	84.6 - 115.4

Lab Sample ID: 570-11803-A-12-A USB
Matrix: Water
Analysis Batch: 315785

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L			03/24/23 11:37	1

Method: SM 5310D - Organic Carbon, Total (TOC)

Lab Sample ID: MB 570-317988/33
Matrix: Water
Analysis Batch: 317988

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon, Total Organic	ND		0.50	0.26	mg/L			04/06/23 13:48	1

Method: SM 5310D - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 570-317988/34
Matrix: Water
Analysis Batch: 317988

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Carbon, Total Organic			5.03	4.86		mg/L		97	85 - 115		

Lab Sample ID: LCSD 570-317988/35
Matrix: Water
Analysis Batch: 317988

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon, Total Organic			5.03	4.89		mg/L		97	85 - 115	1	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 570-314685/5-A
Matrix: Water
Analysis Batch: 314693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 314685

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MBAS	ND		0.20	0.050	mg/L		03/24/23 16:43	03/24/23 17:22	1

Lab Sample ID: LCS 570-314685/6-A
Matrix: Water
Analysis Batch: 314693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 314685

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
MBAS			0.500	0.519		mg/L		104	83 - 122		

Lab Sample ID: LCSD 570-314685/7-A
Matrix: Water
Analysis Batch: 314693

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 314685

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
MBAS			0.500	0.527		mg/L		105	83 - 122	2	10

QC Association Summary

6 Client HCay & Adrchler, Job ID: 570-129224-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

GC/MS VOA

Analysis Batch: 318233

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	49W1	
570-129224-9	_S-90920292-1	_orHCj3 &	MHnid	49W1	
RS 570-21W922j7	RincoA SCleT	_orHCj3 &	MHnid	49W1	
F6 / 570-21W922j100W	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	49W1	
F6 / D 570-21W922j5	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	49W1	

Analysis Batch: 318d28

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	p940S / IR	
RS 570-21W49Wjp	RincoA SCleT	_orHCj3 &	MHnid	p940S / IR	
F6 / 570-21W49WjW	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	p940S / IR	
F6 / D 570-21W49Wj5	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	p940S / IR	

GC/MS Spmi VOA

Drpb Batch: 31d541

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	495	
RS 570-2140p1j1-&	RincoA SCleT	_orHCj3 &	MHnid	495	
F6 / 570-2140p1j9-&	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	495	
F6 / D 570-2140p1j2-&	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	495	

Analysis Batch: 31d8d0

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
RS 570-2140p1j1-&	RincoA SCleT	_orHCj3 &	MHnid	495,1 / IR	2140p1
F6 / 570-2140p1j9-&	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	495,1 / IR	2140p1
F6 / D 570-2140p1j2-&	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	495,1 / IR	2140p1

Analysis Batch: 31d729

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	495,1 / IR	2140p1

GC VOA

Analysis Batch: 31d82d

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	p015S	
RS 570-214W94j5	RincoA SCleT	_orHCj3 &	MHnid	p015S	
F6 / 570-214W94j2	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	p015S	
F6 / D 570-214W94jW	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	p015S	

GC Spmi VOA

Drpb Batch: 319780

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	25106	
RS 570-215uW7j1-&	RincoA SCleT	_orHCj3 &	MHnid	25106	
F6 / 570-215uW7j9-&	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	25106	
F6 / D 570-215uW7j2-&	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	25106	

8 mbfles 6 HCrli eri

QC Association Summary

6 Client HC Cay & Adrchler, Job ID: 570-129224-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

GC Spmi VOA

Analysis Batch: 31d035

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	p015S	215uW7
RS 570-215uW7j1-&	Ri ncoA SCleT	_orHCj3 &	MHnid	p015S	215uW7
F6 / 570-215uW7j9-&	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	p015S	215uW7
F6 / D 570-215uW7j2-&	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	p015S	215uW7

HD6C/eC

Analysis Batch: 318383

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	DlssoCvi A	MHnid	91p,4	21W2Wp
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	91p,4	
RS 570-21W2W2jW	Ri ncoA SCleT	_orHCj3 &	MHnid	91p,4	
RS 570-21W2Wpj1-&	Ri ncoA SCleT	DlssoCvi A	MHnid	91p,4	21W2Wp
F6 / 570-21W2W2j5	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	91p,4	
F6 / 570-21W2Wpj9-&	FHb 6 oembC/ HNkC	DlssoCvi A	MHnid	91p,4	21W2Wp
F6 / D 570-21W2W2j4	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	91p,4	
F6 / D 570-21W2Wpj2-&	FHb 6 oembC/ HNkC Dmk	DlssoCvi A	MHnid	91p,4	21W2Wp
RLF 570-21W2W2j2	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	91p,4	

Filtration Batch: 318384

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	DlssoCvi A	MHnid	gl0dHnoe	
RS 570-21W2Wpj1-&	Ri ncoA SCleT	DlssoCvi A	MHnid	gl0dHnoe	
F6 / 570-21W2Wpj9-&	FHb 6 oembC/ HNkC	DlssoCvi A	MHnid	gl0dHnoe	
F6 / D 570-21W2Wpj2-&	FHb 6 oembC/ HNkC Dmk	DlssoCvi A	MHnid	gl0dHnoe	

Analysis Batch: 318397

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	200,0	
RS 570-21W25uj5	Ri ncoA SCleT	_orHCj3 &	MHnid	200,0	
F6 / 570-21W25uj4	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	200,0	
F6 / D 570-21W25uj7	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	200,0	

Analysis Batch: 3183d5

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	200,0	
570-129224-1 - DF	8. SFF6 E90920292	_orHCj3 &	MHnid	200,0	
RS 570-21W240j5	Ri ncoA SCleT	_orHCj3 &	MHnid	200,0	
F6 / 570-21W240j4	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	200,0	
F6 / D 570-21W240j7	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	200,0	

Analysis Batch: 318894

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	21W0	
RS 570-21WW5pj7	Ri ncoA SCleT	_orHCj3 &	MHnid	21W0	
F6 / 570-21WW5pjp	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	21W0	
F6 / D 570-21WW5pju	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	21W0	

Analysis Batch: 310d45

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	3 O93 O2 6 HCr	

8 mobfles 6 HCsr li eri

QC Association Summary

6 Client HCay & Adrchler, Job ID: 570-129224-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Mptals

Filtration Batch: 318924

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	DlssoCvi A	MHnid	glOdHnoe	
RS 570-21W59pj1-&	RincoA SCHeT	DlssoCvi A	MHnid	glOdHnoe	
F6 / 570-21W59pj9-&	FHb 6 oembC/ HNkC	DlssoCvi A	MHnid	glOdHnoe	
F6 / D 570-21W59pj2-&	FHb 6 oembC/ HNkC Dmk	DlssoCvi A	MHnid	glOdHnoe	

Filtration Batch: 318931

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	DlssoCvi A	MHnid	glOdHnoe	
RS 570-21W521j1-&	RincoA SCHeT	DlssoCvi A	MHnid	glOdHnoe	
F6 / 570-21W521j9-&	FHb 6 oembC/ HNkC	DlssoCvi A	MHnid	glOdHnoe	
F6 / D 570-21W521j2-&	FHb 6 oembC/ HNkC Dmk	DlssoCvi A	MHnid	glOdHnoe	
570-129224-1 R/	8. SFF6 E90920292	DlssoCvi A	MHnid	glOdHnoe	
570-129224-1 R/ D	8. SFF6 E90920292	DlssoCvi A	MHnid	glOdHnoe	

Analysis Batch: 318d97

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	DlssoCvi A	MHnid	/ R 92W0S	

Analysis Batch: 318dd5

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCLirovidHbC	MHnid	/ R 92W0S	

Drpb Batch: 318471

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCLirovidHbC	MHnid	900,7	
RS 570-21Wpu1j1-&	RincoA SCHeT	_orHCLirovidHbC	MHnid	900,7	
F6 / 570-21Wpu1j9-&	FHb 6 oembC/ HNkC	_orHCLirovidHbC	MHnid	900,7	
F6 / D 570-21Wpu1j2-&	FHb 6 oembC/ HNkC Dmk	_orHCLirovidHbC	MHnid	900,7	

Drpb Batch: 318728

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCLirovidHbC	MHnid	900,p	
RS 570-21Wu9Wj1-&	RincoA SCHeT	_orHCLirovidHbC	MHnid	900,p	
F6 / 570-21Wu9Wj9-&	FHb 6 oembC/ HNkC	_orHCLirovidHbC	MHnid	900,p	
F6 / D 570-21Wu9Wj2-&	FHb 6 oembC/ HNkC Dmk	_orHCLirovidHbC	MHnid	900,p	

Analysis Batch: 318744

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	DlssoCvi A	MHnid	900,p	21W59p
RS 570-21W59pj1-&	RincoA SCHeT	DlssoCvi A	MHnid	900,p	21W59p
F6 / 570-21W59pj9-&	FHb 6 oembC/ HNkC	DlssoCvi A	MHnid	900,p	21W59p
F6 / D 570-21W59pj2-&	FHb 6 oembC/ HNkC Dmk	DlssoCvi A	MHnid	900,p	21W59p

Analysis Batch: 319593

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCLirovidHbC	MHnid	900,p	21Wu9W
570-129224-1	8. SFF6 E90920292	_orHCLirovidHbC	MHnid	900,p	21Wu9W
RS 570-21Wu9Wj1-&	RincoA SCHeT	_orHCLirovidHbC	MHnid	900,p	21Wu9W
F6 / 570-21Wu9Wj9-&	FHb 6 oembC/ HNkC	_orHCLirovidHbC	MHnid	900,p	21Wu9W
F6 / D 570-21Wu9Wj2-&	FHb 6 oembC/ HNkC Dmk	_orHCLirovidHbC	MHnid	900,p	21Wu9W

8 mobfles 6 HCsrli eri

QC Association Summary

6 Client HCay & Adrchler, Job ID: 570-129224-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Mptals

Analysis Batch: 3191d5

6aL Samblpe d	Clipnt Samblpe d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	DlssoCvi A	MHnid	900,7 Li v W,W	21W521
RS 570-21W521j1-&	RincoA SCHeT	DlssoCvi A	MHnid	900,7 Li v W,W	21W521
F6 / 570-21W521j9-&	FHb 6 oembC/ HNkC	DlssoCvi A	MHnid	900,7 Li v W,W	21W521
F6 / D 570-21W521j2-&	FHb 6 oembC/ HNkC Dmk	DlssoCvi A	MHnid	900,7 Li v W,W	21W521
570-129224-1 R/	8. SFF6 E90920292	DlssoCvi A	MHnid	900,7 Li v W,W	21W521
570-129224-1 R/ D	8. SFF6 E90920292	DlssoCvi A	MHnid	900,7 Li v W,W	21W521

Analysis Batch: 3198d3

6aL Samblpe d	Clipnt Samblpe d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCLirovidHbC	MHnid	900,7 Li v W,W	21Wpu1
RS 570-21Wpu1j1-&	RincoA SCHeT	_orHCLirovidHbC	MHnid	900,7 Li v W,W	21Wpu1
F6 / 570-21Wpu1j9-&	FHb 6 oembC/ HNkC	_orHCLirovidHbC	MHnid	900,7 Li v W,W	21Wpu1
F6 / D 570-21Wpu1j2-&	FHb 6 oembC/ HNkC Dmk	_orHCLirovidHbC	MHnid	900,7 Li v W,W	21Wpu1

Analysis Batch: 319000

6aL Samblpe d	Clipnt Samblpe d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCLirovidHbC	MHnid	900,p	21Wu9W

Gpnpral Chpmistry

Analysis Batch: 318837

6aL Samblpe d	Clipnt Samblpe d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	/ R 95W0g	

Drpb Batch: 318840

6aL Samblpe d	Clipnt Samblpe d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	SOD . d k	
F6 / 570-21WWp7j9-&	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	SOD . d k	

Analysis Batch: 318d29

6aL Samblpe d	Clipnt Samblpe d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	/ R 9120S	
F6 / / L R 570-21W495j1	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	/ R 9120S	
F6 / / L R 570-21W495j9	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	/ R 9120S	
F6 / / L R 570-21W495j2	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	/ R 9120S	
570-129224-1 DK	8. SFF6 E90920292	_orHCj3 &	MHnid	/ R 9120S	

Drpb Batch: 318d49

6aL Samblpe d	Clipnt Samblpe d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	/ R 55W06	
RS 570-21W4p5j5-&	RincoA SCHeT	_orHCj3 &	MHnid	/ R 55W06	
F6 / 570-21W4p5j4-&	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	/ R 55W06	
F6 / D 570-21W4p5j7-&	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	/ R 55W06	

Analysis Batch: 318d73

6aL Samblpe d	Clipnt Samblpe d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	/ R 55W06	21W4p5
RS 570-21W4p5j5-&	RincoA SCHeT	_orHCj3 &	MHnid	/ R 55W06	21W4p5
F6 / 570-21W4p5j4-&	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	/ R 55W06	21W4p5
F6 / D 570-21W4p5j7-&	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	/ R 55W06	21W4p5

8 mobfles 6 HCsrli eri

QC Association Summary

6 Client HCay & Adrchler, . dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-129224-1

Gpnpral Chpmistry

Drpb Batch: 319d4d

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	144W&	
RS 570-2154p4j1-&	Rincoa SCleT	_orHCj3 &	MHnid	144W&	
F6 / 570-2154p4j9-&	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	144W&	
F6 / D 570-2154p4j2-&	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	144W&	

Analysis Batch: 319049

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	/ R 5910S	21WWp7
570-11p02-&-19-& K/ S	Rincoa SCleT	_orHCj3 &	MHnid	/ R 5910S	
F6 / 570-21WWp7j9-&	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	/ R 5910S	21WWp7

Analysis Batch: 319451

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	/ R 95W06	
RS 570-215p01j1	Rincoa SCleT	_orHCj3 &	MHnid	/ R 95W06	
F6 / 570-215p01j9	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	/ R 95W06	
F6 / D 570-215p01j2	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	/ R 95W06	
570-129224-1 DK	8. SFF6 E90920292	_orHCj3 &	MHnid	/ R 95W06	

Analysis Batch: 319453

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	144W&	2154p4
RS 570-2154p4j1-&	Rincoa SCleT	_orHCj3 &	MHnid	144W&	2154p4
F6 / 570-2154p4j9-&	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	144W&	2154p4
F6 / D 570-2154p4j2-&	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	144W&	2154p4

Analysis Batch: 319401

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	Ui GIAH01	
RS 570-215p71j11	Rincoa SCleT	_orHCj3 &	MHnid	Ui GIAH01	
F6 / 570-215p71j19	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	Ui GIAH01	
F6 / D 570-215p71j12	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	Ui GIAH01	
RLF 570-215p71j10	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	Ui GIAH01	

Analysis Batch: 319755

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	/ R 95W0D	
RS 570-215u00j1	Rincoa SCleT	_orHCj3 &	MHnid	/ R 95W0D	
F6 / 570-215u00j9	FHb 6 oembC/ HNkC	_orHCj3 &	MHnid	/ R 95W0D	
F6 / D 570-215u00j2	FHb 6 oembC/ HNkC Dmk	_orHCj3 &	MHnid	/ R 95W0D	

Analysis Batch: 31d229

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	/ R 9510S	
RS 570-214995j10	Rincoa SCleT	_orHCj3 &	MHnid	/ R 9510S	
RS 570-214995jW9	Rincoa SCleT	_orHCj3 &	MHnid	/ R 9510S	

Drpb Batch: 310354

6aL Samblpd	Clipnt Samblpd	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHCj3 &	MHnid	DlsnCj&N NoelH	
RS 570-21720pj5-&	Rincoa SCleT	_orHCj3 &	MHnid	DlsnCj&N NoelH	

8 mbfles 6 HCrli eri

QC Association Summary

6 Client HCay & Adrchler, Job ID: 570-129224-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Gpnpral Chpmistry (Continupx)

Drpb Batch: 310354 (Continupx)

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
F6 / 570-21720pj4-&	FHb 6 oembC/ HNkC	_orHC3 &	MHnid	DlsnlC&NNoelH	
F6 / D 570-21720pj7-&	FHb 6 oembC/ HNkC Dmk	_orHC3 &	MHnid	DlsnlC&NNoelH	

Analysis Batch: 310304

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHC3 &	MHnid	250,1	21720p
RS 570-21720pj5-&	RincoA SCleT	_orHC3 &	MHnid	250,1	21720p
F6 / 570-21720pj4-&	FHb 6 oembC/ HNkC	_orHC3 &	MHnid	250,1	21720p
F6 / D 570-21720pj7-&	FHb 6 oembC/ HNkC Dmk	_orHC3 &	MHnid	250,1	21720p

Analysis Batch: 31008d

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHC3 &	MHnid	91p,4 6 L 2	

Analysis Batch: 310099

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	DlssoCi A	MHnid	91p,4 6 L 2	

Analysis Batch: 310744

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHC3 &	MHnid	/ R 5210D	
RS 570-217uppj22	RincoA SCleT	_orHC3 &	MHnid	/ R 5210D	
F6 / 570-217uppj2W	FHb 6 oembC/ HNkC	_orHC3 &	MHnid	/ R 5210D	
F6 / D 570-217uppj25	FHb 6 oembC/ HNkC Dmk	_orHC3 &	MHnid	/ R 5210D	

Gpotpchnical

Analysis Batch: 310928

6aL Samblp el	Clipnt Samblp el	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-129224-1	8. SFF6 E90920292	_orHC3 &	MHnid	DWW4W	
F6 / 570-21759Wj17	FHb 6 oembC/ HNkC	_orHC3 &	MHnid	DWW4W	
F6 / D 570-21759Wj1u	FHb 6 oembC/ HNkC Dmk	_orHC3 &	MHnid	DWW4W	

8 mbfles 6 HCrli eri

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Client Sample ID: EPBLLC_20230323

Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	314233	03/24/23 00:43	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	314624	03/24/23 22:24	G6NI	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			1017.4 mL	2 mL	316081	03/30/23 10:27	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	316925	04/03/23 17:55	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	316426	03/31/23 14:17	P1R	EET CAL 4
	Instrument ID: GC1									
Total/NA	Prep	3510C			248.6 mL	2.5 mL	315947	03/29/23 21:24	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	316730	04/01/23 20:29	N1A	EET CAL 4
	Instrument ID: GC48									
Dissolved	Filtration	Filtration			100 mL	100 mL	314348	03/24/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	314343	03/24/23 08:05	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	314343	03/24/23 06:29	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		1	4 mL	4 mL	314359	03/24/23 07:49	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0		1	4 mL	4 mL	314360	03/24/23 07:49	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	300.0	DL	10	4 mL	4 mL	314360	03/24/23 09:29	PS	EET CAL 4
	Instrument ID: IC9									
Total/NA	Analysis	314.0		1	4 mL	4 mL	314458	03/25/23 04:19	M5Z3	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			317680	04/05/23 12:20	URMH	EET CAL 4
	Instrument ID: IC9									
Dissolved	Filtration	Filtration			50 mL	50 mL	314531	03/24/23 13:05	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			315160	03/27/23 18:08	P1R	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	314891	03/27/23 08:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			315463	03/28/23 12:24	K1UV	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	314528	03/24/23 12:44	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			314988	03/27/23 10:37	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	314924	03/27/23 08:51	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			315777	03/29/23 09:13	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	314924	03/27/23 08:51	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			315053	03/27/23 13:12	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	314924	03/27/23 08:51	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		10			315053	03/27/23 13:30	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Client Sample ID: EPBLLC_20230323

Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	SM 2340B		1			314659	03/29/23 19:06	P1R	EET CAL 4
Total Recoverable	Analysis	SM 2340B		1			314660	03/30/23 19:07	P1R	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	1664A			1029 mL	1000 mL	315686	03/29/23 09:20	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			315803	03/29/23 13:42	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Dissolved	Analysis	218.6 CR3		1			317755	04/05/23 15:22	URMH	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6 CR3		1			317746	04/05/23 15:09	URMH	EET CAL 4
	Instrument ID: IC33									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	317308	04/04/23 10:15	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	317378	04/04/23 12:35	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	315871	03/29/23 15:34	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			314625	03/24/23 17:20	ZVB7	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			316225	03/30/23 16:38	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	50 mL	1000 mL	315801	03/29/23 13:29	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	100 mL	1000 mL	315900	03/29/23 18:17	LNW3	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	314439	03/24/23 16:35	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	BOD Prep					314487	03/24/23 11:11	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	315785	03/24/23 12:02	TN8Z	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	SM 5310D		8	40 mL	40 mL	317988	04/06/23 23:34	UAPD	EET CAL 4
	Instrument ID: TOC12									
Total/NA	Prep	SM 5540C			100 mL	100 mL	314685	03/24/23 16:43	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	314693	03/24/23 17:28	TXA8	EET CAL 4
	Instrument ID: UV8									
Total/NA	Analysis	D4464		1			317524	04/05/23 08:17	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230323-1

Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	314233	03/24/23 01:49	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124226-1

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0820	11-16-42
California	Los Angeles Co3nty Sanitation Districts	1010u	07-21-42
California	SCA9 MD LAP	17LA0u1u	11-20-42
California	State	2084	07-21-4Q
Nevada	State	CA00111	08-01-42
Oregon	NELAP	Q175	04-04-4Q
USDA	US Federal Programs	P220-44-0005u	05-4Q-42
Washington	State	Cu16-18	10-11-42

Method Summary

4 Client HCay & Adrchler,
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-132336-1

Method	Method Description	Protocol	Laboratory
62N,1	EoCHnC WdBHelr 4 oV OomeAp us 4 jR / (	M. &	MMG 4 & F N
T260S / IR	EoCHnC WdBHelr 4 oV OomeAp us 4 jR / (	/) TN6	MMG 4 & F N
625,1 / IR	/ i V l8oCHnC WdBHelr 4 oV OomeAp s 4 jR / u/ IR (	M. &	MMG 4 & F N
T015S	s HpoCei L HeBi WdBHelr p - us 4 (	/) TN6	MMG 4 & F N
T015S	Dli pi CL HeBi WdBHelr p uDL W(us 4 (	/) TN6	MMG 4 & F N
21T,6	4 cdoV lmV ht i vH8HCenuloe 4 cdoV HmoBdHOca(	M. &	MMG 4 & F N
300,0	&eloephloe 4 cdoV HmoBdHOca	M. &	MMG 4 & F N
31N,0	. i dr cCodHni ul4 (	M. &	MMG 4 & F N
x W2x W3 4 HC	x lmdoBi ehx lndHni -x lndni	M. &	MMG 4 & F N
200,7 L i 8 N,N	Ri rHCp ul4 . (	M. &	MMG 4 & F N
200,T	Ri rHCp ul4 . jR / (	M. &	MMG 4 & F N
/ R 23N0S	GorHCt HdAei pp uHp 4 H4 W3(ba r HCrmCHnoe	/ R	MMG 4 & F N
166N&	t MR HeA / s G-t MR	166N&	MMG 4 & F N
21T,6 4 L 3	4 cdoV lmV hGd8HCenu4 HCrmCHnoe(	M. &	MMG 4 & F N
350,1	x lmdoBi eh&V V oelH	M. &	MMG 4 & F N
Ki CHAH 01	4 aHelAi hGorHCt&r lA Dlppor lHbC HeA Gclor aHeHni	M. &	MMG 4 & F N
/ R 2130S	GmdblAlna	/ R	MMG 4 & F N
/ R 2510S	4 oeAmr n8lnah/ Ci r lflr 4 oeAmr nHeri	/ R	MMG 4 & F N
/ R 25N04	/ oCAphGorHCDlppoC8i A uGD / (	/ R	MMG 4 & F N
/ R 25N0D	/ oCAphGorHC/ mpCi eAi A uG/ / (	/ R	MMG 4 & F N
/ R 25N0g	/ oCAph/ i mCHbC	/ R	MMG 4 & F N
/ R 5210S	SWDh5-DHa	/ R	MMG 4 & F N
/ R 5310D	WdBHelr 4 HdboehGorHCuGW4 (	/ R	MMG 4 & F N
/ R 55N04	Ri ncaCei SCni &r n8i / mbprHeri p uR S&/ (	/ R	MMG 4 & F N
DNN6N	. HdHr C / lzi Dlpndbmnoe of 4 HnHCarlr R Hni dHCuFHpi dCBcnpr Hmi deB(	&/ GR	MMG 4 & F N
166N&	t MR HeA / s G-t MR u&qmi omp(	166N&	MMG 4 & F N
200,7	. d CHdHnoehGorHCL i r o8i dHbC Ri rHCp	M. &	MMG 4 & F N
200,T	. d CHdHnoehGorHCL i r o8i dHbC Ri rHCp	M. &	MMG 4 & F N
35104	FlqmlA-FlqmlA MvndHr nloe u/ i CHdHnoda gmeei C	/) TN6	MMG 4 & F N
50304	. mdBi HeA GdHO	/) TN6	MMG 4 & F N
625	FlqmlA-FlqmlA MvndHr nloe	M. &	MMG 4 & F N
SWD . d O	. d CHdHnoehSWD	/ R	MMG 4 & F N
DlprnCC&V V oelH	DlprnCCHnoeh&V V oelH	x oei	MMG 4 & F N
gl0dHnoe	/ HV OC gl0dHnoe	x oei	MMG 4 & F N
/ R 55N04	. d CHdHnoehRi ncaCei SCni &r n8i / mbprHeri p uR S&/ (	/ R	MMG 4 & F N

Protocol References:

166N& = M. &-T21-9T-002
&/ GR = &/ GR leni deHnoeHC
M. & = U/ Me8ldoeV i enHC. dbni r nloe &Bi er a
x oei = x oei
/ R = "/ nHeAHdA Ri ncoAp godGci MvHV leHnoe Wf) Hni d&eA) Hpni wHni d"
/) TN6 = "Gi pnRi ncoAp godM8HCnHneB / oCA) Hpni h. caplr HCj4 ci V lr HCRi ncoAp"hGcldA MAlnoehx o8i V bi d19T6 &eA lnp UOAHni p,

Laboratory References:

MMG 4 & F N = Mmdoflep 4 HCprli eri Gmpnleh2TN1 Dow &8i emi hGmpnleh4 & 927T0hGMF u71N(T95-5N9N

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132336-1	EPBLLC_20230323	Water	03/23/23 10:15	03/23/23 19:20
570-132336-2	TB-20230323-1	Water	03/23/23 10:15	03/23/23 19:20

Loc: 570
132336

570-132336 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230323	3/23/23	1015	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
					3																					Meter Serial #
TB_20230323-1	3/23/23	1015	TB	WM	1	N	N														x					Time of Readings 1015
																										DO (mg/L) 13.53
																										pH 8.21
																										Temp (°C/°F) 10.96°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~EDF#37014595~~ ~~EDF #S7013187600~~ ECI #S7014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by: Michelle Dallelek	Company: H&A	Date/Time: 3/23/23 1600	Received by: EC 3/23/23	Date/Time: 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.7/1.7 2.8/2.8 1.9/1.9
SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/7/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230323	3/23/23	1015	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1015	TB	WM	3 1	N	N				X																	
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	3	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Ballalat	Company: H&A	Date/Time: 3/23/23 1600	Receiv		Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC2019/2020VERSION3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132336-1

Login Number: 132336
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132336-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

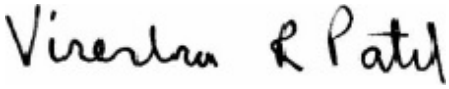
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-2

Qualifiers

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-2

Job ID: 570-132336-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132336-2

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7°C, 1.9°C and 2.8°C

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-2

Client Sample ID: EPBLLC_20230323

Lab Sample ID: 570-132336-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.030		0.0025	0.00040	ug/L	5		1631E	Total/NA
Mercury	0.0027	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.030		0.0025	0.00040	ug/L			03/29/23 16:30	5

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0027	MB	0.00050	0.000079	ug/L			03/29/23 16:42	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-421801/26
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/29/23 16:46	1

Lab Sample ID: MB 580-421801/27
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/29/23 16:50	1

Lab Sample ID: MB 580-421801/29
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/29/23 16:59	1

Lab Sample ID: LCS 580-421801/30
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00492		ug/L		98	77 - 123		

Lab Sample ID: LCSD 580-421801/31
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00484		ug/L		97	77 - 123	2	24

Lab Sample ID: MB 580-421483/1-A
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000916	J,DX	0.00050	0.000079	ug/L			03/29/23 15:52	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-2

Metals

Filtration Batch: 421483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Dissolved	Water	Filtration	
MB 580-421483/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 421801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Dissolved	Water	1631E	421483
570-132336-1	EPBLLC_20230323	Total/NA	Water	1631E	
MB 580-421483/1-A	Method Blank	Dissolved	Water	1631E	421483
MB 580-421801/26	Method Blank	Total/NA	Water	1631E	
MB 580-421801/27	Method Blank	Total/NA	Water	1631E	
MB 580-421801/29	Method Blank	Total/NA	Water	1631E	
LCS 580-421801/30	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-421801/31	Lab Control Sample Dup	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-2

Client Sample ID: EPBLLC_20230323
Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	421483	03/27/23 12:42	AJD	EET SEA
Dissolved	Analysis	1631E		1			421801	03/29/23 16:42	D1C	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		5			421801	03/29/23 16:30	D1C	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132336-2
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132336-1	EPBLLC_20230323	Water	03/23/23 10:15	03/23/23 19:20

Loc: 570
132336

570-132336 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230323	3/23/23	1015	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230323-1	3/23/23	1015	TB	WM	3	N	N													x						Time of Readings 1015
																										DO (mg/L) 13.53
																										pH 8.21
																										Temp (°C/°F) 10.96°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~EDF #37014595~~ ECI #37014595 ECI #57014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by: Michelle Dallelek	Company: H&A	Date/Time: 3/23/23 1600	Received by: EC 3/23/23	Date/Time: 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.7/1.7 2.8/2.8 1.9/1.9
SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230323	3/23/23	1015	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1015	TB	WM	3 1	N	N				X																	
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	3	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Ballalat	Company: H&A	Date/Time: 3/23/23 1600	Receiv		Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC2019/2020VERSION3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212456.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-132336-2
Address: 5755 8th Street East,	Due Date Requested: 4/10/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/24/23 9:3	ET	KHosley	3/25/23 0915	ETL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: IR9 = 3.0/3.3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132336-2

Login Number: 132336
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132336-2

Login Number: 132336
List Number: 3
Creator: Deebach, Andrew J

List Source: Eurofins Seattle
List Creation: 03/27/23 12:16 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/9/2023 10:02:36 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132336-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

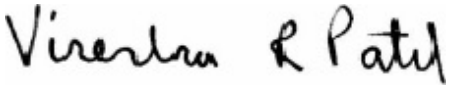
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132336-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132336-3

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.8º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-3

Method	Method Description	Protocol	Laboratory
Subcontract	Quant-Tray - E. Coli - level 4 required	None	Enthalpy

Protocol References:

None = None

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132336-1	EPBLLC_20230323	Water	03/23/23 10:15	03/23/23 19:20

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 482180
Report Level: IV
Report Date: 04/04/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Project: BOEING NPDES SSFL - (570-132336-1) Boeing SSFL ISRA and BMP - Project #57014595

Authorized for release by:

Quynhgiao Le

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	Lab Job #: Project No: Location: Date Received:	482180 BOEING NPDES SSFL (570-132336-1) Boeing SSFL ISRA and BMP - Project #57014595 03/24/23

Sample ID	Lab ID	Collected	Matrix
EPBLLC_20230323 (570-1332336-1)	482180-001	03/23/23 10:15	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	482180
	Project No:	BOEING NPDES SSFL
	Location:	(570-132336-1) Boeing SSFL ISRA and BMP - Project #57014595
	Date Received:	03/24/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/24/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

482180

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212453.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132336-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify); Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									- V RENDR 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* ____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by:	Date/Time: 3-24-23 9:48	Company EC	Received by:	Date/Time: 3/24/23 0948	Company EM
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

4/9/2023

ICOC No:
570-212453

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins Calscience

Project: Boeing SSFL ISRA and BMP

Date Received: 3/24/23

Sampler's Name Present: ☐ Yes ☑ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler) :

Sample Temp (°C), One from each cooler: #1: 3.4 #2: #3: #4:

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information:

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other

Cooler Temp (°C): #1: 1.8 #2: #3: #4:

Section 4	YES	NO	N/A
Was a COC received?	✔		
Are sample IDs present?	✔		
Are sampling dates & times present?	✔		
Is a relinquished signature present?	✔		
Are the tests required clearly indicated on the COC?	✔		
Are custody seals present?		✔	
If custody seals are present, were they intact?			✔
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✔		
Did all samples arrive intact? If no, indicate in Section 4 below.	✔		
Did all bottle labels agree with COC? (ID, dates and times)	✔		
Were the samples collected in the correct containers for the required tests?	✔		
Are the containers labeled with the correct preservatives?	✔		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✔
Was a sufficient amount of sample submitted for the requested tests?	✔		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: Date/Time

☐ Email (email sent to/on): /

Project Manager's response:

Completed By: Date: 3/24/23

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 482180 **Project#:** BOEING NPDES SSFL

Client: Eurofins Calscience Tustin **Location:** (570-132336-1) Boeing SSFL ISRA an...

Field ID:	EPBLLC_20230323 (570-1332336-1)	**Batch#:**	310429	**Analyzed:**	03/25/23 09:40
Lab ID:	482180-001	**Sampled:**	03/23/23 10:15	**Prep:**	
Matrix:	Water	**Received:**	03/24/23	**Analysis:**	SM 9223Bb
Dil n Fac:	1.000	**Prepared:**	03/24/23 14:18	**Analyst:**	VLC

48028-1-2 Analyte	Result	RL	Units	Qual
Coliform, E. Coli	**4-**	1.0	MPN/100ml	H

Legend

H: Holding time was exceeded

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: VC Prep Date/Time: 3/24/23 1418 QC Batch ID: 316429 Batch Page 1 of 1

Read Analyst: JA Read Date/Time 3/25/23 0940

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: HU430 Pipette Lot #: A104193/A104222/A104170

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 3/1/23 Bottle Lot #: DU0060 Comparator Lot #: HU148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 35.4°C 1437 Incubator Out, Temp/Time: 35.3°C 0940

Fecal Coliform: Water Bath ID: NA Water Bath In, Temp/Time: NA Water Bath Out, Temp/Time: NA

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		482181-001	1x	49	48	>2419.6	>2400	49	21	365.4	360					CA-01
		↓	10x	49	33	727.0	7300	18	3	25.6	260					↓
			100x	40	8	93.3	9300	1	0	1.0	100					
		482180-001	1x	49	48	>2419.6	>2400	27	2	40.4	40					EU-01
		↓	10x	49 ~~27~~ JA 3/25/23	29	579.4	5800 ~~579.6~~ JA 3/25/23	5	0	5.2	52					↓
			100x	25	2	36.4	3600	1	0	1.0	100					
		482177-001	1x	49	48	>2419.6	>2400	42	10	110.6	110					EN-01
		↓	10x	49	39	1046.2	10,000	6	0	6.3	63					↓
			100x	38	8	83.9	8400	0	0	<1	<100					
						JA 3/25/23										
Quality Control		**Culture ID**														
Positive +/+ (E. Coli)		3/19/23		49	48	>2419.6	>2400	49	48	>2419.6	>2400					
Positive +/- (K. Pneumonia)		↓		49	48	>2419.6	>2400	0	0	<1	<1					
Negative -/- (P. Aeruginosa)				0	0	<1	<1	0	0	<1	<1					

Data Entered By: JA 3/25/23 Data Reviewed By:

Loc: 570
132336

570-132336 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230323	3/23/23	1015	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
					3																					
TB_20230323-1	3/23/23	1015	TB	WM	1	N	N														x					
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings

Meter Serial #

Time of Readings 1015

DO (mg/L) 13.53

pH 8.21

Temp (°C/°F) 10.96°C

TRC (mg/L)

Checked by: MMD

Date/Time: 1300

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~EDF#37014595~~ ECI #37014595 ECI #37014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by: Michelle Dallalek	Company: H&A	Date/Time: 3/23/23 1600	Received by: EC 3/23/23	Date/Time: 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.7/1.7 2.8/2.8 1.9/1.9
SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/9/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Lab Sampling:
H&A Project Number : 129095-020-001-06				Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230323	3/23/23	1015	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1015	TB	WM	3 1	N	N				X																	
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	3	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Ballalat	Company: H&A	Date/Time: 3/23/23 1600	Receiv		Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC2019/2020VERSION3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132336-3

Login Number: 132336
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/26/2023 8:23:00 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132336-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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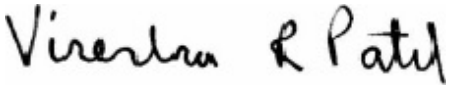

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Authorized for release by
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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-4

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132336-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132336-4

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7°C, 1.9°C and 2.8°C

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: EPBLLC_20230323 (570-132336-1), (CCV 320-669579/17) and (MB 320-668853/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: (CCV 320-670020/1), (LCS 320-668853/2-A) and (LCSD 320-668853/3-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Haynes & Associates, Inc. Job ID: 570-124226-C
Project/Site: Benton Fuel Bulk Plant Dyer 3

Client Sample ID: EPBLLC_20230323 Lab Sample ID: 570-132336-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,4,2,C,7,8-aul DD	0P0000011	J.Dq 9	0P000050	0P000000012	TFSR	1		1612g	NoHyiSXd
1,4,2,C,6,7,8-axl DD	0P0000041	J.Dq 3 g	0P000050	0P000000044	TFSR	1		1612g	NoHyiSXd
1,4,2,C,6,7,8-axl DL	0P00000025	J.Dq 9	0P000050	0P0000000081	TFSR	1		1612g	NoHyiSXd
1,4,2,C,7,8,p-axl DL	0P0000002p	J.Dq 9	0P000050	0P00000000p1	TFSR	1		1612g	NoHyiSXd
Ol DD	0P00001C	J.Dq 3 g	0P00010	0P000000008p	TFSR	1		1612g	NoHyiSXd
Ol DL	0P000004C	J.Dq 3 g 9	0P00010	0P00000000p6	TFSR	1		1612g	NoHyiSXd
NoHyi aul DD	0P0000011	J.Dq 9	0P000050	0P000000014	TFSR	1		1612g	NoHyiSXd
NoHyi axl DD	0P00000C2	J.Dq 3 g 9	0P000050	0P000000044	TFSR	1		1612g	NoHyiSXd
NoHyi axl DL	0P000000p8	J.Dq 9	0P000050	0P0000000081	TFSR	1		1612g	NoHyiSXd

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBLLC920230323
Date Colle_ted: 03/23/23 10:15
Date Re_eiWed: 03/23/23 1c:20

Lab Sample ID: 570-132336-1
Matrix: 4 ater

Analvte	Result	z ualiUer	RL	EDL	y nit	D	Prepared	Analv8ed	Dil Fa_
2,3,7,8-TCDD	ND		0.000010	0.00000015	ug/L		04/20/23 06:26	04/23/23 09:07	1
2,3,7,8-TCDF	ND		0.000010	0.00000014	ug/L		04/20/23 06:26	04/23/23 09:07	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000015	ug/L		04/20/23 06:26	04/23/23 09:07	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000076	ug/L		04/20/23 06:26	04/23/23 09:07	1
2,3,4,7,8-PeCDF	ND		0.000050	0.00000085	ug/L		04/20/23 06:26	04/23/23 09:07	1
1.2.3.X.7.q-HxCDD	**0Q000011**	**f .DJ ,**	0.000050	0.00000013	ug/L		04/20/23 06:26	04/23/23 09:07	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000013	ug/L		04/20/23 06:26	04/23/23 09:07	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000012	ug/L		04/20/23 06:26	04/23/23 09:07	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000048	ug/L		04/20/23 06:26	04/23/23 09:07	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000050	ug/L		04/20/23 06:26	04/23/23 09:07	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.00000052	ug/L		04/20/23 06:26	04/23/23 09:07	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000046	ug/L		04/20/23 06:26	04/23/23 09:07	1
1.2.3.X.6.7.q-HpCDD	**0Q000021**	**f .DJ MB**	0.000050	0.00000022	ug/L		04/20/23 06:26	04/23/23 09:07	1
1.2.3.X.6.7.q-HpCDF	**0Q0000035**	**f .DJ ,**	0.000050	0.00000081	ug/L		04/20/23 06:26	04/23/23 09:07	1
1.2.3.X.7.q.c-HpCDF	**0Q000003c**	**f .DJ ,**	0.000050	0.00000091	ug/L		04/20/23 06:26	04/23/23 09:07	1
OCDD	**0Q0001X**	**f .DJ MB**	0.00010	0.00000089	ug/L		04/20/23 06:26	04/23/23 09:07	1
OCDF	**0Q00002X**	**f .DJ MB ,**	0.00010	0.00000096	ug/L		04/20/23 06:26	04/23/23 09:07	1
Total TCDD	ND		0.000010	0.00000015	ug/L		04/20/23 06:26	04/23/23 09:07	1
Total TCDF	ND		0.000010	0.00000014	ug/L		04/20/23 06:26	04/23/23 09:07	1
Total PeCDD	ND		0.000050	0.00000015	ug/L		04/20/23 06:26	04/23/23 09:07	1
Total PeCDF	ND		0.000050	0.00000076	ug/L		04/20/23 06:26	04/23/23 09:07	1
Total HxCDD	**0Q000011**	**f .DJ ,**	0.000050	0.00000012	ug/L		04/20/23 06:26	04/23/23 09:07	1
Total HxCDF	ND		0.000050	0.00000046	ug/L		04/20/23 06:26	04/23/23 09:07	1
Total HpCDD	**0Q0000X3**	**f .DJ MB ,**	0.000050	0.00000022	ug/L		04/20/23 06:26	04/23/23 09:07	1
Total HpCDF	**0Q00000cq**	**f .DJ ,**	0.000050	0.00000081	ug/L		04/20/23 06:26	04/23/23 09:07	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*75*		*25 - 164*	*04/20/23 06:26*	*04/23/23 09:07*	*1*
13C-2,3,7,8-TCDF	*70*		*24 - 169*	*04/20/23 06:26*	*04/23/23 09:07*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*25 - 181*	*04/20/23 06:26*	*04/23/23 09:07*	*1*
13C-1,2,3,7,8-PeCDF	*77*		*24 - 185*	*04/20/23 06:26*	*04/23/23 09:07*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBLLC920230323
Lab Sample ID: 570-132336-1
Date Colle_ted: 03/23/23 10:15
Matrix: 4 ater
Date Re_eiWed: 03/23/23 1c:20

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	75		21 - 178	04/20/23 06:26	04/23/23 09:07	1
13C-1,2,3,4,7,8-HxCDD	81		32 - 141	04/20/23 06:26	04/23/23 09:07	1
13C-1,2,3,6,7,8-HxCDD	83		28 - 130	04/20/23 06:26	04/23/23 09:07	1
13C-1,2,3,4,7,8-HxCDF	75		26 - 152	04/20/23 06:26	04/23/23 09:07	1
13C-1,2,3,6,7,8-HxCDF	77		26 - 123	04/20/23 06:26	04/23/23 09:07	1
13C-1,2,3,7,8,9-HxCDF	74		29 - 147	04/20/23 06:26	04/23/23 09:07	1
13C-2,3,4,6,7,8-HxCDF	77		28 - 136	04/20/23 06:26	04/23/23 09:07	1
13C-1,2,3,4,6,7,8-HpCDD	84		23 - 140	04/20/23 06:26	04/23/23 09:07	1
13C-1,2,3,4,6,7,8-HpCDF	70		28 - 143	04/20/23 06:26	04/23/23 09:07	1
13C-1,2,3,4,7,8,9-HpCDF	71		26 - 138	04/20/23 06:26	04/23/23 09:07	1
13C-OCDD	67		17 - 157	04/20/23 06:26	04/23/23 09:07	1
13C-OCDF	62		17 - 157	04/20/23 06:26	04/23/23 09:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	89		35 - 197	04/20/23 06:26	04/23/23 09:07	1

Surrogate Summary

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	37TCDD (35-197)	Percent Surrogate Recovery (Acceptance Limits)						
570-12422C-1	6/ FMM k40420242	38							
_ F 240-CC3352B1-r	_ t a oc Fe&HT	8C							

Surrogate Legend

27=i DD m27i e1-4P2P7P3-=i DD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	37TCDD (31-191)	Percent Surrogate Recovery (Acceptance Limits)						
M g 240-CC3352B4-r	M&b i oHaboeg &p ue1	103							
M gD 240-CC3352B2-r	M&b i oHaboeg &p ue1 DEu	87							

Surrogate Legend

27=i DD m27i e1-4P2P7P3-=i DD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-132336-1	EPBLLC_20230323	75	70	76	77	75	81	83	75
MB 320-668853/1-A	Method Blank	69	64	65	64	66	68	68	60

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	OCDD (17-157)	OCDF (17-157)
570-132336-1	EPBLLC_20230323	77	74	77	84	70	71	67	62
MB 320-668853/1-A	Method Blank	60	57	61	69	54	56	50	46

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-668853/2-A	Lab Control Sample	71	82	61	67	69	57	56	63
LCSD 320-668853/3-A	Lab Control Sample Dup	61	100	55	65	60	69	73	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	OCDD (13-199)	OCDF (13-199)
LCS 320-668853/2-A	Lab Control Sample	61	66	66	57	56	63	71	69
LCSD 320-668853/3-A	Lab Control Sample Dup	104	111	113	82	95	110	138	177

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-4

HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-668853/1-A
Matrix: Water
Analysis Batch: 669579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 668853

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.000000063	ug/L		04/20/23 06:26	04/22/23 23:29	1
2,3,7,8-TCDF	ND		0.000010	0.000000062	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000010	ug/L		04/20/23 06:26	04/22/23 23:29	1
2,3,4,7,8-PeCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,7,8-HxCDD	ND		0.000050	0.00000030	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000030	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000028	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000018	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000017	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.00000019	ug/L		04/20/23 06:26	04/22/23 23:29	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000017	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,6,7,8-HpCDD	0.00000144	J,DX q	0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,6,7,8-HpCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1
OCDD	0.00000787	J,DX q	0.00010	0.00000015	ug/L		04/20/23 06:26	04/22/23 23:29	1
OCDF	0.00000368	J,DX	0.00010	0.00000027	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total TCDD	ND		0.000010	0.00000063	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total TCDF	ND		0.000010	0.00000062	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total PeCDD	ND		0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total PeCDF	ND		0.000050	0.00000010	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HxCDD	ND		0.000050	0.00000028	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HxCDF	ND		0.000050	0.00000017	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HpCDD	0.00000187	J,DX q	0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HpCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*25 - 164*	*04/20/23 06:26*	*04/22/23 23:29*	*1*
13C-2,3,7,8-TCDF	*64*		*24 - 169*	*04/20/23 06:26*	*04/22/23 23:29*	*1*
13C-1,2,3,7,8-PeCDD	*65*		*25 - 181*	*04/20/23 06:26*	*04/22/23 23:29*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-668853/1-A
Matrix: Water
Analysis Batch: 669579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 668853

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	64		24 - 185	04/20/23 06:26	04/22/23 23:29	1
13C-2,3,4,7,8-PeCDF	66		21 - 178	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,7,8-HxCDD	68		32 - 141	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,6,7,8-HxCDD	68		28 - 130	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,7,8-HxCDF	60		26 - 152	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,6,7,8-HxCDF	60		26 - 123	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,7,8,9-HxCDF	57		29 - 147	04/20/23 06:26	04/22/23 23:29	1
13C-2,3,4,6,7,8-HxCDF	61		28 - 136	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,6,7,8-HpCDD	69		23 - 140	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,6,7,8-HpCDF	54		28 - 143	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,7,8,9-HpCDF	56		26 - 138	04/20/23 06:26	04/22/23 23:29	1
13C-OCDD	50		17 - 157	04/20/23 06:26	04/22/23 23:29	1
13C-OCDF	46		17 - 157	04/20/23 06:26	04/22/23 23:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	96		35 - 197	04/20/23 06:26	04/22/23 23:29	1

Lab Sample ID: LCS 320-668853/2-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 668853

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000185		ug/L		93	67 - 158		
2,3,7,8-TCDF			0.000200	0.000189		ug/L		95	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000830		ug/L		83	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000860		ug/L		86	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000888		ug/L		89	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000836		ug/L		84	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.000849		ug/L		85	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000844		ug/L		84	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000842		ug/L		84	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000841		ug/L		84	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000831		ug/L		83	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000824		ug/L		82	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000828		ug/L		83	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000830		ug/L		83	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000803		ug/L		80	78 - 138		
OCDD			0.00200	0.00159		ug/L		79	78 - 144		
OCDF			0.00200	0.00166		ug/L		83	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	71		20 - 175
13C-2,3,7,8-TCDF	82		22 - 152
13C-1,2,3,7,8-PeCDD	61		21 - 227
13C-1,2,3,7,8-PeCDF	67		21 - 192
13C-2,3,4,7,8-PeCDF	69		13 - 328
13C-1,2,3,4,7,8-HxCDD	57		21 - 193
13C-1,2,3,6,7,8-HxCDD	56		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-668853/2-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 668853

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	63		19 - 202
13C-1,2,3,6,7,8-HxCDF	61		21 - 159
13C-1,2,3,7,8,9-HxCDF	66		17 - 205
13C-2,3,4,6,7,8-HxCDF	66		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	57		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	56		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	63		20 - 186
13C-OCDD	71		13 - 199
13C-OCDF	69		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	108		31 - 191

Lab Sample ID: LCSD 320-668853/3-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 668853

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000245		ug/L		122	67 - 158	28	50
2,3,7,8-TCDF			0.000200	0.000286		ug/L		143	75 - 158	41	50
1,2,3,7,8-PeCDD			0.00100	0.000869		ug/L		87	70 - 142	5	50
1,2,3,7,8-PeCDF			0.00100	0.00109		ug/L		109	80 - 134	24	50
2,3,4,7,8-PeCDF			0.00100	0.00116		ug/L		116	68 - 160	27	50
1,2,3,4,7,8-HxCDD			0.00100	0.00110		ug/L		110	70 - 164	27	50
1,2,3,6,7,8-HxCDD			0.00100	0.00112		ug/L		112	76 - 134	28	50
1,2,3,7,8,9-HxCDD			0.00100	0.00109		ug/L		109	64 - 162	25	50
1,2,3,4,7,8-HxCDF			0.00100	0.00118		ug/L		118	72 - 134	33	50
1,2,3,6,7,8-HxCDF			0.00100	0.00115		ug/L		115	84 - 130	31	50
1,2,3,7,8,9-HxCDF			0.00100	0.00105		ug/L		105	78 - 130	23	50
2,3,4,6,7,8-HxCDF			0.00100	0.00104		ug/L		104	70 - 156	23	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00102		ug/L		102	70 - 140	21	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00102		ug/L		102	82 - 122	20	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00101		ug/L		101	78 - 138	23	50
OCDD			0.00200	0.00207		ug/L		104	78 - 144	26	50
OCDF			0.00200	0.00212		ug/L		106	63 - 170	25	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	61		20 - 175
13C-2,3,7,8-TCDF	100		22 - 152
13C-1,2,3,7,8-PeCDD	55		21 - 227
13C-1,2,3,7,8-PeCDF	65		21 - 192
13C-2,3,4,7,8-PeCDF	60		13 - 328
13C-1,2,3,4,7,8-HxCDD	69		21 - 193
13C-1,2,3,6,7,8-HxCDD	73		25 - 163
13C-1,2,3,4,7,8-HxCDF	98		19 - 202
13C-1,2,3,6,7,8-HxCDF	104		21 - 159
13C-1,2,3,7,8,9-HxCDF	111		17 - 205
13C-2,3,4,6,7,8-HxCDF	113		22 - 176

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-668853/3-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 668853

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	82		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	95		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	110		20 - 186
13C-OCDD	138		13 - 199
13C-OCDF	177		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	97		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-4

Specialty Organics

Prep Batch: 668853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Total/NA	Water	1613B	
MB 320-668853/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-668853/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-668853/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 669579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Total/NA	Water	1613B	668853
MB 320-668853/1-A	Method Blank	Total/NA	Water	1613B	668853

Analysis Batch: 670020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-668853/2-A	Lab Control Sample	Total/NA	Water	1613B	668853
LCSD 320-668853/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	668853

Lab Chronicle

Client: Haley & Aldrich, Inc.
j ro/ectSBite: goeinF BBLRIBMA and gp j

Job ID: 570-124226-P

Client Sample ID: EPBLLC_20230323

Date Collected: 03/23/23 10:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132336-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TotalSOA	j re3	1612g			1001.5 NR	40.0 mR	668852	0PS4/0S/42 06:46	gRM	EET BAC
TotalSOA	Analyuiu	1612g		1	1 BaN3le	1 BaN3le	66s57s	0PS4/2S/42 0s:07	GMg	EET BAC

InutrmNent ID: DLB 1

Laboratory References:

EET BAC = Emrofinu BacraNento, 880 Miveruide j arkway, Weut BacraNento, CA s5605, TER(s16)272-5600

Emrofinu Calucience

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-4

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	06-01-23
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-24
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-24
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-24
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
USDA	US Federal Programs	P330-18-00239	02-28-26
Utah	NELAP	CA000442021-12	02-28-23 *
Virginia	NELAP	460278	03-14-24
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-4

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132336-1	EPBLLC_20230323	Water	03/23/23 10:15	03/23/23 19:20

Loc: 570
132336

570-132336 Chain of Custody

ns

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230323	3/23/23	1015	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230323-1	3/23/23	1015	TB	WM	3	N	N														x					Time of Readings 1015
																										DO (mg/L) 13.53
																										pH 8.21
																										Temp (°C/°F) 10.96°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~EDF#37014595~~ ECI #37014595 ECI #37014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by: Michelle Dallelek	Company: H&A	Date/Time: 3/23/23 1600	Received by: EC 3/23/23	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.7/1.7 2.8/2.8 1.9/1.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/26/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230323	3/23/23	1015	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1015	TB	WM	3 1	N	N				X																	
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	3	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by:	Company: H&A	Date/Time: 3/23/23 1600	Receiv		Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC2019/2020VERSION3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212524.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-132336-4
Address: 880 Riverside Parkway,	Due Date Requested: 4/10/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605	PO #:			
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	WO #:			
Email:	Project #: 57014595			
Project Name: Boeing SSFL ISRA and BMP	SSOW#:			
Site:				

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/24/23 15:00	ELT		3/25/23-910	ELTSAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

4/26/2023

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132336-4

Login Number: 132336
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132336-4

Login Number: 132336
List Number: 2
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 03/25/23 10:43 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132336-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

Job Notes

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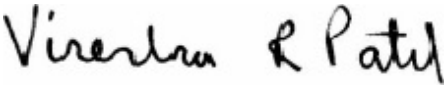
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-5

Job ID: 570-132336-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132336-5

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 5/12/2023. The report (revision 1) is being revised due to: The clients office requested the full EPA 608.3 list to be reported..

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.8º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods EPA 608 - Pesticides/PCBs - PP list, VOCs-2CVE only (E624), Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-5

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs-2CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132336-1	EPBLLC_20230323	Water	03/23/23 10:15	03/23/23 19:20
570-132336-3	TB-20230323-2	Water	03/23/23 10:15	03/23/23 19:20

Certificate of Analysis

FINAL REPORT

Work Orders: 3C24118

Project: 570-132336-5

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 6/02/2023
Received Date: 3/24/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #: 570-132336-5
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/24/23 with the Chain-of-Custody document. The samples were received in good condition, at 2.4 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: EPBLLC_20230323 (570-132336-1) Sampled: 03/23/23 10:15 by Client

3C24118-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C2585 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/30/23 07:54				**Analyst:** RJG
4,4´-DDD	ND	0.0027	0.050	ug/l	1	04/20/23	
4,4´-DDE	ND	0.0018	0.050	ug/l	1	04/20/23	BS-04
4,4´-DDT	ND	0.0028	0.050	ug/l	1	04/20/23	
Aldrin	ND	0.0010	0.050	ug/l	1	04/20/23	
alpha-BHC	ND	0.0011	0.050	ug/l	1	04/20/23	
Aroclor 1016	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1221	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1232	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1242	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1248	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1254	ND	0.50	1.0	ug/l	1	04/20/23	
Aroclor 1260	ND	0.50	1.0	ug/l	1	04/20/23	
beta-BHC	ND	0.0015	0.050	ug/l	1	04/20/23	
Chlordane (tech)	ND	0.10	0.50	ug/l	1	04/20/23	
delta-BHC	ND	0.0019	0.050	ug/l	1	04/20/23	
Dieldrin	ND	0.0017	0.050	ug/l	1	04/20/23	
Endosulfan I	ND	0.0019	0.050	ug/l	1	04/20/23	
Endosulfan II	ND	0.0019	0.050	ug/l	1	04/20/23	
Endosulfan sulfate	ND	0.0013	0.050	ug/l	1	04/20/23	
Endrin	ND	0.0017	0.050	ug/l	1	04/20/23	

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www.wecklabs.com

Sample Results

(Continued)

Sample: EPBLLC_20230323 (570-132336-1)
3C24118-01 (Water)

Sampled: 03/23/23 10:15 by Client
(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C2585 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/30/23 07:54				**Analyst:** RJG
Endrin aldehyde	ND	0.0019	0.050	ug/l	1	04/20/23	
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l	1	04/20/23	
Heptachlor	ND	0.0023	0.050	ug/l	1	04/20/23	
Heptachlor epoxide	ND	0.0018	0.050	ug/l	1	04/20/23	
Methoxychlor	ND	0.0038	0.050	ug/l	1	04/20/23	BS-04
Toxaphene	ND	1.0	2.0	ug/l	1	04/20/23	
Surrogate(s)							
Decachlorobiphenyl	*73%*		*33-133*	*Conc: 0.0717*		*04/20/23*	
Tetrachloro-meta-xylene	*65%*		*32-130*	*Conc: 0.0639*		*04/20/23*	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2585-BLK1)					**Prepared: 03/30/23 Analyzed: 04/20/23**						
4,4´-DDD	ND	0.0027	0.050	ug/l							
4,4´-DDE	ND	0.0018	0.050	ug/l							
4,4´-DDT	ND	0.0028	0.050	ug/l							
Aldrin	ND	0.0010	0.050	ug/l							
alpha-BHC	ND	0.0011	0.050	ug/l							
Aroclor 1016	ND	0.029	1.0	ug/l							
Aroclor 1221	ND	0.060	1.0	ug/l							
Aroclor 1232	ND	0.083	1.0	ug/l							
Aroclor 1242	ND	0.095	1.0	ug/l							
Aroclor 1248	ND	0.083	1.0	ug/l							
Aroclor 1254	ND	0.040	1.0	ug/l							
Aroclor 1260	ND	0.055	1.0	ug/l							
beta-BHC	ND	0.0015	0.050	ug/l							
Chlordane (tech)	ND	0.043	0.50	ug/l							
delta-BHC	ND	0.0019	0.050	ug/l							
Dieldrin	ND	0.0017	0.050	ug/l							
Endosulfan I	ND	0.0019	0.050	ug/l							
Endosulfan II	ND	0.0019	0.050	ug/l							
Endosulfan sulfate	ND	0.0013	0.050	ug/l							
Endrin	ND	0.0017	0.050	ug/l							
Endrin aldehyde	ND	0.0019	0.050	ug/l							
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l							
Heptachlor	ND	0.0023	0.050	ug/l							
Heptachlor epoxide	ND	0.0018	0.050	ug/l							
Methoxychlor	ND	0.0038	0.050	ug/l							
Toxaphene	ND	0.085	2.0	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.109*			*ug/l*	*0.100*		*109*	*33-133*			
Tetrachloro-meta-xylene	*0.0687*			*ug/l*	*0.100*		*69*	*32-130*			
LCS (W3C2585-BS1)					**Prepared: 03/30/23 Analyzed: 04/20/23**						
4,4´-DDD	0.177	0.0027	0.050	ug/l	0.200		88	48-130			
4,4´-DDE	0.154	0.0018	0.050	ug/l	0.200		77	54-130			
4,4´-DDT	0.167	0.0028	0.050	ug/l	0.200		84	46-137			
Aldrin	0.164	0.0010	0.050	ug/l	0.200		82	54-130			
alpha-BHC	0.188	0.0011	0.050	ug/l	0.200		94	49-130			
beta-BHC	0.166	0.0015	0.050	ug/l	0.200		83	39-130			
delta-BHC	0.174	0.0019	0.050	ug/l	0.200		87	51-130			
Dieldrin	0.153	0.0017	0.050	ug/l	0.200		76	58-130			
Endosulfan I	0.186	0.0019	0.050	ug/l	0.200		93	57-141			
Endosulfan II	0.165	0.0019	0.050	ug/l	0.200		82	22-171			
Endosulfan sulfate	0.148	0.0013	0.050	ug/l	0.200		74	38-132			
Endrin	0.180	0.0017	0.050	ug/l	0.200		90	51-130			
Endrin aldehyde	0.157	0.0019	0.050	ug/l	0.200		79	18-130			

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www.wecklabs.com

Quality Control Results

(Continued)

Chlorinated Pesticides and/or PCBs by GC/ECD (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
LCS (W3C2585-BS1)					**Prepared: 03/30/23**	**Analyzed: 04/20/23**					
gamma-BHC (Lindane)	0.159	0.0015	0.050	ug/l	0.200		79	43-130			
Heptachlor	0.159	0.0023	0.050	ug/l	0.200		79	43-130			
Heptachlor epoxide	0.184	0.0018	0.050	ug/l	0.200		92	57-132			
Methoxychlor	0.145	0.0038	0.050	ug/l	0.200		73	50-130			
Surrogate(s)											
Decachlorobiphenyl	*0.109*			*ug/l*	*0.100*		*109*	*33-133*			
Tetrachloro-meta-xylene	*0.0731*			*ug/l*	*0.100*		*73*	*32-130*			
LCS Dup (W3C2585-BSD1)					**Prepared: 03/30/23**	**Analyzed: 04/20/23**					
4,4´-DDD	0.144	0.0027	0.050	ug/l	0.200		72	48-130	20	30	
4,4´-DDE	0.0929	0.0018	0.050	ug/l	0.200		46	54-130	49	30	BS-04
4,4´-DDT	0.128	0.0028	0.050	ug/l	0.200		64	46-137	27	30	
Aldrin	0.115	0.0010	0.050	ug/l	0.200		58	54-130	35	30	Q-12
alpha-BHC	0.119	0.0011	0.050	ug/l	0.200		60	49-130	44	30	Q-12
beta-BHC	0.119	0.0015	0.050	ug/l	0.200		60	39-130	33	30	Q-12
delta-BHC	0.151	0.0019	0.050	ug/l	0.200		75	51-130	14	30	Q-12
Dieldrin	0.123	0.0017	0.050	ug/l	0.200		61	58-130	22	30	
Endosulfan I	0.136	0.0019	0.050	ug/l	0.200		68	57-141	31	30	Q-12
Endosulfan II	0.136	0.0019	0.050	ug/l	0.200		68	22-171	19	30	
Endosulfan sulfate	0.126	0.0013	0.050	ug/l	0.200		63	38-132	16	30	
Endrin	0.121	0.0017	0.050	ug/l	0.200		61	51-130	39	30	Q-12
Endrin aldehyde	0.102	0.0019	0.050	ug/l	0.200		51	18-130	43	30	Q-12
gamma-BHC (Lindane)	0.125	0.0015	0.050	ug/l	0.200		63	43-130	23	30	
Heptachlor	0.128	0.0023	0.050	ug/l	0.200		64	43-130	21	30	
Heptachlor epoxide	0.145	0.0018	0.050	ug/l	0.200		72	57-132	24	30	
Methoxychlor	0.0916	0.0038	0.050	ug/l	0.200		46	50-130	45	30	BS-04
Surrogate(s)											
Decachlorobiphenyl	*0.102*			*ug/l*	*0.100*		*102*	*33-133*			
Tetrachloro-meta-xylene	*0.0662*			*ug/l*	*0.100*		*66*	*32-130*			

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634

www.wecklabs.com

Notes and Definitions

Item	Definition
BS-04	The recovery of this analyte in LCS or LCSD was outside control limit. Sample was accepted based on the remaining LCS, LCSD or LCS-LL.
Q-12	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on the percent recoveries and/or other acceptable QC data.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
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Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

3C24118

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132336-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132336-3)	3/23/23	10:15 Pacific		Water			X				3	See Attached Instructions
												Run past HT

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	3-24-23 14:47	C		3-24-23 14:47	Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		2.4°C T-0279

ICOC No:
570-212493

Containers

Count	Container Type	Preservative
5	Amber Glass 1 liter - unpreserved - Dis.	None
6	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (EPA 608 - Pesticides/PCBs - PP list)	Level IV package, MDL, EQUIS 5C
1	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	525.2- 24 hour extraction for Diaznon and Chyloriphrous- level IV package needed.
1	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV package, MDL, EQUIS 5C
1, 3	SUBCONTRACT	SUB (VOCs-2CVE only (E624))	Level IV package, MDL, EQUIS 5C

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: **3C24118**
WKO Logged by: Jerico Bolothanos
Samples Checked by: Lester Abad

Date/Time Received: 03/24/23 @ 14:47
# of Samples: 02
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	2.4°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	WET			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Received within holding time?	☒	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☐	☒	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres. tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot#
	Free Chlorine Tested <0.1 (Organics Analyses)	☒	☐	☐	Cl Test Strip Lot#
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot#
	pH adjusted for O&G	☐	☐	☐	pH Reading: Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☒	

PM Comments

Sample Receipt Checklist Prepared by:

Signature: *Lester Abad* Date: 03/24/23

Loc: 570
132336

570-132336 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230323	3/23/23	1015	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
					3																					Meter Serial #
TB_20230323-1	3/23/23	1015	TB	WM	1	N	N														x					Time of Readings 1015
																										DO (mg/L) 13.53
																										pH 8.21
																										Temp (°C/°F) 10.96°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~EDF#37014595~~ ECI #37014595 ECI #37014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by: Michelle Dallelek	Company: H&A	Date/Time: 3/23/23 1600	Received by: EC 3/23/23	Date/Time: 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.7/1.7 2.8/2.8 1.9/1.9
SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230323	3/23/23	1015	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1015	TB	WM	3 1	N	N				X																	
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	3	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return to Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley& Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Ballalat	Company: H&A	Date/Time: 3/23/23 1600	Receiv		Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC2019/2020VERSION3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132336-5

Login Number: 132336
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/26/2023 8:49:02 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132336-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

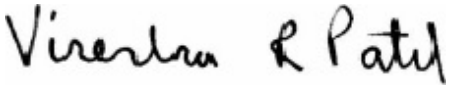
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-6

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132336-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132336-6

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.8º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132336-1	EPBLLC_20230323	Water	03/23/23 10:15	03/23/23 19:20

aquatic bioassay & consulting laboratories, inc

April 6, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	EPBLLC_20230323
DATE RECEIVED:	23 March - 2023
ABC LAB. NO.:	CSE0323.236

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = -17.32 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Report Date: 06 Apr-23 12:46 (p 1 of 1)
Test Code/ID: CSE0323.236 / 09-2753-7346

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	00-0583-7715	Test Type:	Reproduction-Survival (7d)	Analyst:			
Start Date:	23 Mar-23 15:29	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water		
Ending Date:	30 Mar-23 14:58	Species:	Ceriodaphnia dubia	Brine:	Not Applicable		
Test Length:	6d 23h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO	Age:	<24
Sample ID:	09-2754-7172	Code:	CSE0323.236	Project:			
Sample Date:	23 Mar-23 10:15	Material:	Sample Water	Source:	Bioassay Report		
Receipt Date:	23 Mar-23 14:05	CAS (PC):		Station:	EPBLLC_20230323		
Sample Age:	5h (4.3 °C)	Client:	Eurofins Calscience				

Single Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
11-3688-8407	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
03-3243-8069	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
11-3688-8407	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
03-3243-8069	Reproduction	Control Resp	21.65	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	21.65	18.63	24.67	0	29	1.444	6.459	29.83%	0.00%
100		20	25.4	24.32	26.48	21	29	0.515	2.303	9.07%	-17.32%

7d Survival Rate Detail — MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail — MD5: 9134B2F9D49CB288336CA1D813F2E589

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	21	22	24	15	14	27	0	25	21
		21	22	18	29	23	23	27	28	27	22
100		26	25	24	29	28	27	28	25	27	27
		27	23	27	23	23	21	21	27	25	25

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Report Date: 06 Apr-23 12:46 (p 1 of 2)
Test Code/ID: CSE0323.236 / 09-2753-7346

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	03-3243-8069	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:50	Analysis:	Parametric Bioequivalence-Two Sample	Status Level:	1
Edit Date:	04 Apr-23 12:47	MD5 Hash:	9134B2F9D49CB288336CA1D813F2E589	Editor ID:	009-702-627-3
Batch ID:	00-0583-7715	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	23 Mar-23 15:29	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	30 Mar-23 14:58	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 23h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	09-2754-7172	Code:	CSE0323.236	Project:	
Sample Date:	23 Mar-23 10:15	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	23 Mar-23 14:05	CAS (PC):		Station:	EPBLLC_20230323
Sample Age:	5h (4.3 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	27	7.64	0.8551	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	21.65	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	140.625	140.625	1	5.982	0.0192	Significant Effect
Error	893.35	23.5092	38			
Total	1033.97		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	4.061	7.353	0.0510	Equal Variances
	Mod Levene Equality of Variance Test	3.459	7.353	0.0706	Equal Variances
	Variance Ratio F Test	7.863	3.432	3.8E-05	Unequal Variances
Distribution	Anderson-Darling A2 Test	1.873	3.878	<1.0E-05	Non-Normal Distribution
	D'Agostino Kurtosis Test	4.262	2.576	2.0E-05	Non-Normal Distribution
	D'Agostino Skewness Test	4.733	2.576	<1.0E-05	Non-Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	40.57	9.21	<1.0E-05	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.196	0.1617	0.0005	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.8019	0.9236	<1.0E-05	Non-Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	21.65	18.63	24.67	22.4	0	29	1.444	29.83%	0.00%
100		20	25.4	24.32	26.48	25.2	21	29	0.515	9.07%	-17.32%

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	21	22	24	15	14	27	0	25	21
		21	22	18	29	23	23	27	28	27	22
100		26	25	24	29	28	27	28	25	27	27
		27	23	27	23	23	21	21	27	25	25

Analysis ID:	03-3243-8069	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:50	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	04 Apr-23 12:47	**MD5 Hash:**	9134B2F9D49CB288336CA1D813F2E589	**Editor ID:**	009-702-627-3

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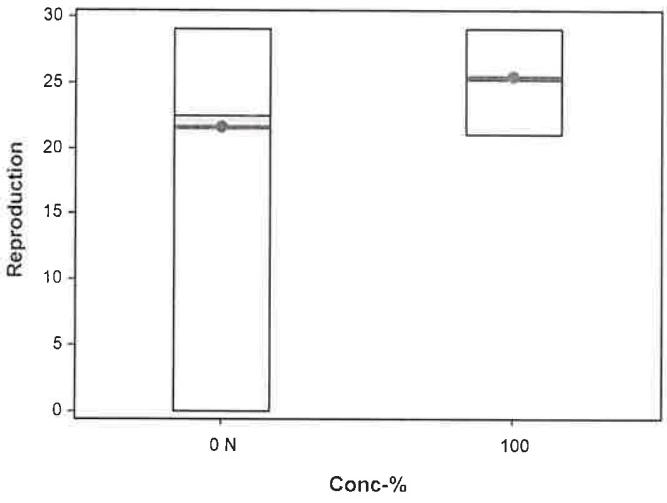
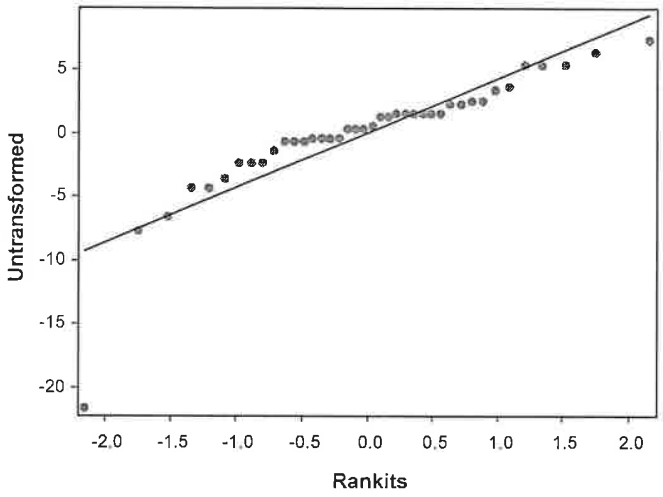




CETIS Analytical Report

Report Date: 06 Apr-23 12:46 (p 1 of 2)
Test Code/ID: CSE0323.236 / 09-2753-7346

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	11-3688-8407	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:50	Analysis:	Single 2x2 Contingency Table	Status Level:	1
Edit Date:	04 Apr-23 12:47	MD5 Hash:	E2FCA10CAEB5BD33B061F6901431A2E1	Editor ID:	009-702-627-3
Batch ID:	00-0583-7715	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	23 Mar-23 15:29	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	30 Mar-23 14:58	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	6d 23h	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	09-2754-7172	Code:	CSE0323.236	Project:	
Sample Date:	23 Mar-23 10:15	Material:	Sample Water	Source:	Bioassay Report
Receipt Date:	23 Mar-23 14:05	CAS (PC):		Station:	EPBLLC_20230323
Sample Age:	5h (4.3 °C)	Client:	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

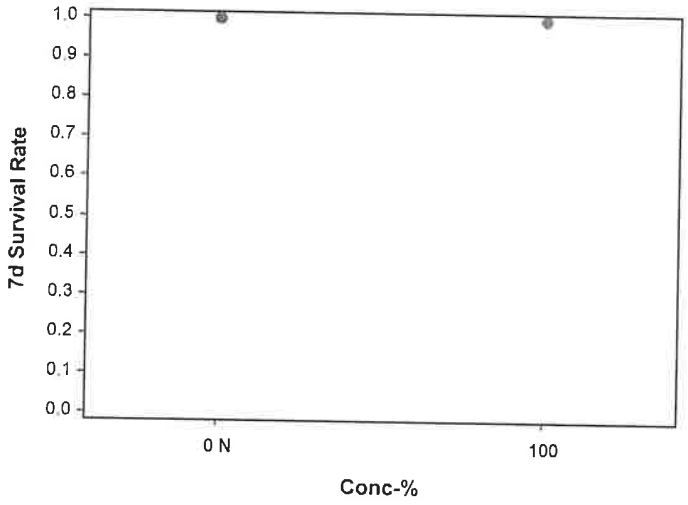
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Analysis ID:	11-3688-8407	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:50	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	04 Apr-23 12:47	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	009-702-627-3

Graphics



CETIS Measurement Report

Report Date: 06 Apr-23 12:46 (p 1 of 1)
Test Code/ID: CSE0323.236 / 09-2753-7346

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	00-0583-7715	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**			
Start Date:	23 Mar-23 15:29	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water		
Ending Date:	30 Mar-23 14:58	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable		
Test Length:	6d 23h	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:**	<24
Sample ID:	09-2754-7172	**Code:**	CSE0323.236	**Project:**			
Sample Date:	23 Mar-23 10:15	**Material:**	Sample Water	**Source:**	Bioassay Report		
Receipt Date:	23 Mar-23 14:05	**CAS (PC):**		**Station:**	EPBLLC_20230323		
Sample Age:	5h (4.3 °C)	**Client:**	Eurofins Calscience				

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60	60	60	60	60	0	0	0.00%	0
100		8	292	292	292	292	292	0	0	0.00%	0
Overall		16	176	112.2	239.8	60	292	29.95	119.8	68.07%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	376.5	372.8	380.2	370	383	0.555	4.44	1.18%	0
100		8	2086	2083	2089	2079	2091	0.4429	3.543	0.17%	0
Overall		16	1231	760.9	1702	370	2091	220.7	883	71.70%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.838	7.535	8.14	7	8.2	0.04529	0.3623	4.62%	0
100		8	7.8	7.49	8.11	6.9	8	0.04629	0.3703	4.75%	0
Overall		16	7.819	7.63	8.008	6.9	8.2	0.08861	0.3544	4.53%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
100		8	600	600	600	600	600	0	0	0.00%	0
Overall		16	340	196.9	483.1	80	600	67.13	268.5	78.98%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8.038	7.994	8.081	8	8.1	0.00647	0.05176	0.64%	0
100		8	7.988	7.958	8.017	7.9	8	0.004419	0.03535	0.44%	0
Overall		16	8.013	7.986	8.039	7.9	8.1	0.0125	0.05	0.62%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24	24	24	24	24	0	0	0.00%	0
Overall		16	24	24	24	24	24	0	0	0.00%	0 (0%)

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

4/26/2023

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the TACs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: X Hand delivered by H&A with Hiscopy of Hoc	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No :
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA *	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DVI-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly
EPBLLC_20230323	3/23/23	1015	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1

Temp. deg. C = 4.3 °C

Added Correction Factor = +0.3 °C

Chlorine (mg/L) = <0.1

NH3 (mg/L) = <0.1

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Retained Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Dallalah	Company: H+A 1405	Date/Time: 3/23/2023	Receiv Virendra Patel	Date/Time: 3-23-23 1405	
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:	
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:	

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 21 March - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 18.33 ug/l
EC50 = 26.67 ug/l

ENDPOINT: REPRODUCTION

NOEC = 5.00 ug/l

IC25 = 6.63 ug/l
IC50 = 8.45 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Report Date: 06 Apr-23 12:26 (p 1 of 2)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
14-9937-9653	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test		10	30	17.32	---	1
02-6188-0498	Reproduction	Steel Many-One Rank Sum Test	✓	5	10	7.071	12.9%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
05-0363-9181	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	15	13.33	20	1
				EC20	16.67	14.44	23.33	
				EC25	18.33	15.56	26.67	
				EC40	23.33	18.89	34	
				EC50	26.67	21.11	37.5	
08-0930-0440	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	5.896	5.417	6.089	1
			✓	IC20	6.261	5.815	6.452	
			✓	IC25	6.626	6.225	6.819	
			✓	IC40	7.722	7.388	7.929	
			✓	IC50	8.452	8.156	8.664	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
05-0363-9181	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
14-9937-9653	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
02-6188-0498	Reproduction	Control Resp	25.7	15	<<	Yes	Passes Criteria
08-0930-0440	Reproduction	Control Resp	25.7	15	<<	Yes	Passes Criteria
02-6188-0498	Reproduction	PMSD	0.1292	0.13	0.47	Yes	Below Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.4000	0.0306	0.7694	0.0000	1.0000	0.1633	0.5164	129.10%	60.00%
50		10	0.1000	-0.1262	0.3262	0.0000	1.0000	0.1000	0.3162	316.23%	90.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	25.7	23.85	27.55	21	30	0.8172	2.584	10.06%	0.00%
3		10	23.9	22.49	25.31	20	27	0.6227	1.969	8.24%	7.00%
5		10	26.1	24.47	27.73	22	31	0.7219	2.283	8.75%	-1.56%
10		10	7.4	6.175	8.625	5	11	0.5416	1.713	23.14%	71.21%
30		10	3.2	-0.3656	6.766	0	15	1.576	4.984	155.76%	87.55%
50		10	1.4	-1.767	4.567	0	14	1.4	4.427	316.23%	94.55%

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail
MD5: F4B702ADEF230AEDBE9418B3CD886DE2

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail
MD5: 983E619D3592AAD83E9946B3BFA7BC58

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Report Date: 06 Apr-23 12:25 (p 1 of 2)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	02-6188-0498	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	Nonparametric-Control vs Treatments	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	983E619D3592AAD83E9946B3BFA7BC58	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	5	10	7.071	---	3.321	12.92%

Steel Many-One Rank Sum Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	82.5	75	4	CDF	0.1507	Non-Significant Effect
		5	18	112	75	2	CDF	0.9455	Non-Significant Effect
		10*	18	55	75	0	CDF	0.0004	Significant Effect
		30*	18	55	75	0	CDF	0.0004	Significant Effect
		50*	18	55	75	0	CDF	0.0004	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	25.7	15	<<	Yes	Passes Criteria
PMSD	0.1292	0.13	0.47	Yes	Below Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	6979.88	1395.98	5	132.6	<1.0E-05	Significant Effect
Error	568.3	10.5241	54			
Total	7548.18		59			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	16.85	15.09	0.0048	Unequal Variances
	Levene Equality of Variance Test	1.972	3.377	0.0977	Equal Variances
	Mod Levene Equality of Variance Test	0.6306	3.377	0.6771	Equal Variances
Distribution	Anderson-Darling A2 Test	2.812	3.878	<1.0E-05	Non-Normal Distribution
	D'Agostino Kurtosis Test	4.038	2.576	5.4E-05	Non-Normal Distribution
	D'Agostino Skewness Test	5.011	2.576	<1.0E-05	Non-Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	41.42	9.21	<1.0E-05	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.1629	0.1331	0.0004	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.818	0.9459	<1.0E-05	Non-Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	25.7	23.85	27.55	25.5	21	30	0.8172	10.06%	0.00%
3		10	23.9	22.49	25.31	23.2	20	27	0.6227	8.24%	7.00%
5		10	26.1	24.47	27.73	26	22	31	0.7219	8.75%	-1.56%
10		10	7.4	6.175	8.625	7	5	11	0.5416	23.14%	71.21%
30		10	3.2	-0.3656	6.766	0	0	15	1.576	155.76%	87.55%
50		10	1.4	-1.767	4.567	0	0	14	1.4	316.23%	94.55%

CETIS Analytical Report

Report Date: 06 Apr-23 12:25 (p 2 of 2)
Test Code/ID: CER032123 / 15-8894-7655

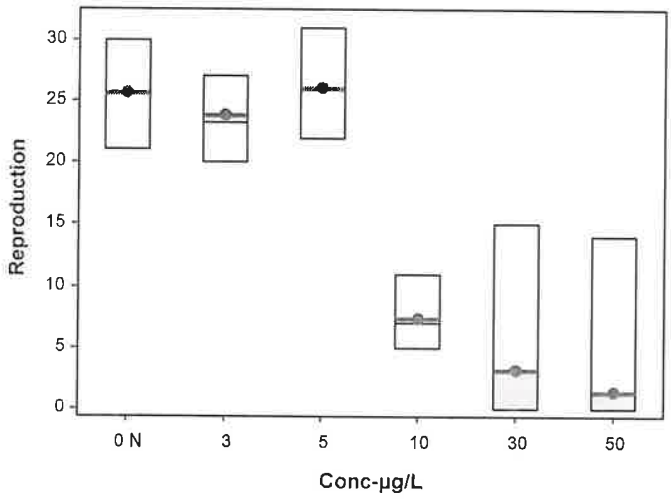
Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

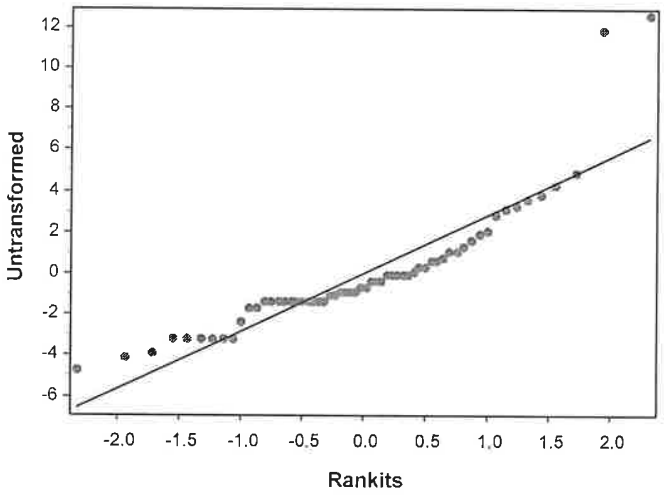
Analysis ID:	02-6188-0498	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	983E619D3592AAD83E9946B3BFA7BC58	**Editor ID:**	009-702-627-3

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

Graphics





CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-0363-9181	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	Linear Interpolation (ICPIN)	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	F4B702ADEF230AEDBE9418B3CD886DE	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	15	13.33	20
EC20	16.67	14.44	23.33
EC25	18.33	15.56	26.67
EC40	23.33	18.89	34
EC50	26.67	21.11	37.5

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣA/ΣB	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.4000	0.0000	0.0000	1.0000	129.10%	60.00%	4/10	0.4000	60.00%
50		10	0.1000	0.0000	0.0000	1.0000	316.23%	90.00%	1/10	0.1000	90.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

7d Survival Rate Binomials

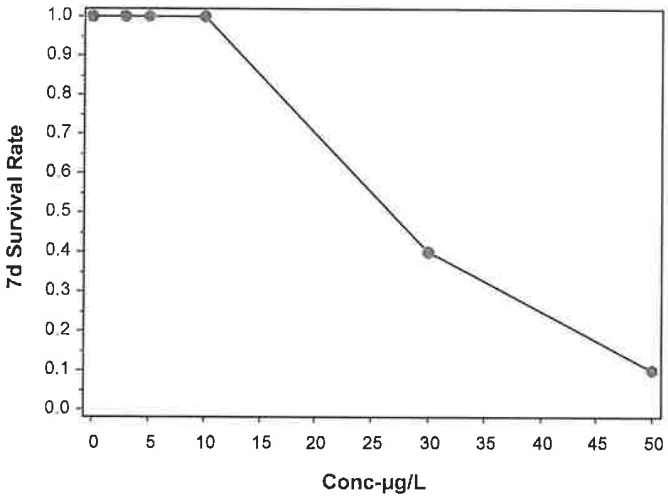
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-0363-9181	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	F4B702ADEF230AEDBE9418B3CD886DE	**Editor ID:**	009-702-627-3

Graphics



CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	08-0930-0440	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	983E619D3592AAD83E9946B3BFA7BC58	**Editor ID:**	009-702-627-3
Batch ID:	13-3375-5897	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	21 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	28 Mar-23 14:05	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	03-4411-3507	**Code:**	CER032123	**Project:**	REF TOX
Sample Date:	21 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	49588	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	25.7	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	5.896	5.417	6.089
IC20	6.261	5.815	6.452
IC25	6.626	6.225	6.819
IC40	7.722	7.388	7.929
IC50	8.452	8.156	8.664

Reproduction Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	**Code**	**Count**	**Mean**	**Median**	**Min**	**Max**	**CV%**	**%Effect**	**Mean**	**%Effect**
0	N	10	25.7	25.5	21	30	10.06%	0.00%	25.7	0.00%
3		10	23.9	23.2	20	27	8.24%	7.00%	25	2.72%
5		10	26.1	26	22	31	8.75%	-1.56%	25	2.72%
10		10	7.4	7	5	11	23.14%	71.21%	7.4	71.21%
30		10	3.2	0	0	15	155.76%	87.55%	3.2	87.55%
50		10	1.4	0	0	14	316.23%	94.55%	1.4	94.55%

Reproduction Detail

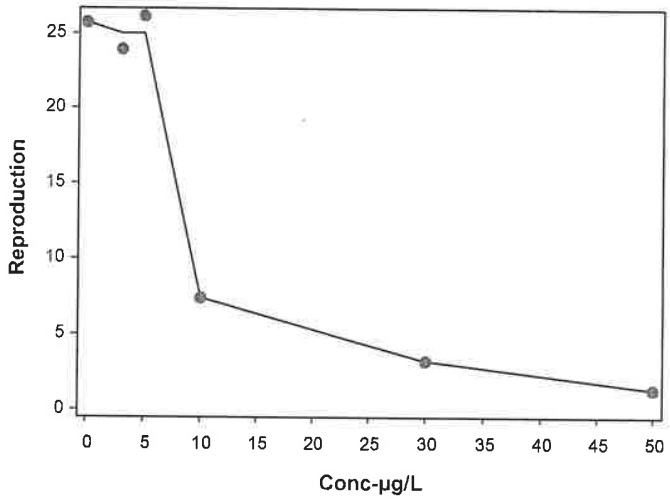
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	08-0930-0440	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	983E619D3592AAD83E9946B3BFA7BC58	**Editor ID:**	009-702-627-3

Graphics



CETIS Analytical Report

Report Date: 06 Apr-23 12:26 (p 1 of 2)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	14-9937-9653	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	F4B702ADEF230AEDBE9418B3CD886DE	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0054	Exact	0.0217	Significant Effect
		50*	0.0001	Exact	0.0003	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		4	6	10	0.4000	0.6000	60.00%
50		1	9	10	0.1000	0.9000	90.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.4000	0.0306	0.7694	0.0000	0.0000	1.0000	0.1633	129.10%	60.00%
50		10	0.1000	0.0000	0.3262	0.0000	0.0000	1.0000	0.1000	316.23%	90.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

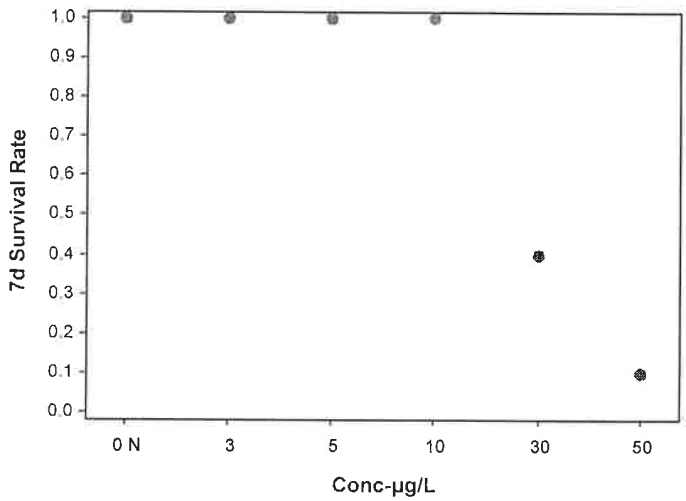
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	14-9937-9653	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	F4B702ADEF230AEDBE9418B3CD886DE	**Editor ID:**	009-702-627-3

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	13-3375-5897	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	21 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	28 Mar-23 14:05	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	03-4411-3507	**Code:**	CER032123	**Project:**	REF TOX
Sample Date:	21 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	61.25	59.31	63.19	60	65	0.2893	2.315	3.78%	0
50		8	60	60	60	60	60	0	0	0.00%	0
Overall		16	60.62	59.71	61.54	60	65	0.427	1.708	2.82%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	376.2	371	381.5	370	387	0.7785	6.228	1.66%	0
3		8	369.2	368.7	369.8	368	370	0.08839	0.7071	0.19%	0
5		8	375.1	366.4	383.9	369	394	1.312	10.49	2.80%	0
10		8	374.5	366.5	382.5	367	390	1.203	9.621	2.57%	0
30		8	375.2	367.3	383.2	367	391	1.191	9.528	2.54%	0
50		8	375.6	367.7	383.6	365	391	1.191	9.531	2.54%	0
Overall		48	374.3	371.9	376.7	365	394	1.196	8.286	2.21%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.825	7.529	8.121	7	8.2	0.04419	0.3536	4.52%	0
3		8	7.763	7.491	8.034	7	8.1	0.04061	0.3249	4.19%	0
5		8	7.725	7.469	7.981	7	8	0.03824	0.3059	3.96%	0
10		8	7.688	7.449	7.926	7	7.9	0.03563	0.285	3.71%	0
30		8	7.688	7.445	7.93	7	7.9	0.03625	0.29	3.77%	0
50		8	7.688	7.445	7.93	7	7.9	0.03625	0.29	3.77%	0
Overall		48	7.729	7.643	7.815	7	8.2	0.04283	0.2968	3.84%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
50		8	99	99	99	99	99	0	0	0.00%	0
Overall		16	89.5	84.27	94.73	80	99	2.453	9.812	10.96%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.975	7.901	8.049	7.8	8.1	0.01108	0.08864	1.11%	0
3		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
5		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
10		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
30		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
50		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
Overall		48	7.985	7.966	8.004	7.8	8.1	0.009411	0.0652	0.82%	0 (0%)

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		8	24	24	24	24	24	0	0	0.00%	0
50		8	24	24	24	24	24	0	0	0.00%	0
Overall		48	24	24	24	24	24	0	0	0.00%	0 (0%)

Loc: 570
132336

570-132336 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230323	3/23/23	1015	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
					3																					Meter Serial #
TB_20230323-1	3/23/23	1015	TB	WM	1	N	N														x					Time of Readings 1015
																										DO (mg/L) 13.53
																										pH 8.21
																										Temp (°C/°F) 10.96°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~EDF #370143595~~ ~~EDF #570131870~~ ECI #570143595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by: Michelle Dallelek	Company: H&A	Date/Time: 3/23/23 1600	Received by: EC 3/23/23	Date/Time: 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.7/1.7 2.8/2.8 1.9/1.9
SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/26/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230323	3/23/23	1015	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1015	TB	WM	3 1	N	N				X																	
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	3	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Ballalat	Company: H&A	Date/Time: 3/23/23 1600	Receiv		Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC2019/2020VERSION3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132336-6

Login Number: 132336
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 10:07:32 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132336-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

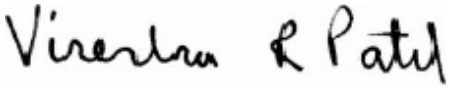
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/12/2023 10:07:32 PM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Method Summary 7
Sample Summary 8
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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132336-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132336-7

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.8º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2 - "Wastewater" matrix: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-7

Client Sample ID: EPBLLC_20230323 **La1 Sample ID: 5b07-323367-**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-7

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132336-1	EPBLLC_20230323	Water	03/23/23 10:15	03/23/23 19:20

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322307964
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/28/2023
Analyzed: 04/09/2023

Proj: 570-212694.1 | 570-132336-7 | Boeing SSFL ISRA and BMP | 57014595

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS					
						Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
								MFL (million fibers per liter)		
EPBLLC_20230323 (570-132336-1) 322307964-0001	3/29/2023 03:00 PM	0.10	1288	0.2540	≥ 0.5 µm	None Detected	ND	51.00	<51.00	0.00 - 190.00
					> 10 µm only	None Detected	ND	51.00	<51.00	0.00 - 190.00

Collection Date/Time: *03/23/2023 10:15 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Sherrie Ahmad (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 04/09/2023 18:51:54

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

#322307964

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212694.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132336-7
Address: 520 Mission Street, ,	Due Date Requested: 4/13/2023			
City: South Pasadena	TAT Requested (days):			
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under ... the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any cha... status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee ... assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 03/27/23 6:47	Company: EC	Received by: Annette McKissack (6)	Date/Time: 03/28/23 935	Company: UA Testing
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 3.4°c

Ver: 06/08/2021

#322307964

OrderID: 322307964

ICOC No:
570-212694

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Level IV package needed. Screen as Wastewater matrix

Loc: 570
132336

570-132336 Chain of Custody

ns

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0); K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230323	3/23/23	1015	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
					3																					Meter Serial #
TB_20230323-1	3/23/23	1015	TB	WM	1	N	N														x					Time of Readings 1015
																										DO (mg/L) 13.53
																										pH 8.21
																										Temp (°C/°F) 10.96°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~EDF#37014595~~ ~~EDF #37013187600~~ ECI#37014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by: Michelle Dallalek	Company: H&A	Date/Time: 3/23/23 1600	Received by: EC 3/23/23	Date/Time: 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.7/1.7 2.8/2.8 1.9/1.9
SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/12/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230323	3/23/23	1015	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1015	TB	WM	3 1	N	N				X																	
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	3	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Ballalat	Company: H&A	Date/Time: 3/23/23 1600	Receiv		Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC2019/2020VERSION3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132336-7

Login Number: 132336

List Source: Eurofins Calscience

List Number: 1

Creator: Patel, Virendra

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/28/2023 12:46:45 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132336-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

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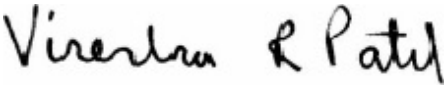

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Job ID: 570-132336-8
Project/Site: Boeing SSFL ISRA and BMP

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132336-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132336-8

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.8º C.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 608211
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: EPBLLC_20230323 (570-132336-1), (280-174421-A-2-B) and (280-174421-A-2-E DU). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 608211
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230323 (570-132336-1), (LCS 160-608211/2-A), (LCSB 160-608211/3-A), (MB 160-608211/1-A), (280-174421-A-2-B), (280-174421-A-2-E DU), (280-174421-A-2-C MS) and (280-174421-A-2-D MSBT)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

Job ID: 570-132336-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

EPBLLC_20230323 (570-132336-1), (570-131073-AT-1-B) and (570-131073-AT-1-C DU)

Method 901.1: Gamma Prep Batch 160-605774
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBLLC_20230323 (570-132336-1), (570-132015-K-1-D) and (570-132015-K-1-E DU)

Methods 903.0, 9315: Radium-226 batch 606156
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230323 (570-132336-1), (LCS 160-606156/2-A), (MB 160-606156/1-A), (660-128024-E-1-A) and (660-128024-D-1-A DU)

Methods 904.0, 9320: Radium-228 batch 606165
The LCS recovered at (128%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-606165/2-A)

Methods 904.0, 9320: Radium-228 batch 606165
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230323 (570-132336-1), (LCS 160-606165/2-A), (MB 160-606165/1-A), (660-128024-E-1-B) and (660-128024-D-1-B DU)

Job ID: 570-132336-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method 905: Strontium-90 batch 606565
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230323 (570-132336-1), (LCS 160-606565/2-A), (LCSD 160-606565/3-A) and (MB 160-606565/1-A)

Method 905: Strontium-90 batch 607355
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230323 (570-132336-1), (LCS 160-607355/2-A), (MB 160-607355/1-A), (280-174032-D-4-A) and (280-174032-C-4-A DU)

Method 906.0: Tritium 607890
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are decay corrected to sample date and time as the Activity Reference Date. EPBLLC_20230323 (570-132336-1), (LCS 160-607890/2-A), (MB 160-607890/1-A), (570-131938-I-1-A), (570-131938-I-1-B DU), (570-132136-Q-1-A) and (570-132136-Q-1-B MS)

Method A-01-R: Isotopic Uranium batch 608221
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230323 (570-132336-1), (LCS 160-608221/2-A), (MB 160-608221/1-A), (570-132333-AG-1-C) and (570-132333-AG-1-D DU)

Method A-01-R: Isotopic Uranium batch 608325
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBLLC_20230323 (570-132336-1), (LCS 160-608325/2-A), (MB 160-608325/1-A), (570-133036-R-1-G) and (570-133036-R-1-I DU)

Method ExtChrom:

Method ExtChrom:

Method ExtChrom: Uranium Prep Batch 160-608325:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBLLC_20230323 (570-132336-1).

Method ExtChrom: Uranium Prep Batch 160-608221:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBLLC_20230323 (570-132336-1).

Method PrecSep_0:

Method PrecSep-21:

Method PrecSep-7: Strontium-90 Prep Batch 606565

The following sample was prepared at a reduced aliquot due to Matrix: EPBLLC_20230323 (570-132336-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Job ID: 570-132336-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-8

Client Sample ID: EPBLLC_20230323 **La1 Sample ID: 5b07-323367-**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience

Client Sample Results

8 Client HCay & Adrchler, Job ID: 570-129224-6
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	24.3	G	19,M	19,7	2,00	14,5	U8 IjF	0Mj90j92 19:05	0Mj97j92 16:22	1
Gross Beta	16.9	G	M,46	M,G6	M,00	5,M1	U8 IjF	0Mj90j92 19:05	0Mj97j92 16:22	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
f dbEE&CLcH	19,7	u f	10,1	10,9	2,00	15,2	U8 ljF	0Mj90j92 19:05	0Mj97j92 16:22	1
f dbEE Si nH	2,67	u f	2,21	2,22	M,00	M,GG	U8 ljF	0Mj90j92 19:05	0Mj97j92 16:22	1

Client Sample Results

8 Client HCay & Adrchler, Job ID: 570-129224-6
. obPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
8 i Elpm-127	1,M1	u	7,29	7,29	90,0	6,GG	U8 IjF	02j96j92 14:22	0Mj19j92 14:51	1
. orHEElpm-M0	1M,G	u	79,0	79,0		101	U8 IjF	02j96j92 14:22	0Mj19j92 14:51	1

3 pdosleE 8 HCErli eri

Client Sample Results

8 Client HCay & Adrchler, Job ID: 570-129224-6
. obPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
8 i Elpm-127	M,21	u	7,51	7,52	90,0	6,20	U8 IjF	02j21j92 15:10	0Mj12j92 90:M0	1
. orHEElpm-M0	-7,2M	u	G0,5	G0,5		112	U8 IjF	02j21j92 15:10	0Mj12j92 90:M0	1

3 pdosleE 8 HCErli eri

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.847**		0,21M	0,292	1,00	0,204	U8 IjF	0Mj05j92 0G50	0Mj96j92 07:MM	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.4*		*30 - 110*	*04/05/23 09:50*	*04/28/23 07:44*	*1*

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
LHAlpm-994	0,904	u	0,909	0,902	1,00	0,212	U8 IjF	0Mj05j92 0G:50	0Mj96j92 07:M5	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.2*		*30 - 110*	*04/05/23 09:50*	*04/28/23 07:45*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	1.12		0,M50	0,M49	1,00	0,5M2	U8 IjF	0Mj05j92 10:99	0Mj97j92 19:0G	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.4*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:09*	*1*
Y Carrier	*84.5*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:09*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
LHAlpm-996	0,15M	u	0,206	0,206	1,00	0,5M0	U8 IjF	0Mj05j92 10:99	0Mj97j92 19:0G	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*95.2*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:09*	*1*
Y Carrier	*86.4*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:09*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
/ mbenlpm-G0	0,2M9	u	0,651	0,651	2,00	1,M7	U8 IjF	0Mj07j92 11:19	0Mj17j92 1G99	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*82.5*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:22*	*1*
Y Carrier	*78.1*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:22*	*1*

Client Sample Results

8 Client HCay & Adrchler, Job ID: 570-129224-6
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	**1.22**		0,495	0,422	2,00	0,G16	U8 IjF	0Mj12j92 1M5G	0Mj9Mj92 1G9M	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*71.2*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:24*	*1*
Y Carrier	*71.4*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:24*	*1*

Client Sample Results

8 Client HCay & Adrchler, Job ID: 570-129224-6
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tdrlpm	-107	u	914	914	500	M1M	U8 ljF	0Mj16j92 11:19	0Mj1Gj92 10:51	1

Client Sample Results

8 Client HCay & Ordrchler, Job ID: 570-129224-6
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	12.8		1,55	1,79	1,00	0,242	U8 IjF	0Mj90j92 14:06	0Mj9Mj92 92:97	1

3 pdbsleE 8 HCrli eri

Client Sample Results

8 Client HCay & Ardrchler, Job ID: 570-129224-6
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBLLC_20230323 **Lab Sample ID: 570-132336-1**
Date Collected: 03/23/23 10:15 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	11.8		1,M5	1,40	1,00	0,900	U8 IjF	0Mj90j92 12:24	0Mj9Mj92 92:96	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Ba (30-110)							
570-132336-1	EPBLLC_20230323	93.4							
LCS 160-606156/2-A	Lab Control Sample	89.6							
MB 160-606156/1-A	Method Blank	91.6							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Ba (30-110)							
570-132336-1	EPBLLC_20230323	95.2							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)						
570-132336-1	EPBLLC_20230323	93.4	84.5						
LCS 160-606165/2-A	Lab Control Sample	89.6	84.1						
MB 160-606165/1-A	Method Blank	91.6	84.9						

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)						
570-132336-1	EPBLLC_20230323	95.2	86.4						

Tracer/Carrier Legend

Ba = Ba Carrier

Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Sr (30-110)	Y (30-110)						
570-132336-1	EPBLLC_20230323	82.5	78.1						
LCS 160-606565/2-A	Lab Control Sample	86.3	77.0						
LCS 160-607355/2-A	Lab Control Sample	86.2	84.1						

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132336-8
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
LCSD 160-606565/3-A	Lab Control Sample Dup	85.1	69.9
MB 160-606565/1-A	Method Blank	86.6	81.9
MB 160-607355/1-A	Method Blank	87.8	85.6

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
		Sr	Y
Lab Sample ID	Client Sample ID	(30-110)	(30-110)
570-132336-1	EPBLLC_20230323	71.2	71.4

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
		U-232
Lab Sample ID	Client Sample ID	(30-110)
LCS 160-608221/2-A	Lab Control Sample	81.2
LCS 160-608325/2-A	Lab Control Sample	87.6
MB 160-608221/1-A	Method Blank	96.9
MB 160-608325/1-A	Method Blank	81.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-608211/1-A
Matrix: Water
Analysis Batch: 609225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608211

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.2783	U	0.687	0.687	3.00	1.22	pCi/L	04/20/23 12:05	04/27/23 08:17	1
Gross Beta	0.1953	U	0.405	0.406	4.00	0.692	pCi/L	04/20/23 12:05	04/27/23 08:17	1

Lab Sample ID: LCS 160-608211/2-A
Matrix: Water
Analysis Batch: 609225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608211

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Alpha	50.5	56.05		8.09	3.00	2.44	pCi/L	111	75 - 125

Lab Sample ID: LCSB 160-608211/3-A
Matrix: Water
Analysis Batch: 609225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608211

Analyte	Spike Added	LCSB Result	LCSB Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Gross Beta	73.3	69.79		7.50	4.00	0.896	pCi/L	95	75 - 125

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Lab Sample ID: MB 160-605283/1-A
Matrix: Water
Analysis Batch: 607160

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605283

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.793	U	6.67	6.68	20.0	7.49	pCi/L	03/28/23 16:33	04/12/23 04:01	1
Potassium-40	27.15	U	82.6	82.7		106	pCi/L	03/28/23 16:33	04/12/23 04:01	1

Lab Sample ID: LCS 160-605283/2-A
Matrix: Water
Analysis Batch: 607188

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605283

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	139700		16600		562	pCi/L	103	79 - 121
Cesium-137	40800	39690		4740	20.0	156	pCi/L	97	87 - 115
Cobalt-60	17700	17220		2060		78.1	pCi/L	97	88 - 116

Lab Sample ID: MB 160-605774/1-A
Matrix: Water
Analysis Batch: 607321

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 605774

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	-7.022	U	12.9	12.9	20.0	15.4	pCi/L	03/31/23 15:10	04/13/23 14:40	1
Potassium-40	-5.858	U	119	119		163	pCi/L	03/31/23 15:10	04/13/23 14:40	1

Method: 901.1 - Cesium 137 & Other Gamma Emitters (GS) (Continued)

Lab Sample ID: LCS 160-605774/2-A
Matrix: Water
Analysis Batch: 607326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 605774

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Americium-241	135000	154200		18300		291	pCi/L	114	79 - 121
Cesium-137	40800	42460		5060	20.0	81.7	pCi/L	104	87 - 115
Cobalt-60	17700	18450		2200		56.4	pCi/L	104	88 - 116

Method: 903.0 - Radium-226 (GFPC)

Lab Sample ID: MB 160-606156/1-A
Matrix: Water
Analysis Batch: 609232

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606156

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1227	U	0.134	0.135	1.00	0.213	pCi/L	04/05/23 09:50	04/28/23 07:42	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.6*		*30 - 110*	*04/05/23 09:50*	*04/28/23 07:42*	*1*

Lab Sample ID: LCS 160-606156/2-A
Matrix: Water
Analysis Batch: 609232

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606156

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-226	11.3	9.890		1.23	1.00	0.246	pCi/L	87	70 - 113

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.6*		*30 - 110*

Method: 904.0 - Radium-228 (GFPC)

Lab Sample ID: MB 160-606165/1-A
Matrix: Water
Analysis Batch: 609154

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606165

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1919	U	0.347	0.347	1.00	0.595	pCi/L	04/05/23 10:22	04/27/23 12:29	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.6*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:29*	*1*
Y Carrier	*84.9*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:29*	*1*

Method: 904.0 - Radium-228 (GFPC) (Continued)

Lab Sample ID: LCS 160-606165/2-A
Matrix: Water
Analysis Batch: 609154

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606165

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Radium-228			8.00	10.23		1.39	1.00	0.552	pCi/L	128	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.6*		*30 - 110*
Y Carrier	*84.1*		*30 - 110*

Method: 905 - Strontium-90 (GFPC)

Lab Sample ID: MB 160-606565/1-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 606565

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1675	U	0.204	0.204	3.00	0.337	pCi/L	04/07/23 11:12	04/17/23 19:03	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.6*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*
Y Carrier	*81.9*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*

Lab Sample ID: LCS 160-606565/2-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.34	7.570		0.853	3.00	0.305	pCi/L	103	77 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*86.3*		*30 - 110*
Y Carrier	*77.0*		*30 - 110*

Lab Sample ID: LCSD 160-606565/3-A
Matrix: Water
Analysis Batch: 607841

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 606565

Analyte			Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits	RER	RER Limit
Strontium-90			7.34	7.501		0.887	3.00	0.401	pCi/L	102	77 - 125	0.04	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.1*		*30 - 110*
Y Carrier	*69.9*		*30 - 110*

Method: 905 - Strontium-90 (GFPC) (Continued)

Lab Sample ID: MB 160-607355/1-A
Matrix: Water
Analysis Batch: 608494

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607355

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.1022	U	0.206	0.206	3.00	0.351	pCi/L	04/13/23 14:59	04/24/23 19:21	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.8*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:21*	*1*
Y Carrier	*85.6*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:21*	*1*

Lab Sample ID: LCS 160-607355/2-A
Matrix: Water
Analysis Batch: 608494

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607355

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Strontium-90			7.33	7.451		0.832	3.00	0.288	pCi/L	102	77 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*86.2*		*30 - 110*
Y Carrier	*84.1*		*30 - 110*

Method: 906.0 - Tritium, Total (LSC)

Lab Sample ID: MB 160-607890/1-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 607890

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-102.7	U	224	224	500	433	pCi/L	04/18/23 11:12	04/19/23 06:41	1

Lab Sample ID: LCS 160-607890/2-A
Matrix: Water
Analysis Batch: 608161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 607890

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Tritium			2090	1604		396	500	420	pCi/L	77	75 - 125		

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-608221/1-A
Matrix: Water
Analysis Batch: 608552

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608221

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	0.08812	U	0.1043	0.1045	1.00	0.129	pCi/L	04/20/23 13:36	04/24/23 23:28	1

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-608221/2-A
Matrix: Water
Analysis Batch: 608553

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608221

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	12.79		1.52	1.00	0.152	pCi/L	100	75 - 125		
Uranium-238			13.0	14.84		1.70	1.00	0.0668	pCi/L	114	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*81.2*		*30 - 110*

Lab Sample ID: MB 160-608325/1-A
Matrix: Water
Analysis Batch: 608551

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 608325

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	0.07277	U	0.1152	0.1153	1.00	0.184	pCi/L	04/20/23 16:08	04/24/23 23:27	1

Lab Sample ID: LCS 160-608325/2-A
Matrix: Water
Analysis Batch: 608555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 608325

Analyte			Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits		
Uranium-234			12.7	13.86		1.59	1.00	0.144	pCi/L	109	75 - 125		
Uranium-238			13.0	14.93		1.68	1.00	0.150	pCi/L	115	75 - 125		

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*87.6*		*30 - 110*

Rad

Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Total/NA	Water	Fill_Geo-0	
MB 160-605283/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605283/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Filtration Batch: 605402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Dissolved	Water	Filtration	
570-132336-1	EPBLLC_20230323	Dissolved	Water	Filtration	
570-132336-1	EPBLLC_20230323	Dissolved	Water	Filtration	
570-132336-1	EPBLLC_20230323	Dissolved	Water	Filtration	

Prep Batch: 605774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Dissolved	Water	Fill_Geo-0	605402
MB 160-605774/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605774/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 606156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Dissolved	Water	PrecSep-21	605402
570-132336-1	EPBLLC_20230323	Total/NA	Water	PrecSep-21	
MB 160-606156/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-606156/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 606165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Dissolved	Water	PrecSep_0	605402
570-132336-1	EPBLLC_20230323	Total/NA	Water	PrecSep_0	
MB 160-606165/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-606165/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 606565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Total/NA	Water	PrecSep-7	
MB 160-606565/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-606565/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-606565/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 607355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Dissolved	Water	PrecSep-7	605402
MB 160-607355/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-607355/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 607890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Total/NA	Water	LSC_Dist_Susp	
MB 160-607890/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-607890/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-8

Rad

Prep Batch: 608211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Dissolved	Water	Evaporation	605402
570-132336-1	EPBLLC_20230323	Total/NA	Water	Evaporation	
MB 160-608211/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-608211/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-608211/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 608221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Dissolved	Water	ExtChrom	605402
MB 160-608221/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-608221/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 608325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132336-1	EPBLLC_20230323	Total/NA	Water	ExtChrom	
MB 160-608325/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-608325/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Job ID: 570-132336-8
Project/Site: Boeing SSFL ISRA and BMP

Client Sample ID: EPBLLC_20230323
Lab Sample ID: 570-132336-1

Date Collected: 03/23/23 10:15
Matrix: Water

Date Received: 03/23/23 19:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	Evaporation			37.60 mL	1.0 g	608211	04/20/23 12:05	MST	EET SL
Dissolved	Analysis	900.0		1			609154	04/27/23 18:33	FLC	EET SL
	Instrument ID: GFPCBLUE									
Total/NA	Prep	Evaporation			32.55 mL	1.0 g	608211	04/20/23 12:05	MST	EET SL
Total/NA	Analysis	900.0		1			609154	04/27/23 18:33	FLC	EET SL
	Instrument ID: GFPCBLUE									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	605774	03/31/23 15:10	AJP	EET SL
Dissolved	Analysis	901.1		1			607329	04/13/23 20:40	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Total/NA	Analysis	901.1		1			607161	04/12/23 16:51	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	PrecSep-21			752.38 mL	1.0 g	606156	04/05/23 09:50	DJP	EET SL
Dissolved	Analysis	903.0		1			609232	04/28/23 07:45	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			751.38 mL	1.0 g	606156	04/05/23 09:50	DJP	EET SL
Total/NA	Analysis	903.0		1			609232	04/28/23 07:44	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	PrecSep_0			752.38 mL	1.0 g	606165	04/05/23 10:22	DJP	EET SL
Dissolved	Analysis	904.0		1			609225	04/27/23 12:09	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			751.38 mL	1.0 g	606165	04/05/23 10:22	DJP	EET SL
Total/NA	Analysis	904.0		1			609225	04/27/23 12:09	FLC	EET SL
	Instrument ID: GFPCORANGE									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	PrecSep-7			509.72 mL	1.0 g	607355	04/13/23 14:59	KAC	EET SL
Dissolved	Analysis	905		1			608494	04/24/23 19:24	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			259.18 mL	1.0 g	606565	04/07/23 11:12	DJP	EET SL
Total/NA	Analysis	905		1			607834	04/17/23 19:22	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			100.11 mL	1.0 g	607890	04/18/23 11:12	ZR	EET SL
Total/NA	Analysis	906.0		1			608161	04/19/23 10:51	REV	EET SL
	Instrument ID: LSC3180									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	ExtChrom			252.8 mL	1.0 mL	608221	04/20/23 13:36	SEH	EET SL
Dissolved	Analysis	A-01-R		1			608557	04/24/23 23:28	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			253.8 mL	1.0 mL	608325	04/20/23 16:08	SEH	EET SL
Total/NA	Analysis	A-01-R		1			608532	04/24/23 23:27	FLC	EET SL
	Instrument ID: ALPHAVISION									

Client: Haley & Aldrich, Inc.
Job ID: 570-132336-8
Project/Site: Boeing SSFL ISRA and BMP

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-8

Laboratory: Eurofins St. Louis

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-001	05-06-25
ANAB	Dept. of Defense ELAP	L2305	04-06-25
ANAB	Dept. of Energy	L2305.01	04-06-25
ANAB	ISO/IEC 17025	L2305	04-06-25
Arizona	State	AZ0813	12-08-23
California	Los Angeles County Sanitation Districts	10259	06-30-22 *
California	State	2886	06-30-23
Florida	NELAP	E87689	06-30-23
HI - RadChem Recognition	State	n/a	06-30-23
Illinois	NELAP	200023	11-30-23
Iowa	State	373	12-01-24
Kansas	NELAP	E-10236	10-31-23
Kentucky (DW)	State	KY90125	12-31-23
Kentucky (WW)	State	KY90125 (Permit KY0004049)	12-31-23
Louisiana (All)	NELAP	04080	06-30-23
Louisiana (DW)	State	LA011	12-31-23
Maryland	State	310	09-30-23
MI - RadChem Recognition	State	9005	06-30-23
Missouri	State	780	06-30-25
Nevada	State	MO000542020-1	07-31-23
New Jersey	NELAP	MO002	06-30-23
New York	NELAP	11616	03-31-24
North Carolina (DW)	State	29700	07-31-23
North Dakota	State	R-207	06-30-23
Oklahoma	NELAP	9997	08-31-23
Oregon	NELAP	4157	09-01-23
Pennsylvania	NELAP	68-00540	02-28-24
South Carolina	State	85002001	06-30-23
Texas	NELAP	T104704193	07-31-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-17-00028	06-11-23
Utah	NELAP	MO000542021-14	07-31-23
Virginia	NELAP	10310	06-14-23
Washington	State	C592	08-30-23
West Virginia DEP	State	381	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132336-8
Project/Site: Boeing SSFL ISRA and BMP

Method	Method Description	Protocol	Laboratory
900.0	Gross Alpha and Gross Beta Radioactivity	EPA	EET SL
901.1	Cesium 137 & Other Gamma Emitters (GS)	EPA	EET SL
903.0	Radium-226 (GFPC)	EPA	EET SL
904.0	Radium-228 (GFPC)	EPA	EET SL
905	Strontium-90 (GFPC)	EPA	EET SL
906.0	Tritium, Total (LSC)	EPA	EET SL
A-01-R	Isotopic Uranium (Alpha Spectrometry)	DOE	EET SL
Evaporation	Preparation, Evaporation	None	EET SL
ExtChrom	Preparation, Extraction Chromatography Resin Actinide Separation	None	EET SL
Fill_Geo-0	Fill Geometry, No In-Growth	None	EET SL
Filtration	Sample Filtration	None	EET SL
LSC_Dist_Susp	Distillation and Suspension (LSC)	None	EET SL
PrecSep_0	Preparation, Precipitate Separation	None	EET SL
PrecSep-21	Preparation, Precipitate Separation (21-Day In-Growth)	None	EET SL
PrecSep-7	Preparation, Precipitate Separation (7-Day In-Growth)	None	EET SL

Protocol References:

DOE = U.S. Department of Energy

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132336-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132336-1	EPBLLC_20230323	Water	03/23/23 10:15	03/23/23 19:20

Loc: 570
132336

570-132336 Chain of Custody

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 228 & 226, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B– (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBLLC_20230323	3/23/23	1015	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230323-1	3/23/23	1015	TB	WM	3	N	N														x					Time of Readings 1015
																										DO (mg/L) 13.53
																										pH 8.21
																										Temp (°C/°F) 10.96°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ~~EDF#37014595~~ ECI #37014595 ECI #37014595

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.:	
Relinquished by: Michelle Dallalek	Company: H&A	Date/Time: 3/23/23 1600	Received by: EC 3/23/23	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

1.7/1.7 2.8/2.8 1.9/1.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/28/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			Job / SDG No.:
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBLLC_20230323	3/23/23	1015	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230323-2	3/23/23	1015	TB	WM	3 1	N	N				X																	
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	3	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ____ Months

Special Instructions/QC Requirements & Comments: ECI #67014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:				
Relinquished by: Michelle Ballalat	Company: H&A	Date/Time: 3/23/23 1600	Receiv		Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Receiv	IEC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Receiv		Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC2019/2020VERSION3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212695.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132336-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/25/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha/Beta- Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBLLC_20230323 (570-132336-1)	3/23/23	10:15 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	9	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	03/27/23 0:52	FED EX	FED EX		
2	FED EX			Siena Worthington	MAR 28 2023 0910	EMSL
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132336-8

Login Number: 132336

List Number: 1

Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132336-8

Login Number: 132336
List Number: 4
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 03/28/23 11:53 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/6/2023 2:25:07 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132337-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

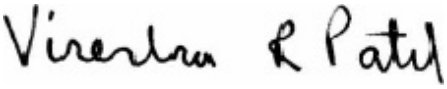
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/6/2023 2:25:07 PM

Authorized for release by
Virendra Patel, Project Manager I
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Qualifiers

GC/MS mV O

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Sep i mV O

Qualifier	Qualifier DesAriction
BA	Relative percent difference out of control
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LR	LCS/LCSD recovery below method control limits

HPLC/IC

Qualifier	Qualifier DesAriction
BU	Analyzed out of holding time
BU	Sample was prepped beyond the specified holding time
BV	Sample received after holding time expired
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Metals

Qualifier	Qualifier DesAriction
BB	Sample > 4X spike concentration
BU	Sample was prepped beyond the specified holding time
IB	CCV recovery above limit; analyte not detected
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
LQ	LCS/LCSD recovery above method control limits
MB	Analyte present in the method blank

General Chep istry

Qualifier	Qualifier DesAriction
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit

Glossary (Continued)

Obbreviation	These Aop p only used abbreviations p ay or p ay not be cresent in this recort.
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132337-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132337-1

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.9º C, 2.3º C and 2.7º C.

Receipt Exceptions

The number of containers for the following sample did not match the information listed on the Chain-of-Custody (COC): EPBBC_20230323 (570-132337-1). Received 45 containers, while the COC lists 47.

The sample ID for the following sample did not match the information listed on the Chain-of-Custody (COC): TB-20230323-1 (570-132337-2). The container label lists TB_20230322-1, while the COC lists TB_20230322-2 (collection date/time matched).

GC/MS VOA
Method 624.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-314233. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

HPLC/IC
Method 218.6: The following sample was received and analyzed outside of holding time: EPBBC_20230323 (570-132337-1).

Method 218.6: The following sample was received filtered and analyzed outside of holding time: EPBBC_20230323 (570-132337-1).

Method 300.0: The following sample was diluted due to the nature of the sample matrix: EPBBC_20230323 (570-132337-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

Job ID: 570-132337-1 (Continued)

Laboratory: Eurofins Calscience (Continued)

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-1

Client Sample ID: EPBBC_20230322 — Lab Sample ID: 570-132337-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Hexavalent chromium	0.047	J,DX BU BV	0.20	0.019	ug/L	1		218.6	Total/NA
Hexavalent chromium	0.046	J,DX BU	0.20	0.019	ug/L	1		218.6	Dissolved
Chloride	51		2.0	0.72	mg/L	2		300.0	Total/NA
Fluoride	0.28		0.20	0.092	mg/L	2		300.0	Total/NA
Nitrate as N	1.5		0.20	0.039	mg/L	2		300.0	Total/NA
Sulfate - DL	130		10	2.4	mg/L	10		300.0	Total/NA
Nitrate Nitrite as N	1.5		0.10	0.020	mg/L	1		NO2NO3 Calc	Total/NA
Boron	0.19	J,DX	0.50	0.0035	mg/L	1		200.7 Rev 4.4	Total Recoverable
Boron	0.15	J,DX BU	0.50	0.0035	mg/L	1		200.7 Rev 4.4	Dissolved
Aluminum	1200		15	8.6	ug/L	1		200.8	Total Recoverable
Arsenic	2.4		1.0	0.16	ug/L	1		200.8	Total Recoverable
Barium	62		1.0	0.17	ug/L	1		200.8	Total Recoverable
Chromium	2.5		2.0	0.14	ug/L	1		200.8	Total Recoverable
Cobalt	1.2		1.0	0.14	ug/L	1		200.8	Total Recoverable
Copper	3.8		2.0	0.32	ug/L	1		200.8	Total Recoverable
Iron	2000		20	3.7	ug/L	1		200.8	Total Recoverable
Manganese	79	MB	1.0	0.41	ug/L	1		200.8	Total Recoverable
Nickel	3.7		2.0	0.17	ug/L	1		200.8	Total Recoverable
Lead	2.4		1.0	0.12	ug/L	1		200.8	Total Recoverable
Antimony	0.82	J,DX	2.0	0.36	ug/L	1		200.8	Total Recoverable
Zinc	13	J,DX	20	2.8	ug/L	1		200.8	Total Recoverable
Selenium	1.0	J,DX	2.0	0.52	ug/L	1		200.8	Total Recoverable
Aluminum	25	BU	15	8.6	ug/L	1		200.8	Dissolved
Arsenic	1.5	BU	1.0	0.16	ug/L	1		200.8	Dissolved
Barium	39	BU	1.0	0.17	ug/L	1		200.8	Dissolved
Chromium	0.32	J,DX BU	2.0	0.14	ug/L	1		200.8	Dissolved
Cobalt	0.25	J,DX BU	1.0	0.14	ug/L	1		200.8	Dissolved
Copper	2.1	BU	2.0	0.32	ug/L	1		200.8	Dissolved
Iron	44	BU	20	3.7	ug/L	1		200.8	Dissolved
Manganese	21	BU	1.0	0.41	ug/L	1		200.8	Dissolved
Nickel	1.7	J,DX BU	2.0	0.17	ug/L	1		200.8	Dissolved
Antimony	1.1	J,DX BU	2.0	0.36	ug/L	1		200.8	Dissolved
Hardness as calcium carbonate	280		7.1	0.50	mg/L	1		SM 2340B	Total Recoverable
Hardness as calcium carbonate	210		7.1	0.50	mg/L	1		SM 2340B	Dissolved
Turbidity	19		0.05	0.05	NTU	1		SM 2130B	Total/NA
Specific Conductance	640		1.0	1.0	umhos/cm	1		SM 2510B	Total/NA
Total Dissolved Solids	540		10	8.7	mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	100		3.3	2.8	mg/L	1		SM 2540D	Total/NA
Settleable Solids	0.10		0.10	0.10	mL/L	1		SM 2540F	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EPBBC_20230322 (Continued)
Lab Sample ID: 570-132337-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Carbon, Total Organic	10		2.0	1.1	mg/L	4		SM 5310D	Total/NA
Clay (less than 0.00391 mm)	13.23		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	0.11		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	68.40		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	81.63		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	18.26		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: TB-20230322-1
Lab Sample ID: 570-132337-2

No Detections.

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1h1h1h2-Ti rdHr c@dbi rcHei	MD		0,50	0,17	NBjF			03j2uj23 01:05	1
1h1h1-Tdr c@dbi rcHei	MD		0,50	0,25	NBjF			03j2uj23 01:05	1
1h1h2h2-Ti rdHr c@dbi rcHei	MD		0,50	0,20	NBjF			03j2uj23 01:05	1
1h1h2-Tdr c@db-1h2h2-rdfCbdbi rcHei	MD		2,0	0,33	NBjF			03j2uj23 01:05	1
1h1h2-Tdr c@dbi rcHei	MD		0,50	0,17	NBjF			03j2uj23 01:05	1
1h1-Dlr c@dbi rcHei	MD		0,50	0,39	NBjF			03j2uj23 01:05	1
1h1-Dlr c@dbi rci ei	MD		0,50	0,33	NBjF			03j2uj23 01:05	1
1h1-Dlr c@dbpdbpi ei	MD		0,50	0,22	NBjF			03j2uj23 01:05	1
1h2h3-Tdr c@dbbi ezi ei	MD		1,0	0,19	NBjF			03j2uj23 01:05	1
1h2h3-Tdr c@dbpdbpHei	MD		1,0	0,31	NBjF			03j2uj23 01:05	1
1h2hu-Tdr c@dbbi ezi ei	MD		1,0	0,29	NBjF			03j2uj23 01:05	1
1h2hu-Tdmi rcaC@i ezi ei	MD		0,50	0,28	NBjF			03j2uj23 01:05	1
1h2-Dlbdbmo-3-4 c@dbpdbpHei	MD		1,0	0,51	NBjF			03j2uj23 01:05	1
1h2-Dlbdbmoi rcHei	MD		0,50	0,19	NBjF			03j2uj23 01:05	1
1h2-Dlr c@db-1h1h2-rdfCbdbi rcHei	MD		2,0	0,58	NBjF			03j2uj23 01:05	1
1h2-Dlr c@dbbi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 01:05	1
1h2-Dlr c@dbi rcHei	MD		0,50	0,15	NBjF			03j2uj23 01:05	1
1h2-Dlr c@dbpdbpHei	MD		0,50	0,17	NBjF			03j2uj23 01:05	1
1h3h5-Tdmi rcaC@i ezi ei	MD		0,50	0,17	NBjF			03j2uj23 01:05	1
1h3-Dlr c@dbbi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 01:05	1
1h3-Dlr c@dbpdbpHei	MD		0,50	0,21	NBjF			03j2uj23 01:05	1
1hu-Dlr c@dbbi ezi ei	MD		0,50	0,11	NBjF			03j2uj23 01:05	1
2h2-Dlr c@db-1h1h1-rdfCbdbi rcHei	MD		10	5,0	NBjF			03j2uj23 01:05	1
2h2-Dlr c@dbpdbpHei	MD		1,0	0,25	NBjF			03j2uj23 01:05	1
2-SNHeoei (REK)	MD		5,0	2,5	NBjF			03j2uj23 01:05	1
2-4 c@dbi rcaCvleaCl rci d	MD		2,0	1,1	NBjF			03j2uj23 01:05	1
2-4 c@dbroCNi ei	MD		0,50	0,11	NBjF			03j2uj23 01:05	1
2-t i xHeoei	MD		5,0	2,2	NBjF			03j2uj23 01:05	1
u-4 c@dbroCNi ei	MD		0,50	0,22	NBjF			03j2uj23 01:05	1
u-Ri rcaC2-pi erHeoei (RISK)	MD		5,0	2,6	NBjF			03j2uj23 01:05	1
&r i roei	MD		20	16	NBjF			03j2uj23 01:05	1
&r dbCle	MD		5,0	u,6	NBjF			03j2uj23 01:05	1
&r da@elrdC	MD		2,0	1,u	NBjF			03j2uj23 01:05	1
Si ezi ei	MD		0,50	0,28	NBjF			03j2uj23 01:05	1
Sdbmobi ezi ei	MD		0,50	0,23	NBjF			03j2uj23 01:05	1
Sdbmor c@dbmi rcHei	MD		0,50	0,21	NBjF			03j2uj23 01:05	1
SdbmoAlr c@dbmi rcHei	MD		0,50	0,19	NBjF			03j2uj23 01:05	1
Sdbmofodm	MD		1,0	0,25	NBjF			03j2uj23 01:05	1
Sdbmomi rcHei	MD		0,50	0,22	NBjF			03j2uj23 01:05	1
4 Hdboe AlsNCIAi	MD		1,0	0,61	NBjF			03j2uj23 01:05	1
4 Hdboe ri rdHr c@dAi	MD		0,50	0,28	NBjF			03j2uj23 01:05	1
4 c@dbbi ezi ei	MD		0,50	0,19	NBjF			03j2uj23 01:05	1
4 c@dbi rcHei	MD		1,0	0,29	NBjF			03j2uj23 01:05	1
4 c@dbfodm	MD		0,50	0,19	NBjF			03j2uj23 01:05	1
4 c@dbmi rcHei	MD		0,50	0,30	NBjF			03j2uj23 01:05	1
r ls-1h2-Dlr c@dbi rci ei	MD		0,50	0,21	NBjF			03j2uj23 01:05	1
r ls-1h3-Dlr c@dbpdbpi ei	MD		0,50	0,30	NBjF			03j2uj23 01:05	1
4 ar@ci xHei	MD		2,0	0,79	NBjF			03j2uj23 01:05	1
Dlbdbmor c@dbmi rcHei	MD		0,50	0,15	NBjF			03j2uj23 01:05	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dlbcbmomi rcHei	MD		0,50	0,19	NBjF			03j2uj23 01:05	1
DIr cCcbAlfCNbcbmi rcHei	MD		1,0	0,u6	NBjF			03j2uj23 01:05	1
DI-Isopcbpa Cl rci d(DI. E)	MD		0,50	0,21	NBjF			03j2uj23 01:05	1
EncHeoC	MD		100	65	NBjF			03j2uj23 01:05	1
EncaCn+bNnaCl rci d(ETSE)	MD		0,50	0,27	NBjF			03j2uj23 01:05	1
EncaCbi ezi ei	MD		0,50	0,25	NBjF			03j2uj23 01:05	1
t i xHr cCcb-1f8-bNrHAli ei	MD		0,50	0,21	NBjF			03j2uj23 01:05	1
IsopcbpHeoC	MD		250	120	NBjF			03j2uj23 01:05	1
Isopcbpa Cbi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 01:05	1
Ri ncaCn+SNnaCEnci d(RTSE)	MD		0,50	0,22	NBjF			03j2uj23 01:05	1
Ri ncaCei 4 cCdAi	MD		2,0	0,57	NBjF			03j2uj23 01:05	1
MHpcrcHCei	MD		1,0	0,33	NBjF			03j2uj23 01:05	1
e-SNnaCbi ezi ei	MD		1,0	0,22	NBjF			03j2uj23 01:05	1
M-. dbpaCbi ezi ei	MD		0,50	0,30	NBjF			03j2uj23 01:05	1
o-XaCei	MD		0,50	0,15	NBjF			03j2uj23 01:05	1
mhp-XaCei	MD		1,0	0,17	NBjF			03j2uj23 01:05	1
p-Isopcbpa CbCNi ei	MD		0,50	0,18	NBjF			03j2uj23 01:05	1
si r-SNnaCbi ezi ei	MD		0,50	0,20	NBjF			03j2uj23 01:05	1
/ nad ei	MD		0,50	0,19	NBjF			03j2uj23 01:05	1
Ti ch+HmaCmi rcaCl rci d(T&RE)	MD		0,50	0,32	NBjF			03j2uj23 01:05	1
ni ch+SNnaCHCocoC(TS&)	MD		10	3,8	NBjF			03j2uj23 01:05	1
ni ch+SNnaCbi ezi ei	MD		0,50	0,17	NBjF			03j2uj23 01:05	1
Ti rdHr cCcbi rci ei	MD		0,50	0,21	NBjF			03j2uj23 01:05	1
Ti rdHcaAcbfNdHe	MD		10	6,8	NBjF			03j2uj23 01:05	1
ToCNi ei	MD		0,50	0,23	NBjF			03j2uj23 01:05	1
rdHes-1h2-DIr cCcbi rci ei	MD		0,50	0,2u	NBjF			03j2uj23 01:05	1
rdHes-1f8-DIr cCcbpcbpi ei	MD		0,50	0,18	NBjF			03j2uj23 01:05	1
Tdr cCcbi rci ei	MD		0,50	0,17	NBjF			03j2uj23 01:05	1
Tdr cCcbfCNbcbmi rcHei	MD		0,50	0,29	NBjF			03j2uj23 01:05	1
VleaCHri rHri	MD		u,0	3,1	NBjF			03j2uj23 01:05	1
VleaCr cCdAi	MD		0,50	0,u7	NBjF			03j2uj23 01:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*60 - 140*		*03/24/23 01:05*	*1*
4-Bromofluorobenzene (Surr)	*101*		*60 - 140*		*03/24/23 01:05*	*1*
Dibromofluoromethane (Surr)	*87*		*60 - 140*		*03/24/23 01:05*	*1*
Toluene-d8 (Surr)	*100*		*60 - 140*		*03/24/23 01:05*	*1*

Client Sample ID: TB-20230322-1
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1h1h1h2-Ti rdHr cCcbi rcHei	MD		0,50	0,17	NBjF			03j2uj23 02:11	1
1h1h1-Tdr cCcbi rcHei	MD		0,50	0,25	NBjF			03j2uj23 02:11	1
1h1h2h2-Ti rdHr cCcbi rcHei	MD		0,50	0,20	NBjF			03j2uj23 02:11	1
1h1h2-Tdr cCcb-1h2h2-rdfCNbcbi rcHei	MD		2,0	0,33	NBjF			03j2uj23 02:11	1
1h1h2-Tdr cCcbi rcHei	MD		0,50	0,17	NBjF			03j2uj23 02:11	1
1h1-DIr cCcbi rcHei	MD		0,50	0,39	NBjF			03j2uj23 02:11	1
1h1-DIr cCcbi rci ei	MD		0,50	0,33	NBjF			03j2uj23 02:11	1
1h1-DIr cCcbpcbpi ei	MD		0,50	0,22	NBjF			03j2uj23 02:11	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-20230322-1
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1f2f8-Tdr c@dbbi ezi ei	MD		1,0	0,19	NBjF			03j2uj23 02:11	1
1f2f8-Tdr c@dbpdbpHei	MD		1,0	0,31	NBjF			03j2uj23 02:11	1
1f2hu-Tdr c@dbbi ezi ei	MD		1,0	0,29	NBjF			03j2uj23 02:11	1
1f2hu-Tdmi rcaC@i ezi ei	MD		0,50	0,28	NBjF			03j2uj23 02:11	1
1f2-Dlbdbmo-3-4 c@dbpdbpHei	MD		1,0	0,51	NBjF			03j2uj23 02:11	1
1f2-Dlbdbmoi rcHei	MD		0,50	0,19	NBjF			03j2uj23 02:11	1
1f2-Dlr c@db-1f1f2-rdfCbdbi rcHei	MD		2,0	0,58	NBjF			03j2uj23 02:11	1
1f2-Dlr c@dbbi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 02:11	1
1f2-Dlr c@dbi rcHei	MD		0,50	0,15	NBjF			03j2uj23 02:11	1
1f2-Dlr c@dbpdbpHei	MD		0,50	0,17	NBjF			03j2uj23 02:11	1
1f8f5-Tdmi rcaC@i ezi ei	MD		0,50	0,17	NBjF			03j2uj23 02:11	1
1f8-Dlr c@dbbi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 02:11	1
1f8-Dlr c@dbpdbpHei	MD		0,50	0,21	NBjF			03j2uj23 02:11	1
1hu-Dlr c@dbbi ezi ei	MD		0,50	0,11	NBjF			03j2uj23 02:11	1
2f2-Dlr c@db-1f1f1-rdfCbdbi rcHei	MD		10	5,0	NBjF			03j2uj23 02:11	1
2f2-Dlr c@dbpdbpHei	MD		1,0	0,25	NBjF			03j2uj23 02:11	1
2-SNHeoei (REK)	MD		5,0	2,5	NBjF			03j2uj23 02:11	1
2-4 c@dbi rcaCvleaCl rci d	MD		2,0	1,1	NBjF			03j2uj23 02:11	1
2-4 c@dbroCNi ei	MD		0,50	0,11	NBjF			03j2uj23 02:11	1
2-t i xHeoei	MD		5,0	2,2	NBjF			03j2uj23 02:11	1
u-4 c@dbroCNi ei	MD		0,50	0,22	NBjF			03j2uj23 02:11	1
u-Ri rcaC2-pi erHeoei (RISK)	MD		5,0	2,6	NBjF			03j2uj23 02:11	1
&ri roei	MD		20	16	NBjF			03j2uj23 02:11	1
&rdbCle	MD		5,0	u,6	NBjF			03j2uj23 02:11	1
&rdaCelrdC	MD		2,0	1,u	NBjF			03j2uj23 02:11	1
Si ezi ei	MD		0,50	0,28	NBjF			03j2uj23 02:11	1
Sdbmobi ezi ei	MD		0,50	0,23	NBjF			03j2uj23 02:11	1
Sdbmor c@dbmi rcHei	MD		0,50	0,21	NBjF			03j2uj23 02:11	1
SdbmoAlr c@dbmi rcHei	MD		0,50	0,19	NBjF			03j2uj23 02:11	1
Sdbmofodm	MD		1,0	0,25	NBjF			03j2uj23 02:11	1
Sdbmomi rcHei	MD		0,50	0,22	NBjF			03j2uj23 02:11	1
4 Hdboe AlsNCIAi	MD		1,0	0,61	NBjF			03j2uj23 02:11	1
4 Hdboe ri rdHr c@dAi	MD		0,50	0,28	NBjF			03j2uj23 02:11	1
4 c@dbbi ezi ei	MD		0,50	0,19	NBjF			03j2uj23 02:11	1
4 c@dbi rcHei	MD		1,0	0,29	NBjF			03j2uj23 02:11	1
4 c@dbfodm	MD		0,50	0,19	NBjF			03j2uj23 02:11	1
4 c@dbmi rcHei	MD		0,50	0,30	NBjF			03j2uj23 02:11	1
r ls-1f2-Dlr c@dbi rci ei	MD		0,50	0,21	NBjF			03j2uj23 02:11	1
r ls-1f8-Dlr c@dbpdbpi ei	MD		0,50	0,30	NBjF			03j2uj23 02:11	1
4 ar@ci xHei	MD		2,0	0,79	NBjF			03j2uj23 02:11	1
Dlbdbmor c@dbmi rcHei	MD		0,50	0,15	NBjF			03j2uj23 02:11	1
Dlbdbmomi rcHei	MD		0,50	0,19	NBjF			03j2uj23 02:11	1
Dlr c@db AlfCbdbmi rcHei	MD		1,0	0,u6	NBjF			03j2uj23 02:11	1
Dl-lsopdbpaCl rci d(Dl. E)	MD		0,50	0,21	NBjF			03j2uj23 02:11	1
EncHeoC	MD		100	65	NBjF			03j2uj23 02:11	1
EncaC>bNnaCl rci d(ETSE)	MD		0,50	0,27	NBjF			03j2uj23 02:11	1
Encaebi ezi ei	MD		0,50	0,25	NBjF			03j2uj23 02:11	1
t i xHr c@db-1f8-bNHAi ei	MD		0,50	0,21	NBjF			03j2uj23 02:11	1
lsopdbpHeoC	MD		250	120	NBjF			03j2uj23 02:11	1

Method: EPA 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: TB-20230322-1 **Lab Sample ID: 570-132337-2**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopdopa0bi ezi ei	MD		0,50	0,16	NBjF			03j2uj23 02:11	1
Ri ncaQn-SNnaOEnci d(RTSE)	MD		0,50	0,22	NBjF			03j2uj23 02:11	1
Ri ncaCei 4 cOdAi	MD		2,0	0,57	NBjF			03j2uj23 02:11	1
MHpcncHCei	MD		1,0	0,33	NBjF			03j2uj23 02:11	1
e-SNnaCbi ezi ei	MD		1,0	0,22	NBjF			03j2uj23 02:11	1
M-. dopa0bi ezi ei	MD		0,50	0,30	NBjF			03j2uj23 02:11	1
o-XaCei	MD		0,50	0,15	NBjF			03j2uj23 02:11	1
mhp-XaCei	MD		1,0	0,17	NBjF			03j2uj23 02:11	1
p-Isopdopa0oCNi ei	MD		0,50	0,18	NBjF			03j2uj23 02:11	1
si r-SNnaCbi ezi ei	MD		0,50	0,20	NBjF			03j2uj23 02:11	1
/ nad ei	MD		0,50	0,19	NBjF			03j2uj23 02:11	1
Ti dn-HmaQmi ncaCl nci d(T&RE)	MD		0,50	0,32	NBjF			03j2uj23 02:11	1
ni dn-SNnaCHCocoC(TS&)	MD		10	3,8	NBjF			03j2uj23 02:11	1
ni dn-SNnaCbi ezi ei	MD		0,50	0,17	NBjF			03j2uj23 02:11	1
Ti ndHr cOdbi nci ei	MD		0,50	0,21	NBjF			03j2uj23 02:11	1
Ti ndHcaAdofNdHe	MD		10	6,8	NBjF			03j2uj23 02:11	1
ToCNi ei	MD		0,50	0,23	NBjF			03j2uj23 02:11	1
ndHes-1h2-DIr cOdbi nci ei	MD		0,50	0,2u	NBjF			03j2uj23 02:11	1
ndHes-1h3-DIr cOdopdopi ei	MD		0,50	0,18	NBjF			03j2uj23 02:11	1
Tdr cOdbi nci ei	MD		0,50	0,17	NBjF			03j2uj23 02:11	1
Tdr cOdofCNodbmi ncHei	MD		0,50	0,29	NBjF			03j2uj23 02:11	1
VleaCHri nHni	MD		u,0	3,1	NBjF			03j2uj23 02:11	1
VleaOr cOdAi	MD		0,50	0,u7	NBjF			03j2uj23 02:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*98*		*60 - 140*		*03/24/23 02:11*	*1*
4-Bromofluorobenzene (Surr)	*99*		*60 - 140*		*03/24/23 02:11*	*1*
Dibromofluoromethane (Surr)	*91*		*60 - 140*		*03/24/23 02:11*	*1*
Toluene-d8 (Surr)	*103*		*60 - 140*		*03/24/23 02:11*	*1*

Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: SW846 8260B SIM - Volatile Organic Compounds (GC/MS)

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1hu-DloxHei	MD		1,0	0,55	NBjF			03j2uj23 22:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorobutane (Surr)	*122*		*67 - 133*		*03/24/23 22:50*	*1*

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1h2hu-Tdr c@dbbi ezi ei	MD	FL	0,20	0,13	NBjF		03j29j23 05:06	03j31j23 19:56	1
1h2-Dlr c@dbbi ezi ei	MD		0,20	0,11	NBjF		03j29j23 05:06	03j31j23 19:56	1
1h2-Dlpci ea@aAd-Hzlei (Hs &zobi ezi ei)	MD		0,20	0,090	NBjF		03j29j23 05:06	03j31j23 19:56	1
1h8-Dlr c@dbbi ezi ei	MD		0,20	0,11	NBjF		03j29j23 05:06	03j31j23 19:56	1
1hu-Dlr c@dbbi ezi ei	MD		0,20	0,1u	NBjF		03j29j23 05:06	03j31j23 19:56	1
2huh6-Tdr c@dbpci eoC	MD		1,0	0,1u	NBjF		03j29j23 05:06	03j31j23 19:56	1
2hu-Dlr c@dbpci eoC	MD	FL	1,0	0,1u	NBjF		03j29j23 05:06	03j31j23 19:56	1
2hu-Dlmi rca@pci eoC	MD		0,20	0,13	NBjF		03j29j23 05:06	03j31j23 19:56	1
2hu-Dlelrdbpci eoC	MD		5,0	u,3	NBjF		03j29j23 05:06	03j31j23 19:56	1
2hu-Dlelrdbro@Ni ei	MD		0,20	0,12	NBjF		03j29j23 05:06	03j31j23 19:56	1
2h6-Dlelrdbro@Ni ei	MD		0,20	0,18	NBjF		03j29j23 05:06	03j31j23 19:56	1
2-4 c@dbeHpcrcHCei	MD	FL S&	0,20	0,1u	NBjF		03j29j23 05:06	03j31j23 19:56	1
2-4 c@dbpci eoC	MD		0,20	0,095	NBjF		03j29j23 05:06	03j31j23 19:56	1
2-Mlrdbpci eoC	MD		5,0	3,5	NBjF		03j29j23 05:06	03j31j23 19:56	1
3h8'-Dlr c@dbbi ezlAlei	MD		5,0	3,0	NBjF		03j29j23 05:06	03j31j23 19:56	1
uh6-Dlelrdb-2-mi rca@pci eoC	MD		5,0	u,5	NBjF		03j29j23 05:06	03j31j23 19:56	1
u-Sdbmopci ea@pci ea@ rci d	MD		0,20	0,099	NBjF		03j29j23 05:06	03j31j23 19:56	1
u-4 c@db-3-mi rca@pci eoC	MD		1,0	0,13	NBjF		03j29j23 05:06	03j31j23 19:56	1
u-4 c@dbpci ea@pci ea@ rci d	MD		0,20	0,16	NBjF		03j29j23 05:06	03j31j23 19:56	1
u-Mlrdbpci eoC	MD		5,0	3,u	NBjF		03j29j23 05:06	03j31j23 19:56	1
&ri eHpcrci ei	MD	FL	0,20	0,098	NBjF		03j29j23 05:06	03j31j23 19:56	1
&ri eHpcrcaCei	MD		0,20	0,13	NBjF		03j29j23 05:06	03j31j23 19:56	1
&ercdHri ei	MD		0,20	0,08u	NBjF		03j29j23 05:06	03j31j23 19:56	1
Si ezlAlei	MD	FL	5,0	2,7	NBjF		03j29j23 05:06	03j31j23 19:56	1
Si ezo[H]Hercd-Hri ei	MD		0,20	0,12	NBjF		03j29j23 05:06	03j31j23 19:56	1
Si ezo[H]pad ei	MD		0,20	0,15	NBjF		03j29j23 05:06	03j31j23 19:56	1
Si ezo[b]f@bod-Herci ei	MD		0,20	0,11	NBjF		03j29j23 05:06	03j31j23 19:56	1
Si ezo[Brch]pi da@ei	MD		0,20	0,11	NBjF		03j29j23 05:06	03j31j23 19:56	1
Si ezo[k]f@bod-Herci ei	MD		0,20	0,11	NBjF		03j29j23 05:06	03j31j23 19:56	1
bls (2-r c@dblsopdbpa@i rci d	MD	FL	0,20	0,13	NBjF		03j29j23 05:06	03j31j23 19:56	1
Sls(2-r c@dbi rcoxa)mi rcHei	MD	FL	0,20	0,11	NBjF		03j29j23 05:06	03j31j23 19:56	1
Sls(2-r c@dbi rca@ rci d	MD		0,20	0,10	NBjF		03j29j23 05:06	03j31j23 19:56	1
Sls(2-i rca@i xa@pcrcHCHi	MD		5,0	3,6	NBjF		03j29j23 05:06	03j31j23 19:56	1
SNra@bi ezaCpcrcHCHi	MD		1,0	0,67	NBjF		03j29j23 05:06	03j31j23 19:56	1
4 cdasi ei	MD		0,20	0,11	NBjF		03j29j23 05:06	03j31j23 19:56	1
Dlbi ez(Hrc)Hercd-Hri ei	MD		0,20	0,16	NBjF		03j29j23 05:06	03j31j23 19:56	1
Dli rca@pcrcHCHi	MD		2,0	0,18	NBjF		03j29j23 05:06	03j31j23 19:56	1
Dlmi rca@pcrcHCHi	MD		2,0	0,097	NBjF		03j29j23 05:06	03j31j23 19:56	1
Dl-e-bNra@pcrcHCHi	MD		2,0	1,8	NBjF		03j29j23 05:06	03j31j23 19:56	1
Dl-e-or ra@pcrcHCHi	MD		3,0	0,53	NBjF		03j29j23 05:06	03j31j23 19:56	1
g@bod-Herci ei	MD		0,20	0,10	NBjF		03j29j23 05:06	03j31j23 19:56	1
g@bod ei	MD	FL	0,20	0,09u	NBjF		03j29j23 05:06	03j31j23 19:56	1
t i xHr c@dbbi ezi ei	MD		0,20	0,13	NBjF		03j29j23 05:06	03j31j23 19:56	1
t i xHr c@dbbNrHAli ei	MD		0,20	0,15	NBjF		03j29j23 05:06	03j31j23 19:56	1
t i xHr c@dbr ar@pi erHAli ei	MD		0,20	0,15	NBjF		03j29j23 05:06	03j31j23 19:56	1
t i xHr c@dbi rcHei	MD	FL	0,20	0,13	NBjF		03j29j23 05:06	03j31j23 19:56	1
leAi eo[1h2h8-r A]pad ei	MD		0,20	0,13	NBjF		03j29j23 05:06	03j31j23 19:56	1
Isopcodbei	MD		0,20	0,098	NBjF		03j29j23 05:06	03j31j23 19:56	1
MHpcrcHCei	MD		0,20	0,11	NBjF		03j29j23 05:06	03j31j23 19:56	1

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Method: EPA 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM) (Continued)

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MIndobi ezi ei	MD	FL	0,20	0,1u	NBjF		03j29j23 05:06	03j31j23 19:56	1
M-MIndosoAlmi ncaCHmlei	MD		0,20	0,19	NBjF		03j29j23 05:06	03j31j23 19:56	1
M-MIndosoAl-e-pdopaCHmlei	MD		0,20	0,1u	NBjF		03j29j23 05:06	03j31j23 19:56	1
M-MIndosoAlpci eaCHmlei	MD		0,20	0,11	NBjF		03j29j23 05:06	03j31j23 19:56	1
. i enHr cCodopci eoC	MD		1,0	0,8u	NBjF		03j29j23 05:06	03j31j23 19:56	1
. ci eHencd ei	MD		0,20	0,16	NBjF		03j29j23 05:06	03j31j23 19:56	1
. ci eoC	MD		1,0	0,52	NBjF		03j29j23 05:06	03j31j23 19:56	1
. ad ei	MD		0,20	0,086	NBjF		03j29j23 05:06	03j31j23 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*87*		*28 - 127*	*03/29/23 05:06*	*03/31/23 19:56*	*1*
2-Fluorobiphenyl (Surr)	*64*		*31 - 120*	*03/29/23 05:06*	*03/31/23 19:56*	*1*
2-Fluorophenol	*29*		*17 - 120*	*03/29/23 05:06*	*03/31/23 19:56*	*1*
Nitrobenzene-d5	*63*		*27 - 120*	*03/29/23 05:06*	*03/31/23 19:56*	*1*
Phenol-d6 (Surr)	*22*		*10 - 120*	*03/29/23 05:06*	*03/31/23 19:56*	*1*
p-Terphenyl-d14 (Surr)	*77*		*45 - 120*	*03/29/23 05:06*	*03/31/23 19:56*	*1*

Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: SW846 8015B - Gasoline Range Organics - (GC)

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
QL G (4 u-4 12)	MD		50	30	NBjF			03j30j23 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*59*		*20 - 144*		*03/30/23 20:06*	*1*

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: SW846 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4 13-4 28	MD		0,0u9	0,035	mBjF		03j29j23 21:2u	0uj01j23 20:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane (Surr)	*87*		*53 - 151*	*03/29/23 21:24*	*04/01/23 20:08*	*1*

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Client Sample Results

4 Client HCay & Adrchler, . obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-132337-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography)

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.047	J,DX BU BV	0,20	0,019	NBjF			03j2uj23 06:u1	1

ENobfles 4 HGrli eri

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Client Sample Results

4 Client HCay & Adrchler, . obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-132337-1

Method: EPA 218.6 - Chromium, Hexavalent (Ion Chromatography) - Dissolved

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hexavalent chromium	0.046	J,DX BU	0,20	0,019	NBjF			03j2uj23 08:17	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. obPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**51**		2,0	0,72	mBjF			03j2uj23 00:22	2
Mlndni Hs M	MD		0,20	0,086	mBjF			03j2uj23 00:22	2
Fluoride	**0.28**		0,20	0,092	mBjF			03j2uj23 00:22	2
Nitrate as N	**1.5**		0,20	0,039	mBjF			03j2uj23 00:22	2

ENobfles 4 HGrli eri

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Client Sample Results

4 Client HCay & Adrchler, . obPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-132337-1

Method: EPA 300.0 - Anions, Ion Chromatography - DL

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	130		10	2,u	mBjF			03j2uj23 01:15	10

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Client Sample Results

4 Client HC Cay & Adrchler, Job ID: 570-132337-1
. dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA 314.0 - Perchlorate (IC)

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
. i d r c Cd-Hn	MD		2,0	0,91	NBjF			03j25j23 05:00	1

ENobfles 4 HCrli eri

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA NO2NO3 Calc - Nitrogen, Nitrate-Nitrite

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	1.5		0,10	0,020	mBjF			0uj05j23 12:22	1

ENobfles 4 HGrli eri

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.19	J,DX	0,50	0,0035	mBjF		03j27j23 08:29	03j28j23 11:56	1

ENobfles 4 HGrli eri

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: EPA 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.15	J,DX BU	0,50	0,0035	mBjF			03j27j23 18:36	1

ENobfles 4 HGrli eri

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1200**		15	8,6	NBjF		03j27j23 08:51	03j27j23 13:05	1
/ IOi d	MD		1,0	0,23	NBjF		03j27j23 08:51	03j27j23 13:05	1
Arsenic	**2.4**		1,0	0,16	NBjF		03j27j23 08:51	03j27j23 13:05	1
Barium	**62**		1,0	0,17	NBjF		03j27j23 08:51	03j27j23 13:05	1
Si daCCNm	MD	IS	0,50	0,26	NBjF		03j27j23 08:51	03j27j23 13:05	1
4 HAmlNm	MD		1,0	0,13	NBjF		03j27j23 08:51	03j27j23 13:05	1
Chromium	**2.5**		2,0	0,1u	NBjF		03j27j23 08:51	03j27j23 13:05	1
Cobalt	**1.2**		1,0	0,1u	NBjF		03j27j23 08:51	03j27j23 13:05	1
Copper	**3.8**		2,0	0,32	NBjF		03j27j23 08:51	03j27j23 13:05	1
Iron	**2000**		20	3,7	NBjF		03j27j23 08:51	03j27j23 13:05	1
Manganese	**79**	**MB**	1,0	0,u1	NBjF		03j27j23 08:51	03j27j23 13:05	1
Nickel	**3.7**		2,0	0,17	NBjF		03j27j23 08:51	03j27j23 13:05	1
Lead	**2.4**		1,0	0,12	NBjF		03j27j23 08:51	03j27j23 13:05	1
Antimony	**0.82**	**J,DX**	2,0	0,36	NBjF		03j27j23 08:51	03j27j23 13:05	1
Zinc	**13**	**J,DX**	20	2,8	NBjF		03j27j23 08:51	03j27j23 13:05	1
Selenium	**1.0**	**J,DX**	2,0	0,52	NBjF		03j27j23 08:51	03j27j23 13:05	1
TcHCCNm	MD		1,0	0,11	NBjF		03j27j23 08:51	03j27j23 13:05	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**25**	**BU**	15	8,6	NBjF			03j27j23 10:35	1
/ IQi d	MD	SO	1,0	0,23	NBjF			03j27j23 10:35	1
Arsenic	**1.5**	**BU**	1,0	0,16	NBjF			03j27j23 10:35	1
Barium	**39**	**BU**	1,0	0,17	NBjF			03j27j23 10:35	1
Si daCCNm	MD	SO IS FZ	0,50	0,26	NBjF			03j27j23 10:35	1
4 HAmlNm	MD	SO	1,0	0,13	NBjF			03j27j23 10:35	1
Chromium	**0.32**	**J,DX BU**	2,0	0,1u	NBjF			03j27j23 10:35	1
Cobalt	**0.25**	**J,DX BU**	1,0	0,1u	NBjF			03j27j23 10:35	1
Copper	**2.1**	**BU**	2,0	0,32	NBjF			03j27j23 10:35	1
Iron	**44**	**BU**	20	3,7	NBjF			03j27j23 10:35	1
Manganese	**21**	**BU**	1,0	0,u1	NBjF			03j27j23 10:35	1
Nickel	**1.7**	**J,DX BU**	2,0	0,17	NBjF			03j27j23 10:35	1
TcHCCNm	MD	SO	1,0	0,11	NBjF			03j27j23 10:35	1
Fi HA	MD	SO	1,0	0,12	NBjF			03j27j23 10:35	1
Antimony	**1.1**	**J,DX BU**	2,0	0,36	NBjF			03j27j23 10:35	1
Uler	MD	SO	20	2,8	NBjF			03j27j23 10:35	1
/ i CelNm	MD	SO	2,0	0,52	NBjF			03j27j23 10:35	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Total Recoverable

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	280		7,1	0,50	mBjF			03j30j23 19:07	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. obPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Method: SM 2340B - Total Hardness (as CaCO3) by calculation - Dissolved

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	210		7,1	0,50	mBjF			03j29j23 19:06	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

General Chemistry

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
t ER (GlCy Qd Hsi) (166u&)	MD		0,98	0,50	mBjF		03j29j23 09:20	03j29j23 13:u2	1
4 d(III) (E. & 218,6 4 L 3)	MD		0,050	0,0030	mBjF			0uj05j23 15:09	1
&mmoelH (E. & 350,1)	MD		0,075	0,032	mBjF		0uj0uj23 10:15	0uj0uj23 12:37	1
4 aHelAi hTonHC(E. & Ki CHAH 01)	MD		5,0	2,5	NBjF			03j29j23 1u:51	1
Turbidity (SM 2130B)	**19**		0,05	0,05	MTO			03j23j23 21:38	1
Total Dissolved Solids (SM 2540C)	**540**		10	8,7	mBjF			03j29j23 13:29	1
Total Suspended Solids (SM 2540D)	**100**		3,3	2,8	mBjF			03j28j23 16:u7	1
Slor ci mlr HCGxaBi e Di mHeA (/ R 5210S)	MD		2,0	1,0	mBjF		03j23j23 21:03	03j23j23 21:25	1
Carbon, Total Organic (SM 5310D)	**10**		2,0	1,1	mBjF			0uj06j23 08:01	u
RS&/ (/ R 55u04)	MD		0,20	0,050	mBjF		03j23j23 19:35	03j23j23 19:u9	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Conductance (SM 2510B)	**640**		1,0	1,0	Nmcosjr m			03j30j23 16:u0	1
Settleable Solids (SM 2540F)	**0.10**		0,10	0,10	mFjF			03j2uj23 09:17	1

Client Sample Results

4 Client HCay & Adrchler, . dbPrnj/ In : Soi leB / / gF I/ L & HeA SR.

Job ID: 570-132337-1

General Chemistry - Dissolved

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4 d(III) (E. & 218,6 4 L 3)	MD		0,050	0,0030	mBjF			0uj05j23 15:22	1

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Client Sample Results

4 Client HCay & Adrchler, Job ID: 570-132337-1
. dbPrnj/ Ini : Soi leB / / gF I/ L & HeA SR.

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**
Date Collected: 03/22/23 10:20 **Matrix: Water**
Date Received: 03/23/23 19:20

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**13.23**		0,01	0,01	%			0uj05j23 08:28	1
4 oHdsi / HeA (0,5mm no 1mm)	MD		0,01	0,01	%			0uj05j23 08:28	1
Fine Sand (0.125 to 0.25mm)	**0.11**		0,01	0,01	%			0uj05j23 08:28	1
QdHvi C(Bd Hri dncHe 2 mm)	MD		0,01	0,01	%			0uj05j23 08:28	1
Ri AlNm / HeA (0,25 no 0,5 mm)	MD		0,01	0,01	%			0uj05j23 08:28	1
Silt (0.00391 to 0.0625mm)	**68.40**		0,01	0,01	%			0uj05j23 08:28	1
Total Silt and Clay (0 to 0.0626mm)	**81.63**		0,01	0,01	%			0uj05j23 08:28	1
Vi da 4 oHdsi / HeA (1 no 2mm)	MD		0,01	0,01	%			0uj05j23 08:28	1
Very Fine Sand (0.0625 to 0.125 mm)	**18.26**		0,01	0,01	%			0uj05j23 08:28	1

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

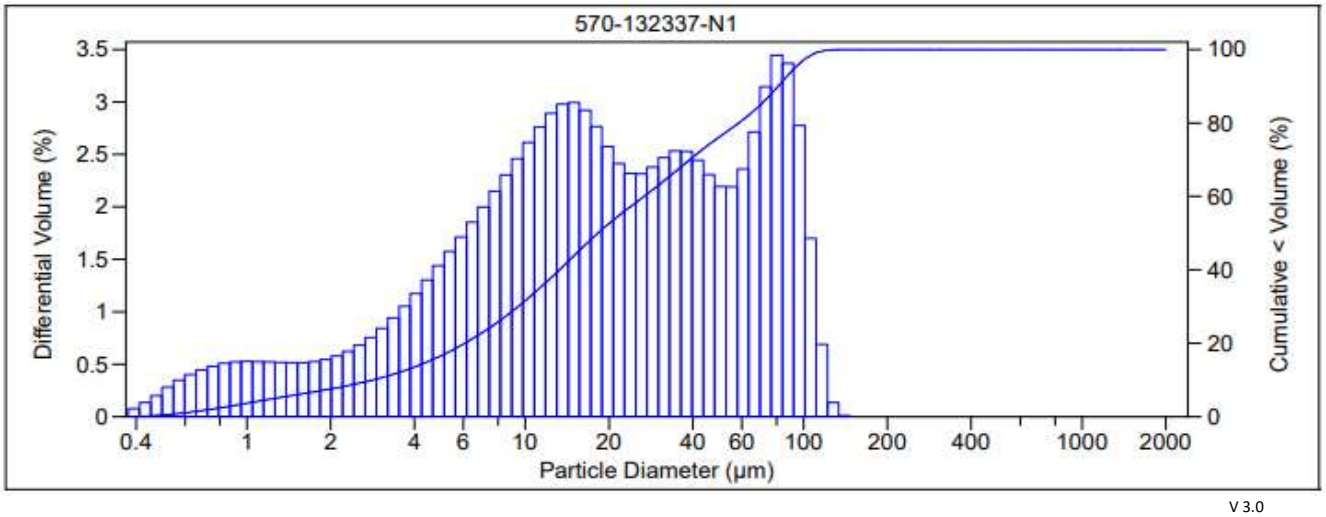
Haley & Aldrich, Inc.

Date Sampled:	03/22/23
Date Received:	03/23/23
Work Order No:	570-132337
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: Boeing SSFL ISRA and BMP

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230322		Silt	0.031

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.11	18.26	68.40	13.23	81.63



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

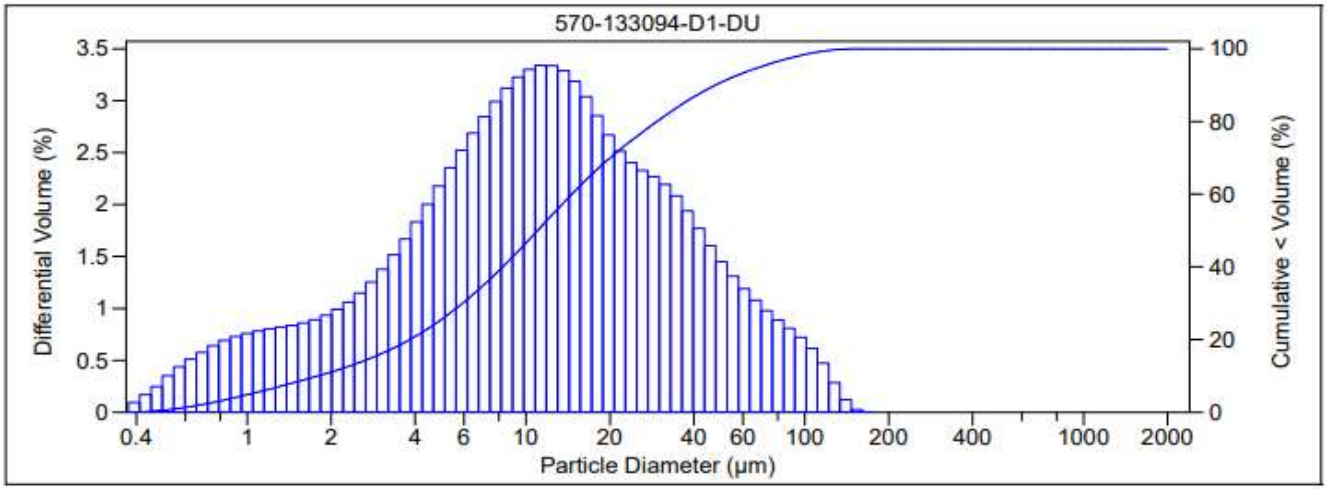
Enthalpy Analytical LLC

Date Sampled:	03/29/23
Date Received:	03/30/23
Work Order No:	570-133094
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: 482457

Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230329		Silt	0.019

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.36	5.83	73.42	20.39	93.81



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

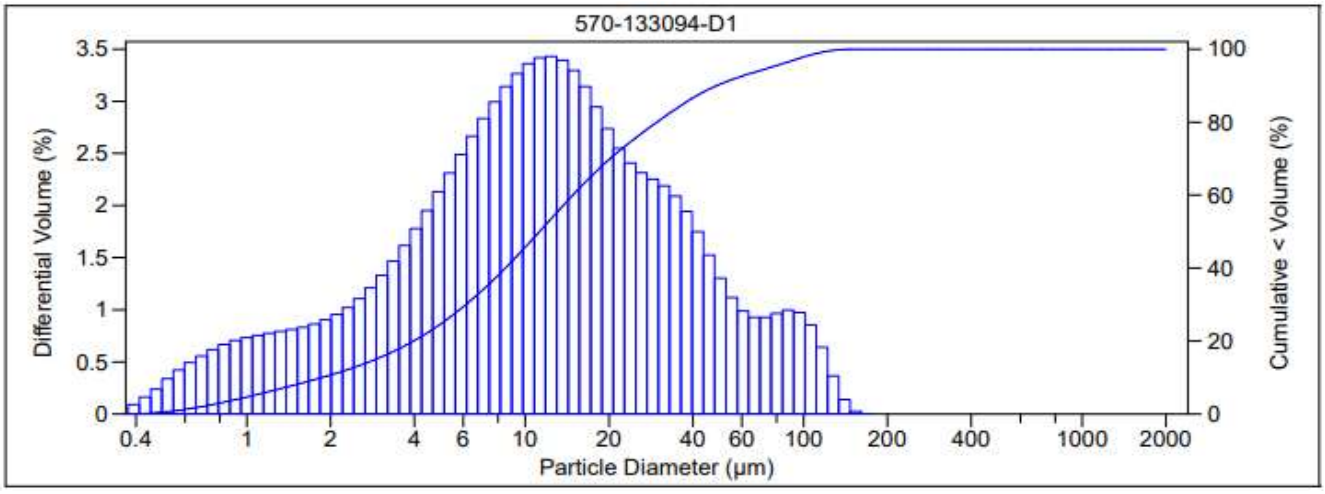
Enthalpy Analytical LLC

Date Sampled:	03/29/23
Date Received:	03/30/23
Work Order No:	570-133094
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: 482457

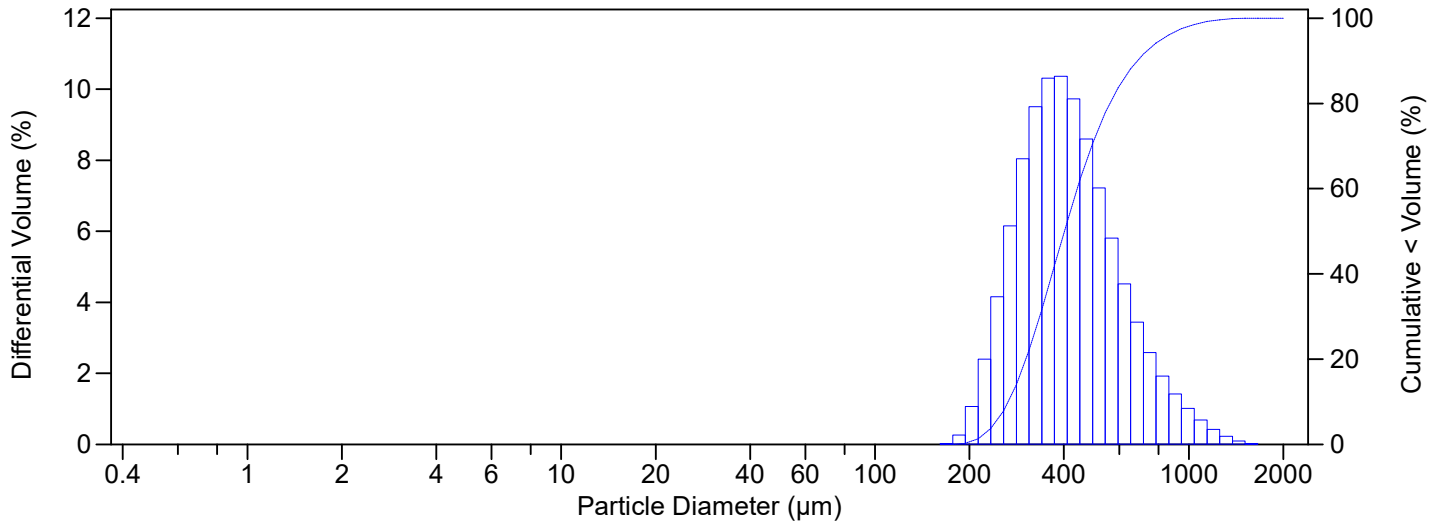
Sample ID	Depth ft	Description	Mean Grain Size mm
EPBBC_20230329		Silt	0.020

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.44	6.54	73.33	19.69	93.02



V 3.0

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.27.17.$ls STD SAND_ 5 Apr 2023_11.27.17.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	17 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.71%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:26 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.27.17.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	446.6 µm	S.D.:	184.8 µm
Median:	401.6 µm	Variance:	34149 µm^2
Mean/Median ratio:	1.112	Skewness:	1.650 Right skewed
Mode:	391.0 µm	Kurtosis:	3.726 Leptokurtic

d_{10}: 265.5 µm d_{50}: 401.6 µm d_{90}: 687.4 µm

Folk and Ward Statistics (Phi)

Mean:	1.28	Median:	1.32	Deviation:	0.53
Skewness:	-0.13	Kurtosis:	1.01		

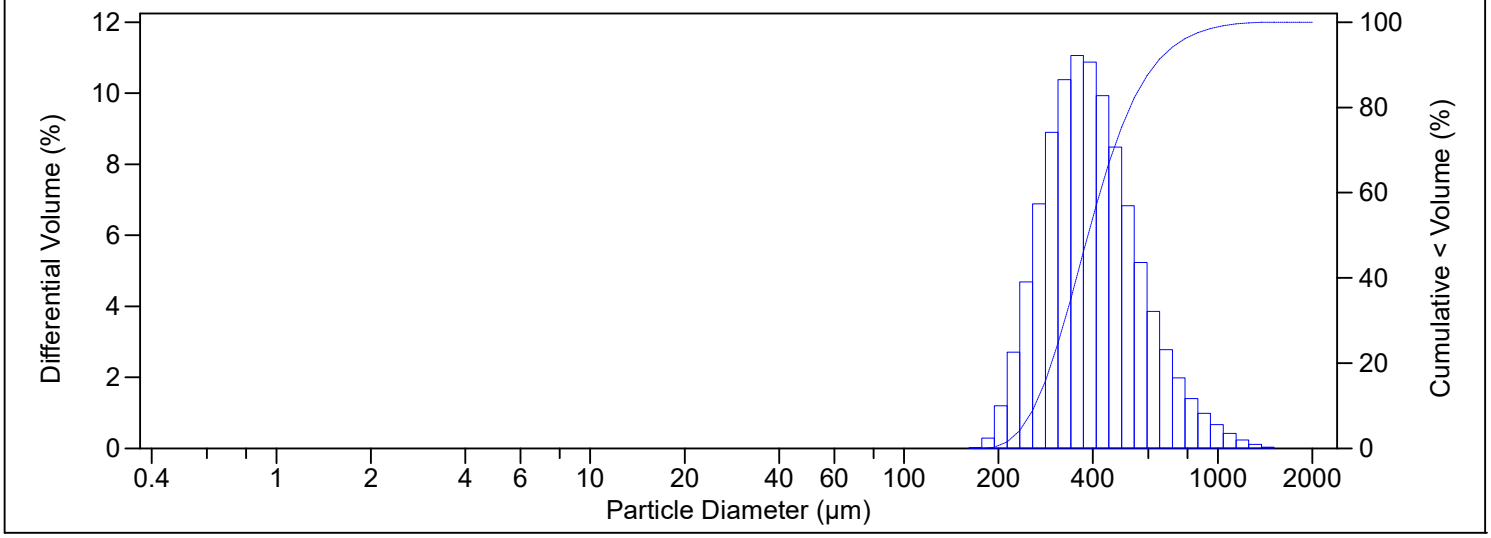
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
241.0 µm	288.7 µm	318.9 µm	367.0 µm	401.6 µm	523.0 µm	599.7 µm	820.0 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.27.17 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.64
250	64.9
500	26.5
1000	1.92
2000	

STD SAND_ 5 Apr 2023_11.27.17.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.42
0.412	0	22.73	0	1255	0.23
0.452	0	24.95	0	1377	0.099
0.496	0	27.39	0	1512	0.021
0.545	0	30.07	0	1660	0.0010
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.016		
3.206	0	176.9	0.26		
3.519	0	194.2	1.07		
3.863	0	213.2	2.40		
4.241	0	234.1	4.16		
4.656	0	256.9	6.15		
5.111	0	282.1	8.04		
5.611	0	309.6	9.51		
6.159	0	339.9	10.3		
6.761	0	373.1	10.4		
7.422	0	409.6	9.73		
8.148	0	449.7	8.60		
8.944	0	493.6	7.22		
9.819	0	541.9	5.81		
10.78	0	594.9	4.52		
11.83	0	653.0	3.44		
12.99	0	716.9	2.58		
14.26	0	786.9	1.93		
15.65	0	863.9	1.42		
17.18	0	948.3	1.02		
18.86	0	1041	0.69		

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.55.13.$ls STD SAND_ 5 Apr 2023_11.55.13.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	19 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.77%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:54 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	10%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.55.13.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	423.4 µm	S.D.:	164.0 µm
Median:	386.1 µm	Variance:	26894 µm^2
Mean/Median ratio:	1.097	Skewness:	1.674 Right skewed
Mode:	356.1 µm	Kurtosis:	4.130 Leptokurtic

d_{10}: 260.9 µm d_{50}: 386.1 µm d_{90}: 632.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.34	Median:	1.37	Deviation:	0.50
Skewness:	-0.12	Kurtosis:	1.02		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
237.9 µm	282.7 µm	310.5 µm	354.7 µm	386.1 µm	491.4 µm	559.5 µm	747.2 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.55.13 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.49
250	68.8
500	22.6
1000	1.11
2000	

STD SAND_ 5 Apr 2023_11.55.13.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.23
0.412	0	22.73	0	1255	0.12
0.452	0	24.95	0	1377	0.040
0.496	0	27.39	0	1512	0.0034
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.017		
3.206	0	176.9	0.29		
3.519	0	194.2	1.20		
3.863	0	213.2	2.71		
4.241	0	234.1	4.69		
4.656	0	256.9	6.88		
5.111	0	282.1	8.90		
5.611	0	309.6	10.4		
6.159	0	339.9	11.1		
6.761	0	373.1	10.9		
7.422	0	409.6	9.93		
8.148	0	449.7	8.48		
8.944	0	493.6	6.83		
9.819	0	541.9	5.23		
10.78	0	594.9	3.86		
11.83	0	653.0	2.78		
12.99	0	716.9	1.98		
14.26	0	786.9	1.41		
15.65	0	863.9	0.98		
17.18	0	948.3	0.67		
18.86	0	1041	0.42		

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-1

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(60-140)	(60-140)	(60-140)	(60-140)
570-132337-1	EPBBC_20230322	100	101	87	100
570-132337-2	TB-20230322-1	98	99	91	103
LCS 570-314233/1004	Lab Control Sample	111	105	92	101
LCSD 570-314233/5	Lab Control Sample Dup	106	105	92	105
MB 570-314233/7	Method Blank	104	99	92	101

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		14DCBTN
Lab Sample ID	Client Sample ID	(67-133)
570-132337-1	EPBBC_20230322	122
LCS 570-314624/4	Lab Control Sample	109
LCSD 570-314624/5	Lab Control Sample Dup	107
MB 570-314624/8	Method Blank	107

Surrogate Legend

14DCBTN = 1,4-Dichlorobutane (Surr)

Method: 625.1 SIM - Semivolatile Organic Compounds GC/MS (SIM)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL6	TPHd14
Lab Sample ID	Client Sample ID	(28-127)	(31-120)	(17-120)	(27-120)	(10-120)	(45-120)
570-132337-1	EPBBC_20230322	87	64	29	63	22	77
LCS 570-315229/2-A	Lab Control Sample	83	54	35	52	24	86
LCSD 570-315229/3-A	Lab Control Sample Dup	91	66	41	63	30	91
MB 570-315229/1-A	Method Blank	85	66	31	73	21	85

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl (Surr)
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL6 = Phenol-d6 (Surr)
TPHd14 = p-Terphenyl-d14 (Surr)

Method: 8015B - Gasoline Range Organics - (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
		BFB1
Lab Sample ID	Client Sample ID	(20-144)
570-132337-1	EPBBC_20230322	59

Surrogate Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132337-1
Project/Site: Boeing SSFL ISRA and BMP

Method: 8015B - Gasoline Range Organics - (GC) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	BFB1 (20-144)						
570-132337-1 MS	EPBBC_20230322	77						
570-132337-1 MSD	EPBBC_20230322	69						
LCS 570-316065/7	Lab Control Sample	76						
LCSD 570-316065/8	Lab Control Sample Dup	79						
MB 570-316065/9	Method Blank	66						

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	OTCSN1 (53-151)						
570-132337-1	EPBBC_20230322	87						
LCS 570-315947/2-A	Lab Control Sample	99						
LCSD 570-315947/3-A	Lab Control Sample Dup	105						
MB 570-315947/1-A	Method Blank	102						

Surrogate Legend

OTCSN = n-Octacosane (Surr)

Method: 624.1 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-314233/7
Matri9: x ater
NnalTsis Batch: 314233

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
1,1,1,2-Tetrachloroethane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			03/23/23 18:36	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.20	ug/L			03/23/23 18:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.0	0.33	ug/L			03/23/23 18:36	1
1,1,2-Trichloroethane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,1-Dichloroethane	ND		0.50	0.39	ug/L			03/23/23 18:36	1
1,1-Dichloroethene	ND		0.50	0.33	ug/L			03/23/23 18:36	1
1,1-Dichloropropene	ND		0.50	0.22	ug/L			03/23/23 18:36	1
1,2,3-Trichlorobenzene	ND		1.0	0.19	ug/L			03/23/23 18:36	1
1,2,3-Trichloropropane	ND		1.0	0.31	ug/L			03/23/23 18:36	1
1,2,4-Trichlorobenzene	ND		1.0	0.29	ug/L			03/23/23 18:36	1
1,2,4-Trimethylbenzene	ND		0.50	0.28	ug/L			03/23/23 18:36	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.51	ug/L			03/23/23 18:36	1
1,2-Dibromoethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1
1,2-Dichloro-1,1,2-trifluoroethane	ND		2.0	0.58	ug/L			03/23/23 18:36	1
1,2-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
1,2-Dichloroethane	ND		0.50	0.15	ug/L			03/23/23 18:36	1
1,2-Dichloropropane	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,3,5-Trimethylbenzene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
1,3-Dichlorobenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
1,3-Dichloropropane	ND		0.50	0.21	ug/L			03/23/23 18:36	1
1,4-Dichlorobenzene	ND		0.50	0.11	ug/L			03/23/23 18:36	1
2,2-Dichloro-1,1,1-trifluoroethane	ND		10	5.0	ug/L			03/23/23 18:36	1
2,2-Dichloropropane	ND		1.0	0.25	ug/L			03/23/23 18:36	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			03/23/23 18:36	1
2-Chloroethyl vinyl ether	ND		2.0	1.1	ug/L			03/23/23 18:36	1
2-Chlorotoluene	ND		0.50	0.11	ug/L			03/23/23 18:36	1
2-Hexanone	ND		5.0	2.2	ug/L			03/23/23 18:36	1
4-Chlorotoluene	ND		0.50	0.22	ug/L			03/23/23 18:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.6	ug/L			03/23/23 18:36	1
Acetone	ND		20	16	ug/L			03/23/23 18:36	1
Acrolein	ND		5.0	4.6	ug/L			03/23/23 18:36	1
Acrylonitrile	ND		2.0	1.4	ug/L			03/23/23 18:36	1
Benzene	ND		0.50	0.28	ug/L			03/23/23 18:36	1
Bromobenzene	ND		0.50	0.23	ug/L			03/23/23 18:36	1
Bromochloromethane	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Bromodichloromethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Bromoform	ND		1.0	0.25	ug/L			03/23/23 18:36	1
Bromomethane	ND		0.50	0.22	ug/L			03/23/23 18:36	1
Carbon disulfide	ND		1.0	0.61	ug/L			03/23/23 18:36	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			03/23/23 18:36	1
Chlorobenzene	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Chloroethane	ND		1.0	0.29	ug/L			03/23/23 18:36	1
Chloroform	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Chloromethane	ND		0.50	0.30	ug/L			03/23/23 18:36	1
cis-1,2-Dichloroethene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
cis-1,3-Dichloropropene	ND		0.50	0.30	ug/L			03/23/23 18:36	1
Cyclohexane	ND		2.0	0.79	ug/L			03/23/23 18:36	1

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-314233/7
Matri9: x ater
NnalTsis Batch: 314233

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Dibromochloromethane	ND		0.50	0.15	ug/L			03/23/23 18:36	1
Dibromomethane	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Dichlorodifluoromethane	ND		1.0	0.46	ug/L			03/23/23 18:36	1
Di-isopropyl ether (DIPE)	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Ethanol	ND		100	65	ug/L			03/23/23 18:36	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.27	ug/L			03/23/23 18:36	1
Ethylbenzene	ND		0.50	0.25	ug/L			03/23/23 18:36	1
Hexachloro-1,3-butadiene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Isopropanol	ND		250	120	ug/L			03/23/23 18:36	1
Isopropylbenzene	ND		0.50	0.16	ug/L			03/23/23 18:36	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.22	ug/L			03/23/23 18:36	1
Methylene Chloride	ND		2.0	0.57	ug/L			03/23/23 18:36	1
Naphthalene	ND		1.0	0.33	ug/L			03/23/23 18:36	1
n-Butylbenzene	ND		1.0	0.22	ug/L			03/23/23 18:36	1
N-Propylbenzene	ND		0.50	0.30	ug/L			03/23/23 18:36	1
o-Xylene	ND		0.50	0.15	ug/L			03/23/23 18:36	1
m,p-Xylene	ND		1.0	0.17	ug/L			03/23/23 18:36	1
p-Isopropyltoluene	ND		0.50	0.18	ug/L			03/23/23 18:36	1
sec-Butylbenzene	ND		0.50	0.20	ug/L			03/23/23 18:36	1
Styrene	ND		0.50	0.19	ug/L			03/23/23 18:36	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.32	ug/L			03/23/23 18:36	1
tert-Butyl alcohol (TBA)	ND		10	3.8	ug/L			03/23/23 18:36	1
tert-Butylbenzene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
Tetrachloroethene	ND		0.50	0.21	ug/L			03/23/23 18:36	1
Tetrahydrofuran	ND		10	6.8	ug/L			03/23/23 18:36	1
Toluene	ND		0.50	0.23	ug/L			03/23/23 18:36	1
trans-1,2-Dichloroethene	ND		0.50	0.24	ug/L			03/23/23 18:36	1
trans-1,3-Dichloropropene	ND		0.50	0.18	ug/L			03/23/23 18:36	1
Trichloroethene	ND		0.50	0.17	ug/L			03/23/23 18:36	1
Trichlorofluoromethane	ND		0.50	0.29	ug/L			03/23/23 18:36	1
Vinyl acetate	ND		4.0	3.1	ug/L			03/23/23 18:36	1
Vinyl chloride	ND		0.50	0.47	ug/L			03/23/23 18:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*194*		*39 - 149*		*960260260 1/ 763*	*1*
4-5roB omuorof enbene (Surr)	*: :*		*39 - 149*		*960260260 1/ 763*	*1*
Dif roB omuoroB ethane (Surr)	*: 2*		*39 - 149*		*960260260 1/ 763*	*1*
zoluene-d/ (Surr)	*191*		*39 - 149*		*960260260 1/ 763*	*1*

Lab Sample ID: LCS 570-314233/1004
Matri9: x ater
NnalTsis Batch: 314233

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.9		ug/L		109	60 - 140
1,1,1-Trichloroethane	10.0	11.1		ug/L		111	70 - 130
1,1,2,2-Tetrachloroethane	10.0	9.36		ug/L		94	60 - 140
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	7.90		ug/L		79	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-314233/1004
Matri9: x ater
NnalTsis Batch: 314233

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
1,1,2-Trichloroethane	10.0	9.95		ug/L		100	70 - 130
1,1-Dichloroethane	10.0	11.9		ug/L		119	70 - 130
1,1-Dichloroethene	10.0	10.7		ug/L		107	50 - 150
1,1-Dichloropropene	10.0	10.3		ug/L		103	60 - 140
1,2,3-Trichlorobenzene	10.0	9.96		ug/L		100	60 - 140
1,2,3-Trichloropropane	10.0	10.1		ug/L		101	60 - 140
1,2,4-Trichlorobenzene	10.0	10.0		ug/L		100	60 - 140
1,2,4-Trimethylbenzene	10.0	9.65		ug/L		96	60 - 140
1,2-Dibromo-3-Chloropropane	10.0	9.56		ug/L		96	60 - 140
1,2-Dibromoethane	10.0	10.4		ug/L		104	60 - 140
1,2-Dichloro-1,1,2-trifluoroethane	10.0	9.04		ug/L		90	60 - 140
1,2-Dichlorobenzene	10.0	9.91		ug/L		99	65 - 135
1,2-Dichloroethane	10.0	12.4		ug/L		124	70 - 130
1,2-Dichloropropane	10.0	12.7		ug/L		127	35 - 165
1,3,5-Trimethylbenzene	10.0	11.1		ug/L		111	60 - 140
1,3-Dichlorobenzene	10.0	10.4		ug/L		104	70 - 130
1,3-Dichloropropane	10.0	10.5		ug/L		105	60 - 140
1,4-Dichlorobenzene	10.0	10.4		ug/L		104	65 - 135
2,2-Dichloro-1,1,1-trifluoroethane	10.0	8.77	J,DX	ug/L		88	60 - 140
2,2-Dichloropropane	10.0	12.0		ug/L		120	60 - 140
2-Butanone (MEK)	10.0	9.31		ug/L		93	60 - 140
2-Chloroethyl vinyl ether	10.0	9.23		ug/L		92	1 - 225
2-Chlorotoluene	10.0	11.5		ug/L		115	60 - 140
2-Hexanone	10.0	9.36		ug/L		94	60 - 140
4-Chlorotoluene	10.0	10.4		ug/L		104	60 - 140
4-Methyl-2-pentanone (MIBK)	10.0	12.6		ug/L		126	60 - 140
Acetone	10.0	ND		ug/L		99	60 - 140
Acrolein	20.0	20.6		ug/L		103	60 - 140
Acrylonitrile	10.0	14.0		ug/L		140	60 - 140
Benzene	10.0	10.7		ug/L		107	65 - 135
Bromobenzene	10.0	11.5		ug/L		115	60 - 140
Bromochloromethane	10.0	10.7		ug/L		107	60 - 140
Bromodichloromethane	10.0	11.1		ug/L		111	65 - 135
Bromoform	10.0	10.8		ug/L		108	70 - 130
Bromomethane	10.0	11.6		ug/L		116	15 - 185
Carbon disulfide	10.0	8.29		ug/L		83	60 - 140
Carbon tetrachloride	10.0	10.4		ug/L		104	70 - 130
Chlorobenzene	10.0	11.0		ug/L		110	65 - 135
Chloroethane	10.0	9.95		ug/L		99	40 - 160
Chloroform	10.0	10.5		ug/L		105	70 - 135
Chloromethane	10.0	12.0		ug/L		120	1 - 205
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	60 - 140
cis-1,3-Dichloropropene	10.0	10.8		ug/L		108	25 - 175
Cyclohexane	10.0	9.61		ug/L		96	60 - 140
Dibromochloromethane	10.0	11.0		ug/L		110	70 - 135
Dibromomethane	10.0	11.0		ug/L		110	60 - 140
Dichlorodifluoromethane	10.0	10.3		ug/L		103	60 - 140
Di-isopropyl ether (DIPE)	10.0	12.7		ug/L		127	60 - 140
Ethanol	100	97.3	J,DX	ug/L		97	60 - 140

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-314233/1004
Matri9: x ater
NnalTsis Batch: 314233

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Ethyl-t-butyl ether (ETBE)	10.0	13.0		ug/L		130	60 - 140
Ethylbenzene	10.0	11.2		ug/L		112	60 - 140
Hexachloro-1,3-butadiene	10.0	10.9		ug/L		109	60 - 140
Isopropanol	50.0	ND		ug/L		107	60 - 140
Isopropylbenzene	10.0	11.3		ug/L		113	60 - 140
Methyl-t-Butyl Ether (MTBE)	10.0	10.1		ug/L		101	60 - 140
Methylene Chloride	10.0	9.43		ug/L		94	60 - 140
Naphthalene	10.0	10.2		ug/L		102	60 - 140
n-Butylbenzene	10.0	10.9		ug/L		109	60 - 140
N-Propylbenzene	10.0	11.7		ug/L		117	60 - 140
o-Xylene	10.0	11.3		ug/L		113	60 - 140
m,p-Xylene	20.0	23.7		ug/L		118	60 - 140
p-Isopropyltoluene	10.0	10.3		ug/L		103	60 - 140
sec-Butylbenzene	10.0	10.5		ug/L		105	60 - 140
Styrene	10.0	11.1		ug/L		111	60 - 140
Tert-amyl-methyl ether (TAME)	10.0	10.7		ug/L		107	60 - 140
tert-Butyl alcohol (TBA)	50.0	55.3		ug/L		111	60 - 140
tert-Butylbenzene	10.0	10.8		ug/L		108	60 - 140
Tetrachloroethene	10.0	11.6		ug/L		116	70 - 130
Tetrahydrofuran	10.0	12.1		ug/L		121	60 - 140
Toluene	10.0	11.0		ug/L		110	70 - 130
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	70 - 130
trans-1,3-Dichloropropene	10.0	10.4		ug/L		104	50 - 150
Trichloroethene	10.0	10.9		ug/L		109	65 - 135
Trichlorofluoromethane	10.0	10.5		ug/L		105	50 - 150
Vinyl acetate	10.0	11.5		ug/L		115	60 - 140
Vinyl chloride	10.0	11.0		ug/L		110	5 - 195

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*39 - 149*
4-5roB orhuorof enbene (Surr)	*198*		*39 - 149*
Dif roB orhuoroB ethane (Surr)	*: 2*		*39 - 149*
zoluene-d/ (Surr)	*191*		*39 - 149*

Lab Sample ID: LCSD 570-314233/5
Matri9: x ater
NnalTsis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
1,1,1,2-Tetrachloroethane	10.0	11.1		ug/L		111	60 - 140	1	30
1,1,1-Trichloroethane	10.0	11.1		ug/L		111	70 - 130	1	36
1,1,2,2-Tetrachloroethane	10.0	9.50		ug/L		95	60 - 140	2	61
1,1,2-Trichloro-1,2,2-trifluoroetha ne	10.0	9.65		ug/L		97	60 - 140	20	30
1,1,2-Trichloroethane	10.0	10.1		ug/L		101	70 - 130	2	45
1,1-Dichloroethane	10.0	11.9		ug/L		119	70 - 130	0	40
1,1-Dichloroethene	10.0	10.9		ug/L		109	50 - 150	1	32
1,1-Dichloropropene	10.0	10.5		ug/L		105	60 - 140	2	30
1,2,3-Trichlorobenzene	10.0	10.5		ug/L		105	60 - 140	6	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-314233/5
Matri9: x ater
NnalTsis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
1,2,3-Trichloropropane			10.0	9.96		ug/L		100	60 - 140	2	30
1,2,4-Trichlorobenzene			10.0	10.8		ug/L		108	60 - 140	8	30
1,2,4-Trimethylbenzene			10.0	10.2		ug/L		102	60 - 140	5	30
1,2-Dibromo-3-Chloropropane			10.0	9.93		ug/L		99	60 - 140	4	30
1,2-Dibromoethane			10.0	10.3		ug/L		103	60 - 140	1	30
1,2-Dichloro-1,1,2-trifluoroethane			10.0	9.51		ug/L		95	60 - 140	5	30
1,2-Dichlorobenzene			10.0	10.3		ug/L		103	65 - 135	4	57
1,2-Dichloroethane			10.0	12.5		ug/L		125	70 - 130	1	49
1,2-Dichloropropane			10.0	12.7		ug/L		127	35 - 165	0	55
1,3,5-Trimethylbenzene			10.0	11.4		ug/L		114	60 - 140	2	30
1,3-Dichlorobenzene			10.0	10.7		ug/L		107	70 - 130	3	43
1,3-Dichloropropane			10.0	10.4		ug/L		104	60 - 140	1	30
1,4-Dichlorobenzene			10.0	10.8		ug/L		108	65 - 135	4	57
2,2-Dichloro-1,1,1-trifluoroethane			10.0	9.03	J,DX	ug/L		90	60 - 140	3	30
2,2-Dichloropropane			10.0	12.1		ug/L		121	60 - 140	1	30
2-Butanone (MEK)			10.0	7.93		ug/L		79	60 - 140	16	30
2-Chloroethyl vinyl ether			10.0	8.53		ug/L		85	1 - 225	8	71
2-Chlorotoluene			10.0	11.5		ug/L		115	60 - 140	1	30
2-Hexanone			10.0	11.1		ug/L		111	60 - 140	17	30
4-Chlorotoluene			10.0	11.0		ug/L		110	60 - 140	5	30
4-Methyl-2-pentanone (MIBK)			10.0	13.1		ug/L		131	60 - 140	4	30
Acetone			10.0	ND		ug/L		113	60 - 140	13	30
Acrolein			20.0	18.9		ug/L		95	60 - 140	8	60
Acrylonitrile			10.0	12.3		ug/L		123	60 - 140	13	60
Benzene			10.0	11.1		ug/L		111	65 - 135	3	61
Bromobenzene			10.0	11.4		ug/L		114	60 - 140	1	30
Bromochloromethane			10.0	10.3		ug/L		103	60 - 140	4	30
Bromodichloromethane			10.0	11.4		ug/L		114	65 - 135	2	56
Bromoform			10.0	10.9		ug/L		109	70 - 130	1	42
Bromomethane			10.0	10.7		ug/L		107	15 - 185	7	61
Carbon disulfide			10.0	10.2		ug/L		102	60 - 140	21	30
Carbon tetrachloride			10.0	11.0		ug/L		110	70 - 130	6	41
Chlorobenzene			10.0	11.1		ug/L		111	65 - 135	2	53
Chloroethane			10.0	9.15		ug/L		91	40 - 160	8	78
Chloroform			10.0	9.96		ug/L		100	70 - 135	5	30
Chloromethane			10.0	11.5		ug/L		115	1 - 205	4	60
cis-1,2-Dichloroethene			10.0	10.6		ug/L		106	60 - 140	0	30
cis-1,3-Dichloropropene			10.0	11.3		ug/L		113	25 - 175	4	58
Cyclohexane			10.0	10.8		ug/L		108	60 - 140	12	30
Dibromochloromethane			10.0	10.9		ug/L		109	70 - 135	1	50
Dibromomethane			10.0	11.3		ug/L		113	60 - 140	3	30
Dichlorodifluoromethane			10.0	7.99		ug/L		80	60 - 140	25	30
Di-isopropyl ether (DIPE)			10.0	12.3		ug/L		123	60 - 140	3	30
Ethanol			100	117		ug/L		117	60 - 140	18	30
Ethyl-t-butyl ether (ETBE)			10.0	12.6		ug/L		126	60 - 140	3	30
Ethylbenzene			10.0	11.6		ug/L		116	60 - 140	3	63
Hexachloro-1,3-butadiene			10.0	11.7		ug/L		117	60 - 140	7	30
Isopropanol			50.0	ND		ug/L		92	60 - 140	16	30
Isopropylbenzene			10.0	11.6		ug/L		116	60 - 140	2	30

Method: 624.1 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-314233/5
Matri9: x ater
NnalTsis Batch: 314233

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Methyl-t-Butyl Ether (MTBE)	10.0	9.74		ug/L		97	60 - 140	4	30
Methylene Chloride	10.0	9.50		ug/L		95	60 - 140	1	28
Naphthalene	10.0	10.4		ug/L		104	60 - 140	2	30
n-Butylbenzene	10.0	11.4		ug/L		114	60 - 140	4	30
N-Propylbenzene	10.0	12.2		ug/L		122	60 - 140	4	30
o-Xylene	10.0	11.5		ug/L		115	60 - 140	2	30
m,p-Xylene	20.0	23.8		ug/L		119	60 - 140	1	30
p-Isopropyltoluene	10.0	10.8		ug/L		108	60 - 140	4	30
sec-Butylbenzene	10.0	11.0		ug/L		110	60 - 140	5	30
Styrene	10.0	11.0		ug/L		110	60 - 140	1	30
Tert-amyl-methyl ether (TAME)	10.0	10.6		ug/L		106	60 - 140	1	30
tert-Butyl alcohol (TBA)	50.0	67.4		ug/L		135	60 - 140	20	30
tert-Butylbenzene	10.0	11.3		ug/L		113	60 - 140	4	30
Tetrachloroethene	10.0	11.9		ug/L		119	70 - 130	3	39
Tetrahydrofuran	10.0	11.5		ug/L		115	60 - 140	5	30
Toluene	10.0	11.2		ug/L		112	70 - 130	2	41
trans-1,2-Dichloroethene	10.0	10.3		ug/L		103	70 - 130	3	45
trans-1,3-Dichloropropene	10.0	11.0		ug/L		110	50 - 150	5	86
Trichloroethene	10.0	11.8		ug/L		118	65 - 135	8	48
Trichlorofluoromethane	10.0	8.44		ug/L		84	50 - 150	22	84
Vinyl acetate	10.0	11.2		ug/L		112	60 - 140	3	30
Vinyl chloride	10.0	9.50		ug/L		95	5 - 195	15	66

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*193*		*39 - 149*
4-5roB omuorof enbene (Surr)	*198*		*39 - 149*
Dif roB omuoroB ethane (Surr)	*: 2*		*39 - 149*
zoluene-d/ (Surr)	*198*		*39 - 149*

Method: %260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-314624/%
Matri9: x ater
NnalTsis Batch: 314624

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
1,4-Dioxane	ND		1.0	0.55	ug/L			03/24/23 20:06	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,4-Dichlorof utane (Surr)	*19T*		*3T - 166*		*960240 26 297 93*	*1*

Lab Sample ID: LCS 570-314624/4
Matri9: x ater
NnalTsis Batch: 314624

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
1,4-Dioxane	20.0	18.3		ug/L		91	75 - 120

Method: %260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-314624/4
Matri9: x ater
NnalTsis Batch: 314624

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,4-Dichlorof utane (Surr)	*19:*		*3T - 166*

Lab Sample ID: LCSD 570-314624/5
Matri9: x ater
NnalTsis Batch: 314624

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
1,4-Dioxane			20.0	17.5		ug/L		88	75 - 120	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,4-Dichlorof utane (Surr)	*19T*		*3T - 166*

Method: 625.1 SIM - Semi8olatile Organic Compounds GC/MS (SIM)

Lab Sample ID: MB 570-31522v/1-N
Matri9: x ater
NnalTsis Batch: 316467

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N
Wrep Batch: 31522v

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
1,2,4-Trichlorobenzene	ND		0.20	0.13	ug/L		03/28/23 05:48	03/31/23 15:41	1
1,2-Dichlorobenzene	ND		0.20	0.11	ug/L		03/28/23 05:48	03/31/23 15:41	1
1,2-Diphenylhydrazine(as Azobenzene)	ND		0.20	0.091	ug/L		03/28/23 05:48	03/31/23 15:41	1
1,3-Dichlorobenzene	ND		0.20	0.12	ug/L		03/28/23 05:48	03/31/23 15:41	1
1,4-Dichlorobenzene	ND		0.20	0.14	ug/L		03/28/23 05:48	03/31/23 15:41	1
2,4,6-Trichlorophenol	ND		1.0	0.14	ug/L		03/28/23 05:48	03/31/23 15:41	1
2,4-Dichlorophenol	ND		1.0	0.14	ug/L		03/28/23 05:48	03/31/23 15:41	1
2,4-Dimethylphenol	ND		0.20	0.13	ug/L		03/28/23 05:48	03/31/23 15:41	1
2,4-Dinitrophenol	ND		5.0	4.3	ug/L		03/28/23 05:48	03/31/23 15:41	1
2,4-Dinitrotoluene	ND		0.20	0.12	ug/L		03/28/23 05:48	03/31/23 15:41	1
2,6-Dinitrotoluene	ND		0.20	0.18	ug/L		03/28/23 05:48	03/31/23 15:41	1
2-Chloronaphthalene	ND		0.20	0.14	ug/L		03/28/23 05:48	03/31/23 15:41	1
2-Chlorophenol	ND		0.20	0.096	ug/L		03/28/23 05:48	03/31/23 15:41	1
2-Nitrophenol	ND		5.0	3.5	ug/L		03/28/23 05:48	03/31/23 15:41	1
3,3'-Dichlorobenzidine	ND		5.0	3.0	ug/L		03/28/23 05:48	03/31/23 15:41	1
4,6-Dinitro-2-methylphenol	ND		5.0	4.5	ug/L		03/28/23 05:48	03/31/23 15:41	1
4-Bromophenyl phenyl ether	ND		0.20	0.10	ug/L		03/28/23 05:48	03/31/23 15:41	1
4-Chloro-3-methylphenol	ND		1.0	0.13	ug/L		03/28/23 05:48	03/31/23 15:41	1
4-Chlorophenyl phenyl ether	ND		0.20	0.17	ug/L		03/28/23 05:48	03/31/23 15:41	1
4-Nitrophenol	ND		5.0	3.4	ug/L		03/28/23 05:48	03/31/23 15:41	1
Acenaphthene	ND		0.20	0.098	ug/L		03/28/23 05:48	03/31/23 15:41	1
Acenaphthylene	ND		0.20	0.13	ug/L		03/28/23 05:48	03/31/23 15:41	1
Anthracene	ND		0.20	0.084	ug/L		03/28/23 05:48	03/31/23 15:41	1
Benzidine	ND		5.0	2.7	ug/L		03/28/23 05:48	03/31/23 15:41	1
Benzo[a]anthracene	ND		0.20	0.12	ug/L		03/28/23 05:48	03/31/23 15:41	1
Benzo[a]pyrene	ND		0.20	0.15	ug/L		03/28/23 05:48	03/31/23 15:41	1
Benzo[b]fluoranthene	ND		0.20	0.11	ug/L		03/28/23 05:48	03/31/23 15:41	1
Benzo[g,h,i]perylene	ND		0.20	0.11	ug/L		03/28/23 05:48	03/31/23 15:41	1
Benzo[k]fluoranthene	ND		0.20	0.11	ug/L		03/28/23 05:48	03/31/23 15:41	1

Method: 625.1 SIM - Semi8olatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: MB 570-31522v/1-N
Matri9: x ater
NnalTsis Batch: 316467

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N
Wrep Batch: 31522v

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
bis (2-chloroisopropyl) ether	ND		0.20	0.13	ug/L		03/28/23 05:48	03/31/23 15:41	1
Bis(2-chloroethoxy)methane	ND		0.20	0.11	ug/L		03/28/23 05:48	03/31/23 15:41	1
Bis(2-chloroethyl)ether	ND		0.20	0.10	ug/L		03/28/23 05:48	03/31/23 15:41	1
Bis(2-ethylhexyl) phthalate	ND		5.0	3.6	ug/L		03/28/23 05:48	03/31/23 15:41	1
Butyl benzyl phthalate	ND		1.0	0.67	ug/L		03/28/23 05:48	03/31/23 15:41	1
Chrysene	ND		0.20	0.11	ug/L		03/28/23 05:48	03/31/23 15:41	1
Dibenz(a,h)anthracene	ND		0.20	0.16	ug/L		03/28/23 05:48	03/31/23 15:41	1
Diethyl phthalate	0.199	J,DX	2.0	0.18	ug/L		03/28/23 05:48	03/31/23 15:41	1
Dimethyl phthalate	ND		2.0	0.098	ug/L		03/28/23 05:48	03/31/23 15:41	1
Di-n-butyl phthalate	ND		2.0	1.8	ug/L		03/28/23 05:48	03/31/23 15:41	1
Di-n-octyl phthalate	ND		3.0	0.54	ug/L		03/28/23 05:48	03/31/23 15:41	1
Fluoranthene	ND		0.20	0.10	ug/L		03/28/23 05:48	03/31/23 15:41	1
Fluorene	ND		0.20	0.095	ug/L		03/28/23 05:48	03/31/23 15:41	1
Hexachlorobenzene	ND		0.20	0.13	ug/L		03/28/23 05:48	03/31/23 15:41	1
Hexachlorobutadiene	ND		0.20	0.15	ug/L		03/28/23 05:48	03/31/23 15:41	1
Hexachlorocyclopentadiene	ND		0.20	0.15	ug/L		03/28/23 05:48	03/31/23 15:41	1
Hexachloroethane	ND		0.20	0.13	ug/L		03/28/23 05:48	03/31/23 15:41	1
Indeno[1,2,3-cd]pyrene	ND		0.20	0.13	ug/L		03/28/23 05:48	03/31/23 15:41	1
Isophorone	ND		0.20	0.099	ug/L		03/28/23 05:48	03/31/23 15:41	1
Naphthalene	ND		0.20	0.11	ug/L		03/28/23 05:48	03/31/23 15:41	1
Nitrobenzene	ND		0.20	0.14	ug/L		03/28/23 05:48	03/31/23 15:41	1
N-Nitrosodimethylamine	ND		0.20	0.19	ug/L		03/28/23 05:48	03/31/23 15:41	1
N-Nitrosodi-n-propylamine	ND		0.20	0.14	ug/L		03/28/23 05:48	03/31/23 15:41	1
N-Nitrosodiphenylamine	ND		0.20	0.11	ug/L		03/28/23 05:48	03/31/23 15:41	1
Pentachlorophenol	ND		1.0	0.84	ug/L		03/28/23 05:48	03/31/23 15:41	1
Phenanthrene	ND		0.20	0.16	ug/L		03/28/23 05:48	03/31/23 15:41	1
Phenol	ND		1.0	0.52	ug/L		03/28/23 05:48	03/31/23 15:41	1
Pyrene	ND		0.20	0.086	ug/L		03/28/23 05:48	03/31/23 15:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,3-zrif roB ophenol	*/ 8*		*2/ - 12T*	*960 2/ 026 987 4/*	*960 61026 1874 1*	*1*
2-Fluorof iphenyl (Surr)	*33*		*61 - 129*	*960 2/ 026 987 4/*	*960 61026 1874 1*	*1*
2-Fluorophenol	*61*		*1T - 129*	*960 2/ 026 987 4/*	*960 61026 1874 1*	*1*
Nitrof enbene-d8	*T6*		*2T - 129*	*960 2/ 026 987 4/*	*960 61026 1874 1*	*1*
Phenol-d3 (Surr)	*21*		*19 - 129*	*960 2/ 026 987 4/*	*960 61026 1874 1*	*1*
p-zerphenyl-d14 (Surr)	*/ 8*		*48 - 129*	*960 2/ 026 987 4/*	*960 61026 1874 1*	*1*

Lab Sample ID: LCS 570-31522v/2-N
Matri9: x ater
NnalTsis Batch: 316467

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N
Wrep Batch: 31522v

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
1,2,4-Trichlorobenzene	20.0	7.83	LR	ug/L		39	57 - 130
1,2-Dichlorobenzene	20.0	8.70		ug/L		44	40 - 120
1,2-Diphenylhydrazine(as Azobenzene)	20.0	13.2		ug/L		66	60 - 115
1,3-Dichlorobenzene	20.0	8.20		ug/L		41	37 - 120
1,4-Dichlorobenzene	20.0	8.71		ug/L		44	39 - 120
2,4,6-Trichlorophenol	20.0	12.5		ug/L		63	52 - 129

Method: 625.1 SIM - Semi8olatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-31522v/2-N
Matri9: x ater
NnalTsis Batch: 316467

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N
Wrep Batch: 31522v

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
2,4-Dichlorophenol	20.0	10.4	LR	ug/L		52	53 - 122
2,4-Dimethylphenol	20.0	10.2		ug/L		51	42 - 120
2,4-Dinitrophenol	20.0	7.50		ug/L		38	1 - 173
2,4-Dinitrotoluene	20.0	16.9		ug/L		85	48 - 127
2,6-Dinitrotoluene	20.0	15.6		ug/L		78	68 - 137
2-Chloronaphthalene	20.0	10.5	LR	ug/L		53	65 - 120
2-Chlorophenol	20.0	10.2		ug/L		51	36 - 120
2-Nitrophenol	20.0	10.9		ug/L		55	45 - 167
3,3'-Dichlorobenzidine	20.0	18.1		ug/L		90	8 - 213
4,6-Dinitro-2-methylphenol	20.0	16.0		ug/L		80	53 - 130
4-Bromophenyl phenyl ether	20.0	13.2		ug/L		66	65 - 120
4-Chloro-3-methylphenol	20.0	11.3		ug/L		57	41 - 128
4-Chlorophenyl phenyl ether	20.0	12.4		ug/L		62	38 - 145
4-Nitrophenol	20.0	6.88		ug/L		34	13 - 129
Acenaphthene	20.0	11.6	LR	ug/L		58	60 - 132
Acenaphthylene	20.0	14.0		ug/L		70	54 - 126
Anthracene	20.0	16.8		ug/L		84	43 - 120
Benzidine	20.0	4.10	J,DX	ug/L		21	20 - 164
Benzo[a]anthracene	20.0	17.7		ug/L		89	42 - 133
Benzo[a]pyrene	20.0	18.9		ug/L		95	32 - 148
Benzo[b]fluoranthene	20.0	18.2		ug/L		91	42 - 140
Benzo[g,h,i]perylene	20.0	19.5		ug/L		97	1 - 195
Benzo[k]fluoranthene	20.0	19.6		ug/L		98	25 - 146
bis (2-chloroisopropyl) ether	20.0	11.1	LR	ug/L		55	63 - 139
Bis(2-chloroethoxy)methane	20.0	9.52	LR	ug/L		48	49 - 165
Bis(2-chloroethyl)ether	20.0	10.4		ug/L		52	43 - 126
Bis(2-ethylhexyl) phthalate	20.0	20.0		ug/L		100	29 - 137
Butyl benzyl phthalate	20.0	18.6		ug/L		93	1 - 140
Chrysene	20.0	17.4		ug/L		87	44 - 140
Dibenz(a,h)anthracene	20.0	18.0		ug/L		90	1 - 200
Diethyl phthalate	20.0	15.5		ug/L		77	1 - 120
Dimethyl phthalate	20.0	14.5		ug/L		72	1 - 120
Di-n-butyl phthalate	20.0	17.9		ug/L		90	8 - 120
Di-n-octyl phthalate	20.0	21.4		ug/L		107	19 - 132
Fluoranthene	20.0	17.2		ug/L		86	43 - 121
Fluorene	20.0	12.9	LR	ug/L		65	70 - 120
Hexachlorobenzene	20.0	13.9		ug/L		69	8 - 142
Hexachlorobutadiene	20.0	7.56		ug/L		38	38 - 120
Hexachlorocyclopentadiene	20.0	10.6		ug/L		53	43 - 145
Hexachloroethane	20.0	7.97	LR	ug/L		40	55 - 120
Indeno[1,2,3-cd]pyrene	20.0	17.9		ug/L		89	1 - 151
Isophorone	20.0	10.5		ug/L		53	47 - 180
Naphthalene	20.0	8.68		ug/L		43	36 - 120
Nitrobenzene	20.0	9.50	LR	ug/L		47	54 - 158
N-Nitrosodimethylamine	20.0	7.22		ug/L		36	20 - 120
N-Nitrosodi-n-propylamine	20.0	11.9		ug/L		59	14 - 198
N-Nitrosodiphenylamine	20.0	16.9		ug/L		84	65 - 133
Pentachlorophenol	20.0	10.8		ug/L		54	38 - 152
Phenanthrene	20.0	15.2		ug/L		76	65 - 120

Method: 625.1 SIM - Semi8olatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCS 570-31522v/2-N
Matri9: x ater
NnalTsis Batch: 316467

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N
Wrep Batch: 31522v

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Phenol	20.0	4.52		ug/L		23	17 - 120
Pyrene	20.0	16.2		ug/L		81	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,3-zrif roB ophenol	*/ 6*		*2/ - 12T*
2-Fluorof iphenyl (Surr)	*84*		*61 - 129*
2-Fluorophenol	*68*		*1T - 129*
Nitrof enbene-d8	*82*		*2T - 129*
Phenol-d3 (Surr)	*24*		*19 - 129*
p-zerphenyl-d14 (Surr)	*/ 3*		*48 - 129*

Lab Sample ID: LCSD 570-31522v/3-N
Matri9: x ater
NnalTsis Batch: 316467

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N
Wrep Batch: 31522v

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
1,2,4-Trichlorobenzene	20.0	9.31	LR	ug/L		47	57 - 130	17	30
1,2-Dichlorobenzene	20.0	10.2		ug/L		51	40 - 120	15	20
1,2-Diphenylhydrazine(as Azobenzene)	20.0	14.8		ug/L		74	60 - 115	11	30
1,3-Dichlorobenzene	20.0	9.45		ug/L		47	37 - 120	14	20
1,4-Dichlorobenzene	20.0	9.90		ug/L		49	39 - 120	13	20
2,4,6-Trichlorophenol	20.0	14.6		ug/L		73	52 - 129	15	35
2,4-Dichlorophenol	20.0	12.9		ug/L		64	53 - 122	21	30
2,4-Dimethylphenol	20.0	12.7		ug/L		64	42 - 120	22	35
2,4-Dinitrophenol	20.0	11.3		ug/L		56	1 - 173	40	79
2,4-Dinitrotoluene	20.0	18.3		ug/L		92	48 - 127	8	25
2,6-Dinitrotoluene	20.0	17.8		ug/L		89	68 - 137	14	29
2-Chloronaphthalene	20.0	12.4	LR BA	ug/L		62	65 - 120	16	15
2-Chlorophenol	20.0	12.4		ug/L		62	36 - 120	20	37
2-Nitrophenol	20.0	13.4		ug/L		67	45 - 167	20	33
3,3'-Dichlorobenzidine	20.0	19.3		ug/L		97	8 - 213	7	65
4,6-Dinitro-2-methylphenol	20.0	18.1		ug/L		91	53 - 130	13	122
4-Bromophenyl phenyl ether	20.0	15.1		ug/L		75	65 - 120	13	26
4-Chloro-3-methylphenol	20.0	13.9		ug/L		70	41 - 128	21	44
4-Chlorophenyl phenyl ether	20.0	14.4		ug/L		72	38 - 145	15	36
4-Nitrophenol	20.0	7.91		ug/L		40	13 - 129	14	79
Acenaphthene	20.0	13.6		ug/L		68	60 - 132	16	29
Acenaphthylene	20.0	16.3		ug/L		82	54 - 126	16	45
Anthracene	20.0	18.0		ug/L		90	43 - 120	7	40
Benzidine	20.0	3.82	J,DX LR	ug/L		19	20 - 164	7	30
Benzo[a]anthracene	20.0	18.7		ug/L		93	42 - 133	5	32
Benzo[a]pyrene	20.0	19.7		ug/L		98	32 - 148	4	43
Benzo[b]fluoranthene	20.0	18.7		ug/L		94	42 - 140	3	43
Benzo[g,h,i]perylene	20.0	20.5		ug/L		103	1 - 195	5	61
Benzo[k]fluoranthene	20.0	21.0		ug/L		105	25 - 146	7	38
bis (2-chloroisopropyl) ether	20.0	12.7		ug/L		64	63 - 139	14	46
Bis(2-chloroethoxy)methane	20.0	11.5		ug/L		57	49 - 165	19	32
Bis(2-chloroethyl)ether	20.0	12.5		ug/L		63	43 - 126	19	65

Method: 625.1 SIM - Semi8olatile Organic Compounds GC/MS (SIM) (Continued)

Lab Sample ID: LCSD 570-31522v/3-N
Matri9: x ater
NnalTsis Batch: 316467

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N
Wrep Batch: 31522v

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Bis(2-ethylhexyl) phthalate	20.0	20.5		ug/L		102	29 - 137	2	50
Butyl benzyl phthalate	20.0	19.4		ug/L		97	1 - 140	4	36
Chrysene	20.0	18.5		ug/L		92	44 - 140	6	53
Dibenz(a,h)anthracene	20.0	18.8		ug/L		94	1 - 200	4	75
Diethyl phthalate	20.0	17.2		ug/L		86	1 - 120	10	60
Dimethyl phthalate	20.0	16.1		ug/L		81	1 - 120	11	110
Di-n-butyl phthalate	20.0	19.1		ug/L		95	8 - 120	6	28
Di-n-octyl phthalate	20.0	22.0		ug/L		110	19 - 132	3	42
Fluoranthene	20.0	18.6		ug/L		93	43 - 121	8	40
Fluorene	20.0	15.2		ug/L		76	70 - 120	16	23
Hexachlorobenzene	20.0	14.8		ug/L		74	8 - 142	6	33
Hexachlorobutadiene	20.0	8.86		ug/L		44	38 - 120	16	38
Hexachlorocyclopentadiene	20.0	13.2		ug/L		66	43 - 145	22	22
Hexachloroethane	20.0	9.36	LR	ug/L		47	55 - 120	16	32
Indeno[1,2,3-cd]pyrene	20.0	18.6		ug/L		93	1 - 151	4	60
Isophorone	20.0	12.8		ug/L		64	47 - 180	20	56
Naphthalene	20.0	10.0		ug/L		50	36 - 120	14	39
Nitrobenzene	20.0	11.8		ug/L		59	54 - 158	22	37
N-Nitrosodimethylamine	20.0	8.65		ug/L		43	20 - 120	18	21
N-Nitrosodi-n-propylamine	20.0	13.9		ug/L		69	14 - 198	16	52
N-Nitrosodiphenylamine	20.0	18.4		ug/L		92	65 - 133	8	20
Pentachlorophenol	20.0	11.7		ug/L		59	38 - 152	9	52
Phenanthrene	20.0	16.2		ug/L		81	65 - 120	6	24
Phenol	20.0	5.58		ug/L		28	17 - 120	21	39
Pyrene	20.0	17.4		ug/L		87	70 - 120	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,3-zrif roB ophenol	*: 1*		*2/ - 12T*
2-Fluorof iphenyl (Surr)	*33*		*61 - 129*
2-Fluorophenol	*41*		*1T - 129*
Nitrof enbene-d8	*36*		*2T - 129*
Phenol-d3 (Surr)	*69*		*19 - 129*
p-zerphenyl-d14 (Surr)	*: 1*		*48 - 129*

Method: %015B - Gasoline Range Organics - (GC)

Lab Sample ID: MB 570-316065/v
Matri9: x ater
NnalTsis Batch: 316065

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
GRO (C4-C12)	ND		50	30	ug/L			03/30/23 19:21	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-5roB orhuorof enbene (Surr)	*33*		*29 - 144*		*960690260 1: 721*	*1*

Method: %015B - Gasoline Range Organics - (GC) (Continued)

Lab Sample ID: LCS 570-316065/7
Matri9: x ater
NnalTsis Batch: 316065

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte			Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits		
Gasoline Range Organics (C4-C13)			1920	2130		ug/L		111	71 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-5roB orhuorof enbene (Surr)	*T3*		*29 - 144*

Lab Sample ID: LCSD 570-316065/%
Matri9: x ater
NnalTsis Batch: 316065

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Gasoline Range Organics (C4-C13)			1920	2180		ug/L		113	71 - 120	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-5roB orhuorof enbene (Surr)	*T:*		*29 - 144*

Lab Sample ID: 570-132337-1 MS
Matri9: x ater
NnalTsis Batch: 316065

Client Sample ID: , WBBCH20230322
Wrep PTpe: Potal/y N

NnalTte	Sample Result	Sample QualiUer	Spike Ndded	MS Result	MS QualiUer	z nit	D	f Rec	f Rec Limits		
Gasoline Range Organics (C4-C13)	ND		1920	2000		ug/L		104	54 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-5roB orhuorof enbene (Surr)	*TT*		*29 - 144*

Lab Sample ID: 570-132337-1 MSD
Matri9: x ater
NnalTsis Batch: 316065

Client Sample ID: , WBBCH20230322
Wrep PTpe: Potal/y N

NnalTte	Sample Result	Sample QualiUer	Spike Ndded	MSD Result	MSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Gasoline Range Organics (C4-C13)	ND		1920	1900		ug/L		99	54 - 125	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-5roB orhuorof enbene (Surr)	*3:*		*29 - 144*

Method: %015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-315v47/1-N
Matri9: x ater
NnalTsis Batch: 316730

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N
Wrep Batch: 315v47

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
C13-C28	ND		0.050	0.036	mg/L		03/29/23 21:24	04/01/23 12:16	1

Method: %015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: MB 570-315v47/1-N
Matri9: x ater
NnalTsis Batch: 316730

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N
Wrep Batch: 315v47

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane (Surr)	192		86 - 181	9602: 026 21724	9409102 6 12713	1

Lab Sample ID: LCS 570-315v47/2-N
Matri9: x ater
NnalTsis Batch: 316730

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N
Wrep Batch: 315v47

NnalTte			Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits		
C10-C28			4.00	3.85		mg/L		96	65 - 129		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
n-Octacosane (Surr)	: :		86 - 181

Lab Sample ID: LCSD 570-315v47/3-N
Matri9: x ater
NnalTsis Batch: 316730

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N
Wrep Batch: 315v47

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
C10-C28			4.00	4.19		mg/L		105	65 - 129	8	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
n-Octacosane (Surr)	198		86 - 181

Method: 21%6 - ChromiumEKe9a8alent (Ion ChromatographT)

Lab Sample ID: MB 570-314343/4
Matri9: x ater
NnalTsis Batch: 314343

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/24/23 01:54	1

Lab Sample ID: LCS 570-314343/5
Matri9: x ater
NnalTsis Batch: 314343

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte			Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits		
Hexavalent chromium			50.1	50.3		ug/L		100	95 - 107		

Lab Sample ID: LCSD 570-314343/6
Matri9: x ater
NnalTsis Batch: 314343

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Hexavalent chromium			50.1	49.5		ug/L		99	95 - 107	1	20

Method: 21%6 - ChromiumEKe9a8alent (Ion ChromatographT) (Continued)

Lab Sample ID: MRL 570-314343/3
Matri9: x ater
NnalTsis Batch: 314343

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	MRL Result	MRL QualiUer	z nit	D	f Rec	f Rec Limits
Hexavalent chromium	0.200	0.192	J,DX	ug/L		96	50 - 150

Lab Sample ID: MB 570-31434%1-N
Matri9: x ater
NnalTsis Batch: 314343

Client Sample ID: Method Blank
Wrep PTpe: Dissol8ed

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Hexavalent chromium	ND		0.20	0.019	ug/L			03/24/23 07:17	1

Lab Sample ID: LCS 570-31434%2-N
Matri9: x ater
NnalTsis Batch: 314343

Client Sample ID: Lab Control Sample
Wrep PTpe: Dissol8ed

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Hexavalent chromium	50.1	50.5		ug/L		101	95 - 107

Lab Sample ID: LCSD 570-31434%3-N
Matri9: x ater
NnalTsis Batch: 314343

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Dissol8ed

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Hexavalent chromium	50.1	50.3		ug/L		100	95 - 107	1	20

Method: 300.0 - NnionsElon ChromatographT

Lab Sample ID: MB 570-314324/5
Matri9: x ater
NnalTsis Batch: 314324

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Chloride	ND		1.0	0.36	mg/L			03/23/23 21:57	1
Fluoride	ND		0.10	0.046	mg/L			03/23/23 21:57	1
Sulfate	ND		1.0	0.24	mg/L			03/23/23 21:57	1

Lab Sample ID: LCS 570-314324/6
Matri9: x ater
NnalTsis Batch: 314324

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Chloride	50.0	51.8		mg/L		104	90 - 110
Fluoride	2.50	2.61		mg/L		105	90 - 110
Sulfate	50.0	50.5		mg/L		101	90 - 110

Lab Sample ID: LCSD 570-314324/7
Matri9: x ater
NnalTsis Batch: 314324

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Chloride	50.0	51.9		mg/L		104	90 - 110	0	15
Fluoride	2.50	2.60		mg/L		104	90 - 110	0	15

Method: 300.0 - NnionsElon ChromatographT (Continued)

Lab Sample ID: LCSD 570-314324/7
Matri9: x ater
NnalTsis Batch: 314324

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Sulfate			50.0	50.7		mg/L		101	90 - 110	0	15

Lab Sample ID: 570-132337-1 MS
Matri9: x ater
NnalTsis Batch: 314324

Client Sample ID: , WBBCH20230322
Wrep PTpe: Potal/y N

NnalTte	Sample Result	Sample QualiUer	Spike Ndded	MS Result	MS QualiUer	z nit	D	f Rec	f Rec Limits		
Chloride	51		50.0	105		mg/L		108	80 - 120		
Fluoride	0.28		2.50	2.77		mg/L		100	80 - 120		

Lab Sample ID: 570-132337-1 MSD
Matri9: x ater
NnalTsis Batch: 314324

Client Sample ID: , WBBCH20230322
Wrep PTpe: Potal/y N

NnalTte	Sample Result	Sample QualiUer	Spike Ndded	MSD Result	MSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Chloride	51		50.0	105		mg/L		109	80 - 120	0	20
Fluoride	0.28		2.50	2.87		mg/L		104	80 - 120	3	20

Lab Sample ID: MB 570-314325/5
Matri9: x ater
NnalTsis Batch: 314325

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Nitrite as N	ND		0.10	0.043	mg/L			03/23/23 21:57	1
Nitrate as N	ND		0.10	0.020	mg/L			03/23/23 21:57	1

Lab Sample ID: LCS 570-314325/6
Matri9: x ater
NnalTsis Batch: 314325

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte			Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits		
Nitrite as N			2.50	2.48		mg/L		99	90 - 110		
Nitrate as N			5.00	5.19		mg/L		104	90 - 110		

Lab Sample ID: LCSD 570-314325/7
Matri9: x ater
NnalTsis Batch: 314325

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Nitrite as N			2.50	2.49		mg/L		100	90 - 110	0	15
Nitrate as N			5.00	5.19		mg/L		104	90 - 110	0	15

Lab Sample ID: 570-132337-1 MS
Matri9: x ater
NnalTsis Batch: 314325

Client Sample ID: , WBBCH20230322
Wrep PTpe: Potal/y N

NnalTte	Sample Result	Sample QualiUer	Spike Ndded	MS Result	MS QualiUer	z nit	D	f Rec	f Rec Limits		
Nitrite as N	ND		2.50	2.84		mg/L		114	80 - 120		
Nitrate as N	1.5		5.00	6.42		mg/L		98	80 - 120		

Method: 300.0 - NnionsElon ChromatographT (Continued)

Lab Sample ID: 570-132337-1 MSD
Matri9: x ater
NnalTsis Batch: 314325

Client Sample ID: , WBBCH20230322
Wrep PTpe: Potal/y N

NnalTte	Sample Result	Sample QualiUer	Spike Ndded	MSD Result	MSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Nitrite as N	ND		2.50	2.86		mg/L		114	80 - 120	1	20
Nitrate as N	1.5		5.00	6.45		mg/L		99	80 - 120	1	20

Method: 300.0 - NnionsElon ChromatographT - DL

Lab Sample ID: 570-132337-1 MS
Matri9: x ater
NnalTsis Batch: 314324

Client Sample ID: , WBBCH20230322
Wrep PTpe: Potal/y N

NnalTte	Sample Result	Sample QualiUer	Spike Ndded	MS Result	MS QualiUer	z nit	D	f Rec	f Rec Limits
Sulfate - DL	130		50.0	178		mg/L		96	80 - 120

Lab Sample ID: 570-132337-1 MSD
Matri9: x ater
NnalTsis Batch: 314324

Client Sample ID: , WBBCH20230322
Wrep PTpe: Potal/y N

NnalTte	Sample Result	Sample QualiUer	Spike Ndded	MSD Result	MSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Sulfate - DL	130		50.0	176		mg/L		92	80 - 120	1	20

Method: 314.0 - Werchlorate (IC)

Lab Sample ID: MB 570-31445%7
Matri9: x ater
NnalTsis Batch: 31445%

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Perchlorate	ND		2.0	0.91	ug/L			03/24/23 12:33	1

Lab Sample ID: LCS 570-31445%%
Matri9: x ater
NnalTsis Batch: 31445%

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Perchlorate	25.0	24.5		ug/L		98	85 - 115

Lab Sample ID: LCSD 570-31445%v
Matri9: x ater
NnalTsis Batch: 31445%

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Perchlorate	25.0	24.4		ug/L		98	85 - 115	0	15

Method: 200.7 Re8 4.4 - Metals (ICW)

Lab Sample ID: MB 570-314%v1/1-N
Matri9: x ater
NnalTsis Batch: 315463

Client Sample ID: Method Blank
Wrep PTpe: Potal Reco8erable
Wrep Batch: 314%v1

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Boron	ND		0.50	0.0035	mg/L		03/27/23 08:29	03/28/23 11:44	1

Method: 200.7 Re8 4.4 - Metals (ICW) (Continued)

Lab Sample ID: LCS 570-314%v1/2-N
Matri9: x ater
NnalTsis Batch: 315463

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal Reco8erable
Wrep Batch: 314%v1

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Boron	0.500	0.481	J,DX	mg/L		96	85 - 115

Lab Sample ID: LCSD 570-314%v1/3-N
Matri9: x ater
NnalTsis Batch: 315463

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal Reco8erable
Wrep Batch: 314%v1

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Boron	0.500	0.486	J,DX	mg/L		97	85 - 115	1	20

Lab Sample ID: MB 570-314531/1-N
Matri9: x ater
NnalTsis Batch: 315160

Client Sample ID: Method Blank
Wrep PTpe: Dissol8ed

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Boron	ND		0.50	0.0035	mg/L			03/27/23 18:01	1

Lab Sample ID: LCS 570-314531/2-N
Matri9: x ater
NnalTsis Batch: 315160

Client Sample ID: Lab Control Sample
Wrep PTpe: Dissol8ed

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Boron	0.500	0.453	J,DX	mg/L		91	85 - 115

Lab Sample ID: LCSD 570-314531/3-N
Matri9: x ater
NnalTsis Batch: 315160

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Dissol8ed

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Boron	0.500	0.465	J,DX	mg/L		93	85 - 115	3	20

Method: 200.%- Metals (ICWMS)

Lab Sample ID: MB 570-314v24/1-N
Matri9: x ater
NnalTsis Batch: 315053

Client Sample ID: Method Blank
Wrep PTpe: Potal Reco8erable
Wrep Batch: 314v24

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Aluminum	ND		15	8.6	ug/L		03/27/23 08:51	03/27/23 12:53	1
Silver	ND		1.0	0.23	ug/L		03/27/23 08:51	03/27/23 12:53	1
Arsenic	ND		1.0	0.16	ug/L		03/27/23 08:51	03/27/23 12:53	1
Barium	ND		1.0	0.17	ug/L		03/27/23 08:51	03/27/23 12:53	1
Beryllium	ND	IB	0.50	0.26	ug/L		03/27/23 08:51	03/27/23 12:53	1
Cadmium	ND		1.0	0.13	ug/L		03/27/23 08:51	03/27/23 12:53	1
Chromium	ND		2.0	0.14	ug/L		03/27/23 08:51	03/27/23 12:53	1
Cobalt	ND		1.0	0.14	ug/L		03/27/23 08:51	03/27/23 12:53	1
Copper	ND		2.0	0.32	ug/L		03/27/23 08:51	03/27/23 12:53	1
Iron	ND		20	3.7	ug/L		03/27/23 08:51	03/27/23 12:53	1
Manganese	1.77		1.0	0.41	ug/L		03/27/23 08:51	03/27/23 12:53	1
Nickel	ND		2.0	0.17	ug/L		03/27/23 08:51	03/27/23 12:53	1
Lead	ND		1.0	0.12	ug/L		03/27/23 08:51	03/27/23 12:53	1

Method: 200.%- Metals (ICWMS) (Continued)

Lab Sample ID: MB 570-314v24/1-N
Matri9: x ater
NnalTsis Batch: 315053

Client Sample ID: Method Blank
Wrep PTpe: Potal Reco8erable
Wrep Batch: 314v24

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Antimony	ND		2.0	0.36	ug/L		03/27/23 08:51	03/27/23 12:53	1
Zinc	ND		20	2.8	ug/L		03/27/23 08:51	03/27/23 12:53	1
Selenium	ND		2.0	0.52	ug/L		03/27/23 08:51	03/27/23 12:53	1
Thallium	ND		1.0	0.11	ug/L		03/27/23 08:51	03/27/23 12:53	1

Lab Sample ID: LCS 570-314v24/2-N
Matri9: x ater
NnalTsis Batch: 315053

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal Reco8erable
Wrep Batch: 314v24

NnalTte			Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits		
Aluminum			80.0	75.0		ug/L		94	85 - 115		
Silver			80.0	78.4		ug/L		98	85 - 115		
Arsenic			80.0	78.1		ug/L		98	85 - 115		
Barium			80.0	77.0		ug/L		96	85 - 115		
Beryllium			80.0	75.3	IB	ug/L		94	85 - 115		
Cadmium			80.0	77.4		ug/L		97	85 - 115		
Chromium			80.0	77.5		ug/L		97	85 - 115		
Cobalt			80.0	76.3		ug/L		95	85 - 115		
Copper			80.0	73.1		ug/L		91	85 - 115		
Iron			800	777		ug/L		97	85 - 115		
Manganese			80.0	80.7		ug/L		101	85 - 115		
Nickel			80.0	76.7		ug/L		96	85 - 115		
Lead			80.0	78.2		ug/L		98	85 - 115		
Antimony			80.0	74.9		ug/L		94	85 - 115		
Zinc			80.0	76.7		ug/L		96	85 - 115		
Selenium			80.0	79.2		ug/L		99	85 - 115		
Thallium			80.0	74.8		ug/L		94	85 - 115		

Lab Sample ID: LCSD 570-314v24/3-N
Matri9: x ater
NnalTsis Batch: 315053

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal Reco8erable
Wrep Batch: 314v24

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Aluminum			80.0	75.3		ug/L		94	85 - 115	0	20
Silver			80.0	77.1		ug/L		96	85 - 115	2	20
Arsenic			80.0	77.6		ug/L		97	85 - 115	1	20
Barium			80.0	76.1		ug/L		95	85 - 115	1	20
Beryllium			80.0	75.4	IB	ug/L		94	85 - 115	0	20
Cadmium			80.0	76.6		ug/L		96	85 - 115	1	20
Chromium			80.0	76.7		ug/L		96	85 - 115	1	20
Cobalt			80.0	75.8		ug/L		95	85 - 115	1	20
Copper			80.0	72.2		ug/L		90	85 - 115	1	20
Iron			800	780		ug/L		98	85 - 115	0	20
Manganese			80.0	82.6		ug/L		103	85 - 115	2	20
Nickel			80.0	76.3		ug/L		95	85 - 115	1	20
Lead			80.0	78.6		ug/L		98	85 - 115	0	20
Antimony			80.0	74.9		ug/L		94	85 - 115	0	20
Zinc			80.0	76.1		ug/L		95	85 - 115	1	20
Selenium			80.0	77.4		ug/L		97	85 - 115	2	20

Method: 200.%- Metals (ICWMS) (Continued)

Lab Sample ID: LCSD 570-314v24/3-N
Matri9: x ater
NnalTsis Batch: 315053

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal Reco8erable
Wrep Batch: 314v24

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Thallium			80.0	75.6		ug/L		94	85 - 115	1	20

Lab Sample ID: 570-132337-1 MS
Matri9: x ater
NnalTsis Batch: 315053

Client Sample ID: , WBBCH20230322
Wrep PTpe: Potal Reco8erable
Wrep Batch: 314v24

NnalTte	Sample Result	Sample QualiUer	Spike Ndded	MS Result	MS QualiUer	z nit	D	f Rec	f Rec Limits
Aluminum	1200		80.0	1650	BB	ug/L		566	80 - 120
Silver	ND		80.0	79.5		ug/L		99	80 - 120
Arsenic	2.4		80.0	81.7		ug/L		99	80 - 120
Barium	62		80.0	144		ug/L		103	80 - 120
Beryllium	ND	IB	80.0	80.3	IB	ug/L		100	80 - 120
Cadmium	ND		80.0	78.9		ug/L		99	80 - 120
Chromium	2.5		80.0	81.0		ug/L		98	80 - 120
Cobalt	1.2		80.0	78.9		ug/L		97	80 - 120
Copper	3.8		80.0	78.3		ug/L		93	80 - 120
Iron	2000		800	2930		ug/L		117	80 - 120
Manganese	79	MB	80.0	160		ug/L		101	80 - 120
Nickel	3.7		80.0	80.8		ug/L		96	80 - 120
Lead	2.4		80.0	82.1		ug/L		100	80 - 120
Antimony	0.82	J,DX	80.0	82.0		ug/L		102	80 - 120
Zinc	13	J,DX	80.0	88.3		ug/L		94	80 - 120
Selenium	1.0	J,DX	80.0	77.4		ug/L		95	80 - 120
Thallium	ND		80.0	76.8		ug/L		96	80 - 120

Lab Sample ID: 570-132337-1 MSD
Matri9: x ater
NnalTsis Batch: 315053

Client Sample ID: , WBBCH20230322
Wrep PTpe: Potal Reco8erable
Wrep Batch: 314v24

NnalTte	Sample Result	Sample QualiUer	Spike Ndded	MSD Result	MSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Aluminum	1200		80.0	1570	BB	ug/L		466	80 - 120	5	20
Silver	ND		80.0	78.0		ug/L		97	80 - 120	2	20
Arsenic	2.4		80.0	80.3		ug/L		97	80 - 120	2	20
Barium	62		80.0	142		ug/L		100	80 - 120	1	20
Beryllium	ND	IB	80.0	79.7	IB	ug/L		100	80 - 120	1	20
Cadmium	ND		80.0	77.7		ug/L		97	80 - 120	2	20
Chromium	2.5		80.0	79.7		ug/L		96	80 - 120	2	20
Cobalt	1.2		80.0	77.8		ug/L		96	80 - 120	1	20
Copper	3.8		80.0	76.8		ug/L		91	80 - 120	2	20
Iron	2000		800	2830		ug/L		103	80 - 120	4	20
Manganese	79	MB	80.0	158		ug/L		98	80 - 120	2	20
Nickel	3.7		80.0	79.2		ug/L		94	80 - 120	2	20
Lead	2.4		80.0	81.2		ug/L		98	80 - 120	1	20
Antimony	0.82	J,DX	80.0	79.7		ug/L		99	80 - 120	3	20
Zinc	13	J,DX	80.0	86.8		ug/L		92	80 - 120	2	20
Selenium	1.0	J,DX	80.0	75.6		ug/L		93	80 - 120	2	20
Thallium	ND		80.0	76.0		ug/L		95	80 - 120	1	20

Method: 200.%- Metals (ICWMS) (Continued)

Lab Sample ID: MB 570-31452%1-N
Matri9: x ater
NnalTsis Batch: 314v%%

Client Sample ID: Method Blank
Wrep PTpe: Dissol8ed

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Aluminum	ND		15	8.6	ug/L			03/27/23 10:22	1
Silver	ND		1.0	0.23	ug/L			03/27/23 10:22	1
Arsenic	ND		1.0	0.16	ug/L			03/27/23 10:22	1
Barium	ND		1.0	0.17	ug/L			03/27/23 10:22	1
Beryllium	ND	IB	0.50	0.26	ug/L			03/27/23 10:22	1
Cadmium	ND		1.0	0.13	ug/L			03/27/23 10:22	1
Chromium	ND		2.0	0.14	ug/L			03/27/23 10:22	1
Cobalt	ND		1.0	0.14	ug/L			03/27/23 10:22	1
Copper	ND		2.0	0.32	ug/L			03/27/23 10:22	1
Iron	ND		20	3.7	ug/L			03/27/23 10:22	1
Manganese	ND		1.0	0.41	ug/L			03/27/23 10:22	1
Nickel	ND		2.0	0.17	ug/L			03/27/23 10:22	1
Lead	ND		1.0	0.12	ug/L			03/27/23 10:22	1
Antimony	ND		2.0	0.36	ug/L			03/27/23 10:22	1
Zinc	ND		20	2.8	ug/L			03/27/23 10:22	1
Selenium	ND		2.0	0.52	ug/L			03/27/23 10:22	1
Thallium	ND		1.0	0.11	ug/L			03/27/23 10:22	1

Lab Sample ID: LCS 570-31452%2-N
Matri9: x ater
NnalTsis Batch: 314v%%

Client Sample ID: Lab Control Sample
Wrep PTpe: Dissol8ed

NnalTte			Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits		
Aluminum			80.0	81.2		ug/L		101	85 - 115		
Silver			80.0	81.2		ug/L		102	85 - 115		
Arsenic			80.0	79.1		ug/L		99	85 - 115		
Barium			80.0	79.6		ug/L		99	85 - 115		
Beryllium			80.0	91.9	IB	ug/L		115	85 - 115		
Cadmium			80.0	79.4		ug/L		99	85 - 115		
Chromium			80.0	80.8		ug/L		101	85 - 115		
Cobalt			80.0	79.8		ug/L		100	85 - 115		
Copper			80.0	79.5		ug/L		99	85 - 115		
Iron			800	814		ug/L		102	85 - 115		
Manganese			80.0	81.7		ug/L		102	85 - 115		
Nickel			80.0	80.6		ug/L		101	85 - 115		
Lead			80.0	82.0		ug/L		103	85 - 115		
Antimony			80.0	76.4		ug/L		95	85 - 115		
Zinc			80.0	78.2		ug/L		98	85 - 115		
Selenium			80.0	78.0		ug/L		97	85 - 115		
Thallium			80.0	80.7		ug/L		101	85 - 115		

Lab Sample ID: LCSD 570-31452%3-N
Matri9: x ater
NnalTsis Batch: 314v%%

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Dissol8ed

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Aluminum			80.0	85.8		ug/L		107	85 - 115	6	20
Silver			80.0	82.9		ug/L		104	85 - 115	2	20
Arsenic			80.0	79.5		ug/L		99	85 - 115	1	20

Method: 200.%- Metals (ICWMS) (Continued)

Lab Sample ID: LCSD 570-31452%3-N
Matri9: x ater
NnalTsis Batch: 314v%%

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Dissol8ed

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Barium			80.0	81.9		ug/L		102	85 - 115	3	20
Beryllium			80.0	93.8	IB LQ	ug/L		117	85 - 115	2	20
Cadmium			80.0	81.5		ug/L		102	85 - 115	3	20
Chromium			80.0	82.1		ug/L		103	85 - 115	2	20
Cobalt			80.0	82.1		ug/L		103	85 - 115	3	20
Copper			80.0	81.2		ug/L		101	85 - 115	2	20
Iron			800	832		ug/L		104	85 - 115	2	20
Manganese			80.0	83.6		ug/L		105	85 - 115	2	20
Nickel			80.0	82.1		ug/L		103	85 - 115	2	20
Lead			80.0	84.2		ug/L		105	85 - 115	3	20
Antimony			80.0	79.5		ug/L		99	85 - 115	4	20
Zinc			80.0	79.9		ug/L		100	85 - 115	2	20
Selenium			80.0	75.9		ug/L		95	85 - 115	3	20
Thallium			80.0	82.0		ug/L		103	85 - 115	2	20

Method: 1664N - K, M and SGP-K, M

Lab Sample ID: MB 570-3156%6/1-N
Matri9: x ater
NnalTsis Batch: 315%03

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N
Wrep Batch: 3156%6

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
HEM (Oil & Grease)	ND		1.0	0.51	mg/L		03/29/23 09:20	03/29/23 13:42	1

Lab Sample ID: LCS 570-3156%6/2-N
Matri9: x ater
NnalTsis Batch: 315%03

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N
Wrep Batch: 3156%6

NnalTte			Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits		
HEM (Oil & Grease)			40.0	38.4		mg/L		96	78 - 114		

Lab Sample ID: LCSD 570-3156%6/3-N
Matri9: x ater
NnalTsis Batch: 315%03

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N
Wrep Batch: 3156%6

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
HEM (Oil & Grease)			40.0	37.4		mg/L		93	78 - 114	3	18

Method: 350.1 - y itrogENmmonia

Lab Sample ID: MB 570-31730%5-N
Matri9: x ater
NnalTsis Batch: 31737%

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N
Wrep Batch: 31730%

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Ammonia	ND		0.075	0.032	mg/L		04/04/23 10:15	04/04/23 11:58	1

Method: 350.1 - y itrogenENmmonia (Continued)

Lab Sample ID: LCS 570-31730%6-N
Matri9: x ater
NnalTsis Batch: 31737%

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N
Wrep Batch: 31730%

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Ammonia	0.500	0.482		mg/L		96	90 - 110

Lab Sample ID: LCSD 570-31730%7-N
Matri9: x ater
NnalTsis Batch: 31737%

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N
Wrep Batch: 31730%

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Ammonia	0.500	0.486		mg/L		97	90 - 110	1	20

Method: _elada 01 - CTanideEPotalENcid Dissociable and PhiocTanate

Lab Sample ID: MB 570-315%71/11
Matri9: x ater
NnalTsis Batch: 315%71

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Cyanide, Total	ND		5.0	2.5	ug/L			03/29/23 13:56	1

Lab Sample ID: LCS 570-315%71/12
Matri9: x ater
NnalTsis Batch: 315%71

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Cyanide, Total	250	249		ug/L		100	90 - 110

Lab Sample ID: LCSD 570-315%71/13
Matri9: x ater
NnalTsis Batch: 315%71

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Cyanide, Total	250	249		ug/L		100	90 - 110	0	20

Lab Sample ID: MRL 570-315%71/10
Matri9: x ater
NnalTsis Batch: 315%71

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	MRL Result	MRL QualiUer	z nit	D	f Rec	f Rec Limits
Cyanide, Total	5.00	4.82	J,DX	ug/L		96	50 - 150

Method: SM 2130B - PurbiditT

Lab Sample ID: LCSSRM 570-3141v%1
Matri9: x ater
NnalTsis Batch: 3141v%

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCSSRM Result	LCSSRM QualiUer	z nit	D	f Rec	f Rec Limits
Turbidity	1000	1000		NTU		99.2	99.0 - 101.0

Method: SM 2130B - PurbiditT (Continued)

Lab Sample ID: LCSSRM 570-3141v%2
Matri9: x ater
NnalTsis Batch: 3141v%

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCSSRM Result	LCSSRM QualiUer	z nit	D	f Rec	f Rec Limits
Turbidity	10.0	10		NTU		100.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-3141v%3
Matri9: x ater
NnalTsis Batch: 3141v%

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCSSRM Result	LCSSRM QualiUer	z nit	D	f Rec	f Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2510B - Conducti8itTESpeciUc Conductance

Lab Sample ID: MB 570-316225/10
Matri9: x ater
NnalTsis Batch: 316225

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	RL	z nit	D	Wrepared	NnalTFed	Dil Aac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/30/23 11:38	1

Lab Sample ID: MB 570-316225/42
Matri9: x ater
NnalTsis Batch: 316225

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	RL	z nit	D	Wrepared	NnalTFed	Dil Aac
Specific Conductance	ND		1.0	1.0	umhos/cm			03/30/23 14:48	1

Method: SM 2540C - SolidsEPotal Dissol8ed (PDS)

Lab Sample ID: MB 570-315%01/1
Matri9: x ater
NnalTsis Batch: 315%01

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Total Dissolved Solids	ND		10	8.7	mg/L			03/29/23 13:29	1

Lab Sample ID: LCS 570-315%01/2
Matri9: x ater
NnalTsis Batch: 315%01

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Total Dissolved Solids	1000	1030		mg/L		103	84 - 108

Lab Sample ID: LCSD 570-315%01/3
Matri9: x ater
NnalTsis Batch: 315%01

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Total Dissolved Solids	1000	1020		mg/L		102	84 - 108	0	10

Method: SM 2540D - SolidsEPotal Suspended (PSS)

Lab Sample ID: MB 570-3154v5/1
Matri9: x ater
NnalTsis Batch: 3154v5

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Total Suspended Solids	ND		1.0	0.83	mg/L			03/28/23 16:47	1

Lab Sample ID: LCS 570-3154v5/2
Matri9: x ater
NnalTsis Batch: 3154v5

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Total Suspended Solids	100	97.0		mg/L		97	77 - 116

Lab Sample ID: LCSD 570-3154v5/3
Matri9: x ater
NnalTsis Batch: 3154v5

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Total Suspended Solids	100	96.0		mg/L		96	77 - 116	1	10

Method: SM 5210B - BODE5-DaT

Lab Sample ID: z SB 570-314145/1-N
Matri9: x ater
NnalTsis Batch: 3154%3

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N
Wrep Batch: 314145

NnalTte	z SB Result	z SB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Biochemical Oxygen Demand	ND		2.0	1.0	mg/L		03/23/23 11:21	03/23/23 11:26	1

Lab Sample ID: LCS 570-314145/2-N
Matri9: x ater
NnalTsis Batch: 3154%3

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N
Wrep Batch: 314145

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Biochemical Oxygen Demand	199	208		mg/L		105	84.6 - 115.4

Method: SM 5310D - Organic CarbonEPotal (POC)

Lab Sample ID: MB 570-317v%%4
Matri9: x ater
NnalTsis Batch: 317v%%

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
Carbon, Total Organic	ND		0.50	0.26	mg/L			04/06/23 02:49	1

Lab Sample ID: LCS 570-317v%%5
Matri9: x ater
NnalTsis Batch: 317v%%

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N

NnalTte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits
Carbon, Total Organic	5.03	4.86		mg/L		97	85 - 115

Method: SM 5310D - Organic CarbonEPotal (POC) (Continued)

Lab Sample ID: LCSD 570-317v%%6
Matri9: x ater
NnalTsis Batch: 317v%%

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
Carbon, Total Organic			5.03	4.94		mg/L		98	85 - 115	2	20

Method: SM 5540C - MethTlene Blue Ncti8e Substances (MBNS)

Lab Sample ID: MB 570-314207/5-N
Matri9: x ater
NnalTsis Batch: 314262

Client Sample ID: Method Blank
Wrep PTpe: Potal/y N
Wrep Batch: 314207

NnalTte	MB Result	MB QualiUer	RL	MDL	z nit	D	Wrepared	NnalTFed	Dil Aac
MBAS	ND		0.20	0.050	mg/L		03/23/23 14:20	03/23/23 15:24	1

Lab Sample ID: LCS 570-314207/6-N
Matri9: x ater
NnalTsis Batch: 314262

Client Sample ID: Lab Control Sample
Wrep PTpe: Potal/y N
Wrep Batch: 314207

NnalTte			Spike Ndded	LCS Result	LCS QualiUer	z nit	D	f Rec	f Rec Limits		
MBAS			0.500	0.527		mg/L		105	83 - 122		

Lab Sample ID: LCSD 570-314207/7-N
Matri9: x ater
NnalTsis Batch: 314262

Client Sample ID: Lab Control Sample Dup
Wrep PTpe: Potal/y N
Wrep Batch: 314207

NnalTte			Spike Ndded	LCSD Result	LCSD QualiUer	z nit	D	f Rec	f Rec Limits	RWD	RWD Limit
MBAS			0.500	0.531		mg/L		106	83 - 122	1	10

GC/MS VOA

Analysis Batch: 318233

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	624.1	
570-132337-2	TB-20230322-1	Total/NA	Water	624.1	
MB 570-314233/7	Method Blank	Total/NA	Water	624.1	
LCS 570-314233/1004	Lab Control Sample	Total/NA	Water	624.1	
LCSD 570-314233/5	Lab Control Sample Dup	Total/NA	Water	624.1	

Analysis Batch: 318d28

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	8260B SIM	
MB 570-314624/8	Method Blank	Total/NA	Water	8260B SIM	
LCS 570-314624/4	Lab Control Sample	Total/NA	Water	8260B SIM	
LCSD 570-314624/5	Lab Control Sample Dup	Total/NA	Water	8260B SIM	

GC/MS Spmi VOA

Drpb Batch: 319225

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	625	
MB 570-315229/1-A	Method Blank	Total/NA	Water	625	
LCS 570-315229/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 570-315229/3-A	Lab Control Sample Dup	Total/NA	Water	625	

Analysis Batch: 31d8d4

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	625.1 SIM	315229
MB 570-315229/1-A	Method Blank	Total/NA	Water	625.1 SIM	315229
LCS 570-315229/2-A	Lab Control Sample	Total/NA	Water	625.1 SIM	315229
LCSD 570-315229/3-A	Lab Control Sample Dup	Total/NA	Water	625.1 SIM	315229

GC VOA

Analysis Batch: 31d0d9

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	8015B	
MB 570-316065/9	Method Blank	Total/NA	Water	8015B	
LCS 570-316065/7	Lab Control Sample	Total/NA	Water	8015B	
LCSD 570-316065/8	Lab Control Sample Dup	Total/NA	Water	8015B	
570-132337-1 MS	EPBBC_20230322	Total/NA	Water	8015B	
570-132337-1 MSD	EPBBC_20230322	Total/NA	Water	8015B	

GC Spmi VOA

Drpb Batch: 319584

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	3510C	
MB 570-315947/1-A	Method Blank	Total/NA	Water	3510C	
LCS 570-315947/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 570-315947/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 31d430

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	8015B	315947

GC Spmi VOA 7ContinupxH

Analysis Batch: 31d430 7ContinupxH

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
MB 570-315947/1-A	Method Blank	Total/NA	Water	8015B	315947
LCS 570-315947/2-A	Lab Control Sample	Total/NA	Water	8015B	315947
LCSD 570-315947/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	315947

F D6C/eC

Analysis Batch: 318328

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	300.0	
570-132337-1 - DL	EPBBC_20230322	Total/NA	Water	300.0	
MB 570-314324/5	Method Blank	Total/NA	Water	300.0	
LCS 570-314324/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-314324/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-132337-1 MS	EPBBC_20230322	Total/NA	Water	300.0	
570-132337-1 MS - DL	EPBBC_20230322	Total/NA	Water	300.0	
570-132337-1 MSD	EPBBC_20230322	Total/NA	Water	300.0	
570-132337-1 MSD - DL	EPBBC_20230322	Total/NA	Water	300.0	

Analysis Batch: 318329

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	300.0	
MB 570-314325/5	Method Blank	Total/NA	Water	300.0	
LCS 570-314325/6	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-314325/7	Lab Control Sample Dup	Total/NA	Water	300.0	
570-132337-1 MS	EPBBC_20230322	Total/NA	Water	300.0	
570-132337-1 MSD	EPBBC_20230322	Total/NA	Water	300.0	

Analysis Batch: 318383

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	218.6	314348
570-132337-1	EPBBC_20230322	Total/NA	Water	218.6	
MB 570-314343/4	Method Blank	Total/NA	Water	218.6	
MB 570-314348/1-A	Method Blank	Dissolved	Water	218.6	314348
LCS 570-314343/5	Lab Control Sample	Total/NA	Water	218.6	
LCS 570-314348/2-A	Lab Control Sample	Dissolved	Water	218.6	314348
LCSD 570-314343/6	Lab Control Sample Dup	Total/NA	Water	218.6	
LCSD 570-314348/3-A	Lab Control Sample Dup	Dissolved	Water	218.6	314348
MRL 570-314343/3	Lab Control Sample	Total/NA	Water	218.6	

(iltration Batch: 31838)

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	Filtration	
MB 570-314348/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-314348/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-314348/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 31889)

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	314.0	
MB 570-314458/7	Method Blank	Total/NA	Water	314.0	
LCS 570-314458/8	Lab Control Sample	Total/NA	Water	314.0	

FD6C/dC 7ContinupxH

Analysis Batch: 31889) 7ContinupxH

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
LCSD 570-314458/9	Lab Control Sample Dup	Total/NA	Water	314.0	

Analysis Batch: 314d) 2

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	NO2NO3 Calc	

Mptals

(iltration Batch: 31892)

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	Filtration	
MB 570-314528/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-314528/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-314528/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

(iltration Batch: 318931

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	Filtration	
MB 570-314531/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-314531/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-314531/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 318d95

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	SM 2340B	

Analysis Batch: 318dd0

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total Recoverable	Water	SM 2340B	

Drpb Batch: 318) 51

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total Recoverable	Water	200.7	
MB 570-314891/1-A	Method Blank	Total Recoverable	Water	200.7	
LCS 570-314891/2-A	Lab Control Sample	Total Recoverable	Water	200.7	
LCSD 570-314891/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7	

Drpb Batch: 318528

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total Recoverable	Water	200.8	
MB 570-314924/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-314924/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-314924/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-132337-1 MS	EPBBC_20230322	Total Recoverable	Water	200.8	
570-132337-1 MSD	EPBBC_20230322	Total Recoverable	Water	200.8	

Analysis Batch: 3185))

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	200.8	314528
MB 570-314528/1-A	Method Blank	Dissolved	Water	200.8	314528
LCS 570-314528/2-A	Lab Control Sample	Dissolved	Water	200.8	314528

Mptals 7ContinupxH

Analysis Batch: 3185)) 7ContinupxH

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
LCSD 570-314528/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	314528

Analysis Batch: 319093

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total Recoverable	Water	200.8	314924
MB 570-314924/1-A	Method Blank	Total Recoverable	Water	200.8	314924
LCS 570-314924/2-A	Lab Control Sample	Total Recoverable	Water	200.8	314924
LCSD 570-314924/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	314924
570-132337-1 MS	EPBBC_20230322	Total Recoverable	Water	200.8	314924
570-132337-1 MSD	EPBBC_20230322	Total Recoverable	Water	200.8	314924

Analysis Batch: 3191d0

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	200.7 Rev 4.4	314531
MB 570-314531/1-A	Method Blank	Dissolved	Water	200.7 Rev 4.4	314531
LCS 570-314531/2-A	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	314531
LCSD 570-314531/3-A	Lab Control Sample Dup	Dissolved	Water	200.7 Rev 4.4	314531

Analysis Batch: 3198d3

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total Recoverable	Water	200.7 Rev 4.4	314891
MB 570-314891/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	314891
LCS 570-314891/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	314891
LCSD 570-314891/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.7 Rev 4.4	314891

Gpnpral Chpmistry

Drpb Batch: 318189

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	BOD Prep	
USB 570-314145/1-A	Method Blank	Total/NA	Water	BOD Prep	
LCS 570-314145/2-A	Lab Control Sample	Total/NA	Water	BOD Prep	

Analysis Batch: 31815)

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	SM 2130B	
LCSSRM 570-314198/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-314198/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-314198/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Drpb Batch: 318204

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	SM 5540C	
MB 570-314207/5-A	Method Blank	Total/NA	Water	SM 5540C	
LCS 570-314207/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	
LCSD 570-314207/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	

Analysis Batch: 3182d2

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	SM 5540C	314207
MB 570-314207/5-A	Method Blank	Total/NA	Water	SM 5540C	314207

Gpnpral Chpmistry 7ContinupxH

Analysis Batch: 3182d2 7ContinupxH

6aL Samplp d	Clipnt Samplp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
LCS 570-314207/6-A	Lab Control Sample	Total/NA	Water	SM 5540C	314207
LCSD 570-314207/7-A	Lab Control Sample Dup	Total/NA	Water	SM 5540C	314207

Analysis Batch: 318835

6aL Samplp d	Clipnt Samplp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	SM 2540F	

Analysis Batch: 3198) 3

6aL Samplp d	Clipnt Samplp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	SM 5210B	314145
USB 570-314145/1-A	Method Blank	Total/NA	Water	SM 5210B	314145
LCS 570-314145/2-A	Lab Control Sample	Total/NA	Water	SM 5210B	314145

Analysis Batch: 319859

6aL Samplp d	Clipnt Samplp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	SM 2540D	
MB 570-315495/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-315495/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-315495/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Drpb Batch: 319d) d

6aL Samplp d	Clipnt Samplp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	1664A	
MB 570-315686/1-A	Method Blank	Total/NA	Water	1664A	
LCS 570-315686/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 570-315686/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	

Analysis Batch: 319) 01

6aL Samplp d	Clipnt Samplp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	SM 2540C	
MB 570-315801/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 570-315801/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 570-315801/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	

Analysis Batch: 319) 03

6aL Samplp d	Clipnt Samplp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	1664A	315686
MB 570-315686/1-A	Method Blank	Total/NA	Water	1664A	315686
LCS 570-315686/2-A	Lab Control Sample	Total/NA	Water	1664A	315686
LCSD 570-315686/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	315686

Analysis Batch: 319) 41

6aL Samplp d	Clipnt Samplp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	Kelada 01	
MB 570-315871/11	Method Blank	Total/NA	Water	Kelada 01	
LCS 570-315871/12	Lab Control Sample	Total/NA	Water	Kelada 01	
LCSD 570-315871/13	Lab Control Sample Dup	Total/NA	Water	Kelada 01	
MRL 570-315871/10	Lab Control Sample	Total/NA	Water	Kelada 01	

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-1

Gpnpral Chpmistry

Analysis Batch: 31d229

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	SM 2510B	
MB 570-316225/10	Method Blank	Total/NA	Water	SM 2510B	
MB 570-316225/42	Method Blank	Total/NA	Water	SM 2510B	

Drpb Batch: 31430)

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	Distill/Ammonia	
MB 570-317308/5-A	Method Blank	Total/NA	Water	Distill/Ammonia	
LCS 570-317308/6-A	Lab Control Sample	Total/NA	Water	Distill/Ammonia	
LCSD 570-317308/7-A	Lab Control Sample Dup	Total/NA	Water	Distill/Ammonia	

Analysis Batch: 31434)

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	350.1	317308
MB 570-317308/5-A	Method Blank	Total/NA	Water	350.1	317308
LCS 570-317308/6-A	Lab Control Sample	Total/NA	Water	350.1	317308
LCSD 570-317308/7-A	Lab Control Sample Dup	Total/NA	Water	350.1	317308

Analysis Batch: 31448d

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	218.6 CR3	

Analysis Batch: 314499

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	218.6 CR3	

Analysis Batch: 3145))

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	SM 5310D	
MB 570-317988/4	Method Blank	Total/NA	Water	SM 5310D	
LCS 570-317988/5	Lab Control Sample	Total/NA	Water	SM 5310D	
LCSD 570-317988/6	Lab Control Sample Dup	Total/NA	Water	SM 5310D	

Gpotpchnical

Analysis Batch: 314928

6aL Samblp d	Clipnt Samblp d	Drpb Pybp	MatriT	Mpthox	Drpb Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	D4464	
LCS 570-317524/17	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-317524/19	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-1

Client Sample ID: EPBBC_20230322

Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	314233	03/24/23 01:05	A1W	EET CAL 4
	Instrument ID: GCMSJJ									
Total/NA	Analysis	8260B SIM		1	25 mL	25 mL	314624	03/24/23 22:50	G6NI	EET CAL 4
	Instrument ID: GCMSFFF									
Total/NA	Prep	625			1003.9 mL	2 mL	315229	03/29/23 05:06	H1SH	EET CAL 4
Total/NA	Analysis	625.1 SIM		1	1 mL	1 mL	316467	03/31/23 19:56	ULLI	EET CAL 4
	Instrument ID: GCMSJJJ									
Total/NA	Analysis	8015B		1	5 mL	5 mL	316065	03/30/23 20:06	P1R	EET CAL 4
	Instrument ID: GC53									
Total/NA	Prep	3510C			256.1 mL	2.5 mL	315947	03/29/23 21:24	UFLU	EET CAL 4
Total/NA	Analysis	8015B		1	10 mL	10 mL	316730	04/01/23 20:08	N1A	EET CAL 4
	Instrument ID: GC48									
Dissolved	Filtration	Filtration			100 mL	100 mL	314348	03/24/23 02:00	YO8L	EET CAL 4
Dissolved	Analysis	218.6		1	4 mL	4 mL	314343	03/24/23 08:17	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6		1	4 mL	4 mL	314343	03/24/23 06:41	YO8L	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	300.0		2	4 mL	4 mL	314324	03/24/23 00:22	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0		2	4 mL	4 mL	314325	03/24/23 00:22	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	300.0	DL	10	4 mL	4 mL	314324	03/24/23 01:15	PS	EET CAL 4
	Instrument ID: IC15									
Total/NA	Analysis	314.0		1	4 mL	4 mL	314458	03/25/23 05:00	M5Z3	EET CAL 4
	Instrument ID: IC8									
Total/NA	Analysis	NO2NO3 Calc		1			317682	04/05/23 12:22	URMH	EET CAL 4
	Instrument ID: IC15									
Dissolved	Filtration	Filtration			50 mL	50 mL	314531	03/24/23 13:05	JP8N	EET CAL 4
Dissolved	Analysis	200.7 Rev 4.4		1			315160	03/27/23 18:36	P1R	EET CAL 4
	Instrument ID: ICP11									
Total Recoverable	Prep	200.7			50 mL	50 mL	314891	03/27/23 08:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.7 Rev 4.4		1			315463	03/28/23 11:56	K1UV	EET CAL 4
	Instrument ID: ICP11									
Dissolved	Filtration	Filtration			50 mL	50 mL	314528	03/24/23 12:44	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			314988	03/27/23 10:35	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	314924	03/27/23 08:51	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			315053	03/27/23 13:05	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Analysis	SM 2340B		1			314659	03/29/23 19:06	P1R	EET CAL 4
	Instrument ID: NOEQUIP									
Total Recoverable	Analysis	SM 2340B		1			314660	03/30/23 19:07	P1R	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-1

Client Sample ID: EPBBC_20230322

Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1664A			1019 mL	1000 mL	315686	03/29/23 09:20	RY4P	EET CAL 4
Total/NA	Analysis	1664A		1			315803	03/29/23 13:42	L6IE	EET CAL 4
	Instrument ID: NO EQUIQ									
Dissolved	Analysis	218.6 CR3		1			317755	04/05/23 15:22	URMH	EET CAL 4
	Instrument ID: IC33									
Total/NA	Analysis	218.6 CR3		1			317746	04/05/23 15:09	URMH	EET CAL 4
	Instrument ID: IC33									
Total/NA	Prep	Distill/Ammonia			5 mL	5 mL	317308	04/04/23 10:15	UXCH	EET CAL 4
Total/NA	Analysis	350.1		1	5 mL	5 mL	317378	04/04/23 12:37	UXCH	EET CAL 4
	Instrument ID: ACA2									
Total/NA	Analysis	Kelada 01		1	8 mL	8 mL	315871	03/29/23 14:51	GG0B	EET CAL 4
	Instrument ID: LACHAT01									
Total/NA	Analysis	SM 2130B		1			314198	03/23/23 21:38	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2510B		1			316225	03/30/23 16:40	BDH9	EET CAL 4
	Instrument ID: ManSciMantech									
Total/NA	Analysis	SM 2540C		1	100 mL	1000 mL	315801	03/29/23 13:29	ZL7L	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	SM 2540D		1	300 mL	1000 mL	315495	03/28/23 16:47	UWCT	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	SM 2540F		1	1000 mL	1 L	314439	03/24/23 09:17	ZVB7	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Prep	BOD Prep					314145	03/23/23 21:03	U7UR	EET CAL 4
Total/NA	Analysis	SM 5210B		1	300 mL	300 mL	315483	03/23/23 21:25	TN8Z	EET CAL 4
	Instrument ID: BOD3									
Total/NA	Analysis	SM 5310D		4	40 mL	40 mL	317988	04/06/23 08:01	UAPD	EET CAL 4
	Instrument ID: TOC12									
Total/NA	Prep	SM 5540C			100 mL	100 mL	314207	03/23/23 19:35	TXA8	EET CAL 4
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	314262	03/23/23 19:49	TXA8	EET CAL 4
	Instrument ID: UV9									
Total/NA	Analysis	D4464		1			317524	04/05/23 08:28	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: TB-20230322-1

Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624.1		1	10 mL	10 mL	314233	03/24/23 02:11	A1W	EET CAL 4
	Instrument ID: GCMSJJ									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc. Job ID: 570-124227-1
6roRectj/ ite: SoeinB / / gF I/ L A and SR6

Laboratory: Eurofins Calscience

All accreditationMjcertisicationMheld by thiMlaboratory are liMed. f ot all accreditationMjcertisicationMare aNNicable to thiMreNort.

Authority	Program	Identification Number	Expiration Date
Aripona	/ tate	Az0Z20	11-18-42
Calisornia	FoMAnBeleMCo3nty / anitation DiMrictM	1010u	07-21-42
Calisornia	/ CA9 R D FA6	17FA0u1u	11-20-42
Calisornia	/ tate	20Z4	07-21-4Q
f evada	/ tate	CA00111	0Z-01-42
OreBon	f EFA6	Q175	04-04-4Q
U/ DA	U/ gederal 6roBramM	6220-44-0005u	05-4Q-42
WaMhinBton	/ tate	Cu18-1Z	10-11-42

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-1

Method	Method Description	Protocol	Laboratory
624.1	Volatile Organic Compounds (GC/MS)	EPA	EET CAL 4
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAL 4
625.1 SIM	Semivolatile Organic Compounds GC/MS (SIM)	EPA	EET CAL 4
8015B	Gasoline Range Organics - (GC)	SW846	EET CAL 4
8015B	Diesel Range Organics (DRO) (GC)	SW846	EET CAL 4
218.6	Chromium, Hexavalent (Ion Chromatography)	EPA	EET CAL 4
300.0	Anions, Ion Chromatography	EPA	EET CAL 4
314.0	Perchlorate (IC)	EPA	EET CAL 4
NO2NO3 Calc	Nitrogen, Nitrate-Nitrite	EPA	EET CAL 4
200.7 Rev 4.4	Metals (ICP)	EPA	EET CAL 4
200.8	Metals (ICP/MS)	EPA	EET CAL 4
SM 2340B	Total Hardness (as CaCO3) by calculation	SM	EET CAL 4
1664A	HEM and SGT-HEM	1664A	EET CAL 4
218.6 CR3	Chromium, Trivalent (Calculation)	EPA	EET CAL 4
350.1	Nitrogen, Ammonia	EPA	EET CAL 4
Kelada 01	Cyanide, Total, Acid Dissociable and Thiocyanate	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2510B	Conductivity, Specific Conductance	SM	EET CAL 4
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
SM 2540F	Solids, Settleable	SM	EET CAL 4
SM 5210B	BOD, 5-Day	SM	EET CAL 4
SM 5310D	Organic Carbon, Total (TOC)	SM	EET CAL 4
SM 5540C	Methylene Blue Active Substances (MBAS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CAL 4
200.7	Preparation, Total Recoverable Metals	EPA	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CAL 4
5030C	Purge and Trap	SW846	EET CAL 4
625	Liquid-Liquid Extraction	EPA	EET CAL 4
BOD Prep	Preparation, BOD	SM	EET CAL 4
Distill/Ammonia	Distillation, Ammonia	None	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4
SM 5540C	Preparation, Methylene Blue Active Substances (MBAS)	SM	EET CAL 4

Protocol References:

1664A = EPA-821-98-002
ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132337-1	EPBBC_20230322	Water	03/22/23 10:20	03/23/23 19:20
570-132337-2	TB-20230322-1	Water	03/22/23 10:20	03/23/23 19:20

Virendra Patel

From: Rapp, Kerry <KRapp@haleyaldrich.com>
Sent: Monday, March 27, 2023 3:49 PM
To: Virendra Patel
Cc: Miller, Katherine; Broadwell, Kirkland
Subject: RE: <Response Requested> Eurofins Calscience sample confirmation files from 570-132337-1 Boeing SSFL ISRA and BMP

EXTERNAL EMAIL*

Hi Virendra,

The trip blank on page 1 of the COC should read TB-20230322-1, which should match the labels on the container while the trip blank on page 2 should be TB-20230322-2. The labels are likely right, but the mistake looks to be on page 1 of the COC for trip blank -1 (mistakenly listed as -2).

I noticed on the acknowledgement that the sample is logged in as EPBBC_20230323 which doesn't match the COC, EPBBC_20230322.

Thanks,
Kerry

From: Virendra Patel <Virendra.Patel@et.eurofinsus.com>
Sent: Friday, March 24, 2023 3:16 PM
To: Miller, Katherine <KMiller@haleyaldrich.com>; Rapp, Kerry <KRapp@haleyaldrich.com>; Dallalah, Michelle <MDallalah@haleyaldrich.com>; Patel Virendra <Virendra.Patel@et.eurofinsus.com>
Subject: <Response Requested> Eurofins Calscience sample confirmation files from 570-132337-1 Boeing SSFL ISRA and BMP

CAUTION: External Email

Hello,

Attached please find the sample confirmation files for job 570-132337-1; Boeing SSFL ISRA and BMP

The number of containers for the following sample did not match the information listed on the Chain-of-Custody (COC): EPBBC_20230323 (570-132337-1). Received 45 containers, while the COC lists 47.

The sample ID for the following sample did not match the information listed on the Chain-of-Custody (COC): TB-20230323-1 (570-132337-2). The container label lists TB_20230322-1, while the COC lists TB_20230322-2 (collection date/time matched).
Please feel free to contact me if you have any questions.

Thank you.

Virendra Patel
Project Manager

Eurofins Calscience
Phone: 714-895-5494
Mobile: 714-887-9901

E-mail: Virendra.Patel@et.eurofinsus.com
www.eurofinsus.com/env



Reference: [570-442406]
Attachments: 3

> > Bank information has changed, please refer to remittance information on invoice. < <

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

Loc: 570
132337

570-132337 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Job / SDG No.:
H&A Project Number : 129095-020-001-06				
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230322	3/22/23	1020	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N														x					Time of Readings 10:20
																										DO (mg/L) 13.66
																										pH 7.55
																										Temp (°C/°F) 10.54°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 3/23/23 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H+A	Date/Time: 3/23/23 1600	Received by: EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/6/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230322	3/22/23	1020	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014596
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Received: [illegible] EC	Date/Time: 3/23/23 1600
Relinquished by: [illegible]	Company: EC	Date/Time: 3/23/23 1920	Received: [illegible] EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132337-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132337-3)	3/22/23	10:20 Pacific		Water			X				3	See Attached Instructions
												Run past HT

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 14:47			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		2.4°C T-0279

Ver: 06/08/2021

4/6/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212454.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132337-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT - VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 9:48	EC		3/24/23 0948	EC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212454

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132337-1

Login Number: 132337
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/4/2023 10:22:23 AM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132337-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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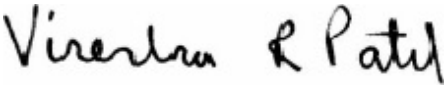
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-2

Qualifiers

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-2

Job ID: 570-132337-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132337-2

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.9º C, 2.3º C and 2.7º C.

Receipt Exceptions

The number of containers for the following sample did not match the information listed on the Chain-of-Custody (COC): EPBBC_20230322 (570-132337-1). Received 45 containers, while the COC lists 47.

The sample ID for the following sample did not match the information listed on the Chain-of-Custody (COC): TB-20230322-1 (570-132337-2). The container label lists TB_20230322-1, while the COC lists TB_20230322-2 (collection date/time matched). The client was contacted, and the lab was instructed to <EXPLANATION_REQUIRED>.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-2

Client Sample ID: EPBBC_20230322

Lab Sample ID: 570-132337-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.010		0.00050	0.000079	ug/L	1		1631E	Total/NA
Mercury	0.0065	MB	0.00050	0.000079	ug/L	1		1631E	Dissolved

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-2

Method: EPA 1631E - Mercury, Low Level (CVAFS)

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.010		0.00050	0.000079	ug/L			03/29/23 16:17	1

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-2

Method: EPA 1631E - Mercury, Low Level (CVAFS) - Dissolved

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0065	MB	0.00050	0.000079	ug/L			03/29/23 17:40	1

Method: 1631E - Mercury, Low Level (CVAFS)

Lab Sample ID: MB 580-421801/26
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/29/23 16:46	1

Lab Sample ID: MB 580-421801/27
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/29/23 16:50	1

Lab Sample ID: MB 580-421801/29
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00050	0.000079	ug/L			03/29/23 16:59	1

Lab Sample ID: LCS 580-421801/30
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00500	0.00492		ug/L		98	77 - 123		

Lab Sample ID: LCSD 580-421801/31
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00500	0.00484		ug/L		97	77 - 123	2	24

Lab Sample ID: 570-132337-1 MS
Matrix: Water
Analysis Batch: 421801

Client Sample ID: EPBBC_20230322
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	0.010		0.0150	0.0235		ug/L		88	71 - 125		

Lab Sample ID: 570-132337-1 MSD
Matrix: Water
Analysis Batch: 421801

Client Sample ID: EPBBC_20230322
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.010		0.0150	0.0249		ug/L		97	71 - 125	6	24

Lab Sample ID: MB 580-421483/1-A
Matrix: Water
Analysis Batch: 421801

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0000916	J,DX	0.00050	0.000079	ug/L			03/29/23 15:52	1

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-2

Metals

Filtration Batch: 421483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	Filtration	
MB 580-421483/1-A	Method Blank	Dissolved	Water	Filtration	

Analysis Batch: 421801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	1631E	421483
570-132337-1	EPBBC_20230322	Total/NA	Water	1631E	
MB 580-421483/1-A	Method Blank	Dissolved	Water	1631E	421483
MB 580-421801/26	Method Blank	Total/NA	Water	1631E	
MB 580-421801/27	Method Blank	Total/NA	Water	1631E	
MB 580-421801/29	Method Blank	Total/NA	Water	1631E	
LCS 580-421801/30	Lab Control Sample	Total/NA	Water	1631E	
LCSD 580-421801/31	Lab Control Sample Dup	Total/NA	Water	1631E	
570-132337-1 MS	EPBBC_20230322	Total/NA	Water	1631E	
570-132337-1 MSD	EPBBC_20230322	Total/NA	Water	1631E	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-2

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			250 mL	250 mL	421483	03/27/23 12:42	AJD	EET SEA
Dissolved	Analysis	1631E		1			421801	03/29/23 17:40	D1C	EET SEA
	Instrument ID: 2600-3									
Total/NA	Analysis	1631E		1			421801	03/29/23 16:17	D1C	EET SEA
	Instrument ID: 2600-3									

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132337-2
Project/Site: Boeing SSFL ISRA and BMP

Laboratory: Eurofins Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	20-004	02-19-25
ANAB	Dept. of Defense ELAP	L2236	01-19-25
ANAB	Dept. of Energy	L2236	01-19-25
ANAB	ISO/IEC 17025	L2236	01-19-25
Arkansas DEQ	State	8801526	05-23-23
California	State	2954	07-07-23
Florida	NELAP	E87575	06-30-23
Louisiana	NELAP	03073	06-30-23
Louisiana (All)	NELAP	03073	06-30-23
Maine	State	WA01273	05-02-24
Montana (UST)	State	NA	04-14-27
New Jersey	NELAP	WA014	06-30-23
New York	NELAP	11662	04-01-23
Oregon	NELAP	4167	07-07-23
US Fish & Wildlife	US Federal Programs	A20571	06-30-23
USDA	US Federal Programs	525-23-4-22573	01-04-26
Washington	State	C788	07-13-23
Wisconsin	State	399133460	08-31-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-2

Method	Method Description	Protocol	Laboratory
1631E	Mercury, Low Level (CVAFS)	EPA	EET SEA
Filtration	Sample Filtration	None	EET SEA

Protocol References:

EPA = US Environmental Protection Agency

None = None

Laboratory References:

EET SEA = Eurofins Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132337-1	EPBBC_20230322	Water	03/22/23 10:20	03/23/23 19:20

Loc: 570
132337

570-132337 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Job / SDG No.:
H&A Project Number : 129095-020-001-06				
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230322	3/22/23	1020	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N														x					Time of Readings 10:20
																										DO (mg/L) 13.66
																										pH 7.55
																										Temp (°C/°F) 10.54°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 3/23/23 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H+A	Date/Time: 3/23/23 1600	Received by: EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230322	3/22/23	1020	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014596
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Received: [illegible] EC	Date/Time: 3/23/23 1600
Relinquished by: [illegible]	Company: EC	Date/Time: 3/23/23 1920	Received: [illegible] EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132337-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132337-3)	3/22/23	10:20 Pacific		Water			X				3	See Attached Instructions
												Run past HT

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 14:47			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		2.4°C T-0279

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212454.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132337-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									- VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 9:48	EC		3/24/23 0948	EC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212454

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212456.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northwest,		Accreditations Required (See note): State Program - California		Job #: 570-132337-2
Address: 5755 8th Street East, ,	Due Date Requested: 4/10/2023			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1631E/ Mercury, Total	1631E/Filtration_ME Mercury, Dissolved	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	03/24/23 9:31	EC		3/25/23 0915	EUS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: IR9 - 3.0/3.3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132337-2

Login Number: 132336
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132337-2

Login Number: 132336
List Number: 3
Creator: Deebach, Andrew J

List Source: Eurofins Seattle
List Creation: 03/26/23 12:17 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132337-3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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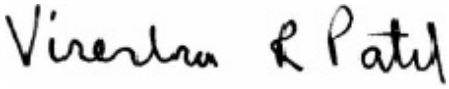
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-3

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132337-3

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132337-3

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.9º C, 2.3º C and 2.7º C.

Receipt Exceptions

The number of containers for the following sample did not match the information listed on the Chain-of-Custody (COC): EPBBC_20230322 (570-132337-1). Received 45 containers, while the COC lists 47.

The sample ID for the following sample did not match the information listed on the Chain-of-Custody (COC): TB-20230322-1 (570-132337-2). The container label lists TB_20230322-1, while the COC lists TB_20230322-2 (collection date/time matched). The client was contacted, and the lab was instructed to <EXPLANATION_REQUIRED>.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Quant-Tray - E. Coli - level 4 required: This method was subcontracted to Enthalpy Analytical - Barkley. The subcontract laboratory certification is different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-3

Method	Method Description	Protocol	Laboratory
Subcontract	Quant-Tray - E. Coli - level 4 required	None	Enthalpy

Protocol References:

None = None

Laboratory References:

Enthalpy = Enthalpy Analytical - Barkley, 931 W. Barkley Ave, Orange, CA 92868

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132337-1	EPBBC_20230322	Water	03/22/23 10:20	03/23/23 19:20

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 482181
Report Level: IV
Report Date: 04/04/2023

Microbiology Tests

Analytical Report *prepared for:*

Virendra Patel
Eurofins Calscience Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Project: BOEING NPDES SSFL - (570-132337-1) Boeing SSFL ISRA and BMP - Project #57014595

Authorized for release by:

Quynhgiao Le, Project Manager
714-7716900
quynhgiao.le@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105

ENTHALPY ANALYTICAL

Sample Summary

Virendra Patel Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780	Lab Job #: Project No: Location: Date Received:	482181 BOEING NPDES SSFL (570-132337-1) Boeing SSFL ISRA and BMP - Project #57014595 03/24/23

Sample ID	Lab ID	Collected	Matrix
EPBBC_20230323	482181-001	03/22/23 10:20	Water

ENTHALPY ANALYTICAL

Case Narrative

MICROBIOLOGY TESTS (SM 9223BB)

Eurofins Calscience Tustin 2841 Dow Avenue, Suite 100 Tustin, CA 92780 Virendra Patel	Lab Job Number:	482181
	Project No:	BOEING NPDES SSFL
	Location:	(570-132337-1) Boeing SSFL ISRA and BMP - Project #57014595
	Date Received:	03/24/23

This data package contains sample and QC results for one water sample, requested for the above referenced project on 03/24/23. See attached cooler receipt form for any sample receipt problems or discrepancies.

Chain of Custody

482181

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

~~Client Information (Sub Contract Lab)~~	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212454.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132337-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
~~EPBBC_20230323 (570-132337-1)~~	~~3/22/23~~	10:20 Pacific		Water			X		~~See Attached Instructions~~
									RUN PAST HT
									- VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 3-24-23 9:48	Company EC	Received by:	Date/Time: 3/24/23 0948	Company EC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:	

Ver: 06/08/2021

4/9/2023

ICOC No:
570-212454

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: Eurofins Calscience

Project: Boeing SSFL ISRA and BMP

Date Received: 3/24/23

Sampler's Name Present: ☐ Yes ☑ No

Section 2

Sample(s) received in a cooler? ☑ Yes, How many? 1 ☐ No (skip section 2)

Sample Temp (°C) (No Cooler): _____

Sample Temp (°C), One from each cooler: #1: 3.4 #2: _____ #3: _____ #4: _____

(Acceptance range is < 6°C but not frozen (for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)

Shipping Information: _____

Section 3

Was the cooler packed with: ☑ Ice ☐ Ice Packs ☐ Bubble Wrap ☐ Styrofoam ☐ Paper ☐ None ☐ Other _____

Cooler Temp (°C): #1: 1.8 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✔		
Are sample IDs present?	✔		
Are sampling dates & times present?	✔		
Is a relinquished signature present?	✔		
Are the tests required clearly indicated on the COC?	✔		
Are custody seals present?		✔	
If custody seals are present, were they intact?			✔
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)	✔		
Did all samples arrive intact? If no, indicate in Section 4 below.	✔		
Did all bottle labels agree with COC? (ID, dates and times)	✔		
Were the samples collected in the correct containers for the required tests?	✔		
Are the containers labeled with the correct preservatives?	✔		
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✔
Was a sufficient amount of sample submitted for the requested tests?	✔		

Section 5 Explanations/Comments

Section 6

For discrepancies, how was the Project Manager notified? ☐ Verbal PM Initials: _____ Date/Time _____

☐ Email (email sent to/on): _____ / _____

Project Manager's response:

Completed By: _____ Date: 3/24/23

Results & QC Summary

ENTHALPY ANALYTICAL

Total Coliform / E. coli by Quanti-Tray

Lab #: 482181 **Project#:** BOEING NPDES SSFL

Client: Eurofins Calscience Tustin **Location:** (570-132337-1) Boeing SSFL ISRA an...

Field ID:	EPBBC_20230323	**Batch#:**	310429	**Analyzed:**	03/25/23 09:40
Lab ID:	482181-001	**Sampled:**	03/22/23 10:20	**Prep:**	
Matrix:	Water	**Received:**	03/24/23	**Analysis:**	SM 9223Bb
DiIn Fac:	1.000	**Prepared:**	03/24/23 14:18	**Analyst:**	VLC

482181-001 Analyte	Result	RL	Units	Qual
Coliform, E. Coli	**360**	1.0	MPN/100ml	H

Legend

H: Holding time was exceeded

RL: Reporting Limit

SM 9223 B-b, Quanti-Tray

Prep Analyst: VC Prep Date/Time: 3/24/23 1418 QC Batch ID: 316429 Batch Page 1 of 1

Read Analyst: JA Read Date/Time 3/25/23 0940

Media Used (check one): ☐Colisure ☒Colilert 18 ☐Colilert 24 Media Lot #: HU430 Pipette Lot #: A104193/A104222/A104170

Monthly Quanti-tray Sealer Check: Did it Pass? ☒Yes ☐No Date of last check*: 3/1/23 Bottle Lot #: DU0060 Comparator Lot #: HU148

* Quanti-Tray Sealer Check must be performed monthly

Total and E. coli: Incubator ID: M3 Incubator In, Temp/Time: 35.4°C 1437 Incubator Out, Temp/Time: 35.3°C 0940

Fecal Coliform: Water Bath ID: NA Water Bath In, Temp/Time: NA Water Bath Out, Temp/Time: NA

Client	Client Sample ID	Enthalpy Sample ID	Dilution Factor	Total Coliform Counts Large Wells	Total Coliform Counts Small Wells	MPN Table Value	Final Result, MPN	E. coli Counts Large Wells	E. coli Counts Small Wells	MPN Table Value	Final Result, MPN	Fecal Coliform Counts (Colilert 18 only) Large Wells	Fecal Coliform Counts (Colilert 18 only) Small Wells	MPN Table Value	Final Result, MPN	Comments
		482181-001	1x	49	48	>2419.6	>2400	49	21	365.4	360					CA-01
		↓	10x	49	33	727.0	7300	18	3	25.6	260					↓
			100x	40	8	93.3	9300	1	0	1.0	100					
		482180-001	1x	49	48	>2419.6	>2400	27	2	40.4	40					EU-01
		↓	10x	49 ~~27~~ JA 3/25/23	29	579.4	5800 ~~579.6~~ JA 3/25/23	5	0	5.2	52					↓
			100x	25	2	36.4	3600	1	0	1.0	100					
		482177-001	1x	49	48	>2419.6	>2400	42	10	110.6	110					EN-01
		↓	10x	49	39	1046.2	10,000	6	0	6.3	63					↓
			100x	38	8	83.9	8400	0	0	<1	<100					
						JA 3/25/23										
Quality Control		**Culture ID**														
Positive +/+ (E. Coli)		3/19/23		49	48	>2419.6	>2400	49	48	>2419.6	>2400					
Positive +/- (K. Pneumonia)		↓		49	48	>2419.6	>2400	0	0	<1	<1					
Negative -/- (P. Aeruginosa)				0	0	<1	<1	0	0	<1	<1					

Data Entered By: JA 3/25/23 Data Reviewed By:

Loc: 570
132337

570-132337 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Job / SDG No.:
H&A Project Number : 129095-020-001-06				
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 – (Total Dissolved) (E903.0/E903, E904, E905)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 – (Total Recoverable) (E903.0/E903, E904, E905)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230322	3/22/23	1020	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N														x					Time of Readings 10:20
																										DO (mg/L) 13.66
																										pH 7.55
																										Temp (°C/°F) 10.54°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 3/23/23 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Received by: EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230322	3/22/23	1020	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014596
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Received: [illegible] EC	Date/Time: 3/23/23 1600
Relinquished by: [illegible]	Company: EC	Date/Time: 3/23/23 1920	Received: [illegible] EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132337-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132337-3)	3/22/23	10:20 Pacific		Water			X				3	See Attached Instructions
												Run past HT

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 14:47			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		2.4°C T-0279

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212454.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132337-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									- VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-21-23 9:48	EC		3/24/23 0948	ET
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212454

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132337-3

Login Number: 132337
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132337-4

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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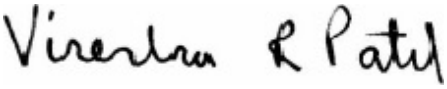
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-4

Qualifiers

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132337-4

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132337-4

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.9º C, 2.3º C and 2.7º C.

Dioxin
Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: EPBBC_20230322 (570-132337-1), (CCV 320-669579/17) and (MB 320-668853/1-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: (CCV 320-669599/2). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: (CCV 320-670020/1), (LCS 320-668853/2-A) and (LCSD 320-668853/3-A). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: EPA Method 1613B specifies a +/- 15 second retention time difference between the recovery standard in the initial calibration (ICAL) and the continuing calibration verification (CCV). The 13C-1,2,3,4-TCDD and 13C-1,2,3,7,8,9-HxCDD associated with the following samples run on instrument DFS 1 exceeded this criteria: EPBBC_20230322 (570-132337-1) and (CCV 320-670442/7). This retention time shift is due to normal and reasonable column maintenance and does not affect the instrument chromatography resolution, sensitivity, or identification of target analytes. System retention times have been updated for proper analyte identification.

Method 1613B: The following sample was diluted due to the nature of the sample matrix: EPBBC_20230322 (570-132337-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

I ient H: a yin& A dir oeh, . It hP
j co/nhH Beh: g one F BBLRIBMd yt r g3 j

Job ID: 570-129227-C

Client Sample ID: EPBBC_20230322 — Lab Sample ID: 570-132337-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1.9.2.7.8-j nl DL	0P00000q5	J.DN X	0P00050	0P0000000 19	TFSR	1		1612g	4oHyiSud
9.2.C.7.8-j nl DL	0P00000029	J.DN X	0P00050	0P0000000 1C	TFSR	1		1612g	4oHyiSud
1.9.2.C.7.8-axl DD	0P0000012	J.DN X	0P00050	0P0000000 2q	TFSR	1		1612g	4oHyiSud
1.9.2.6.7.8-axl DD	0P00000080	J.DN X	0P00050	0P0000000 C1	TFSR	1		1612g	4oHyiSud
1.9.2.7.8.q-axl DD	0P00000070	J.DN	0P00050	0P0000000 27	TFSR	1		1612g	4oHyiSud
1.9.2.7.8.q-axl DL	0P00000079	J.DN X	0P00050	0P0000000 5q	TFSR	1		1612g	4oHyiSud
1.9.2.C.6.7.8-apl DD	0P0000070	J.DN 3 g X	0P00050	0P0000009 0	TFSR	1		1612g	4oHyiSud
1.9.2.C.6.7.8-apl DL	0P00000q7	J.DN X	0P00050	0P0000006 0	TFSR	1		1612g	4oHyiSud
1.9.2.C.7.8.q-apl DL	0P00000072	J.DN X	0P00050	0P0000007 1	TFSR	1		1612g	4oHyiSud
4oHyi j nl DL	0P0000012	J.DN X	0P00050	0P0000000 19	TFSR	1		1612g	4oHyiSud
4oHyi axl DD	0P0000098	J.DN X	0P00050	0P0000000 27	TFSR	1		1612g	4oHyiSud
4oHyi axl DL	0P00000079	J.DN X	0P00050	0P0000000 59	TFSR	1		1612g	4oHyiSud
4oHyi apl DD	0P000099	J.DN 3 g X	0P00050	0P0000009 0	TFSR	1		1612g	4oHyiSud
4oHyi apl DL	0P00001C	J.DN X	0P00050	0P0000006 0	TFSR	1		1612g	4oHyiSud
Ol DD - DR	0P0000q2	J.DN 3 g	0P00050	0P0000010	TFSR	5		1612g	4oHyiSud
Ol DL - DR	0P000090	J.DN 3 g	0P00050	0P0000091	TFSR	5		1612g	4oHyiSud

4, es DnHhHet BTmmyc&r ons t oHe hiTr n cyr eh, nmeHyi HisHonsTiHsP

ETcofets I yishent hn

4/28/2023

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EPBBC920230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 10:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000099	0.00000028	ug/L		04/20/23 06:26	04/23/23 09:55	1
2,3,7,8-TCDF	ND		0.0000099	0.00000094	ug/L		04/20/23 06:26	04/23/23 09:55	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000018	ug/L		04/20/23 06:26	04/23/23 09:55	1
1,2,3,7,8-PeCDF	**0.000000v5**	**J,DX q**	0.000050	0.00000012	ug/L		04/20/23 06:26	04/23/23 09:55	1
2,3,4,7,8-PeCDF	**0.00000032**	**J,DX q**	0.000050	0.00000014	ug/L		04/20/23 06:26	04/23/23 09:55	1
1,2,3,4,7,8-HxCDD	**0.0000013**	**J,DX q**	0.000050	0.00000039	ug/L		04/20/23 06:26	04/23/23 09:55	1
1,2,3,6,7,8-HxCDD	**0.00000080**	**J,DX q**	0.000050	0.00000041	ug/L		04/20/23 06:26	04/23/23 09:55	1
1,2,3,7,8,v-HxCDD	**0.00000070**	**J,DX**	0.000050	0.00000037	ug/L		04/20/23 06:26	04/23/23 09:55	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000056	ug/L		04/20/23 06:26	04/23/23 09:55	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000056	ug/L		04/20/23 06:26	04/23/23 09:55	1
1,2,3,7,8,v-HxCDF	**0.00000072**	**J,DX q**	0.000050	0.00000059	ug/L		04/20/23 06:26	04/23/23 09:55	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000052	ug/L		04/20/23 06:26	04/23/23 09:55	1
1,2,3,4,6,7,8-HpCDD	**0.0000070**	**J,DX MB q**	0.000050	0.000002 0	ug/L		04/20/23 06:26	04/23/23 09:55	1
1,2,3,4,6,7,8-HpCDF	**0.00000v7**	**J,DX q**	0.000050	0.00000060	ug/L		04/20/23 06:26	04/23/23 09:55	1
1,2,3,4,7,8,v-HpCDF	**0.00000073**	**J,DX q**	0.000050	0.00000071	ug/L		04/20/23 06:26	04/23/23 09:55	1
Total TCDD	ND		0.0000099	0.00000028	ug/L		04/20/23 06:26	04/23/23 09:55	1
Total TCDF	ND		0.0000099	0.00000094	ug/L		04/20/23 06:26	04/23/23 09:55	1
Total PeCDD	ND		0.000050	0.00000018	ug/L		04/20/23 06:26	04/23/23 09:55	1
Total PeCDF	**0.0000013**	**J,DX q**	0.000050	0.00000012	ug/L		04/20/23 06:26	04/23/23 09:55	1
Total HxCDD	**0.0000028**	**J,DX q**	0.000050	0.00000037	ug/L		04/20/23 06:26	04/23/23 09:55	1
Total HxCDF	**0.00000072**	**J,DX q**	0.000050	0.00000052	ug/L		04/20/23 06:26	04/23/23 09:55	1
Total HpCDD	**0.000022**	**J,DX MB q**	0.000050	0.000002 0	ug/L		04/20/23 06:26	04/23/23 09:55	1
Total HpCDF	**0.000014**	**J,DX q**	0.000050	0.00000060	ug/L		04/20/23 06:26	04/23/23 09:55	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*71*		*25 - 164*	*04/20/23 06:26*	*04/23/23 09:55*	*1*
13C-2,3,7,8-TCDF	*70*		*24 - 169*	*04/20/23 06:26*	*04/23/23 09:55*	*1*
13C-1,2,3,7,8-PeCDD	*67*		*25 - 181*	*04/20/23 06:26*	*04/23/23 09:55*	*1*
13C-1,2,3,7,8-PeCDF	*66*		*24 - 185*	*04/20/23 06:26*	*04/23/23 09:55*	*1*
13C-2,3,4,7,8-PeCDF	*66*		*21 - 178*	*04/20/23 06:26*	*04/23/23 09:55*	*1*
13C-1,2,3,4,7,8-HxCDD	*70*		*32 - 141*	*04/20/23 06:26*	*04/23/23 09:55*	*1*
13C-1,2,3,6,7,8-HxCDD	*67*		*28 - 130*	*04/20/23 06:26*	*04/23/23 09:55*	*1*
13C-1,2,3,4,7,8-HxCDF	*61*		*26 - 152*	*04/20/23 06:26*	*04/23/23 09:55*	*1*

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EPBBC920230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 10:20

Lab Sample ID: 570-132337-1
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,6,7,8-HxCDF	65		26 - 123	04/20/23 06:26	04/23/23 09:55	1
13C-1,2,3,7,8,9-HxCDF	62		29 - 147	04/20/23 06:26	04/23/23 09:55	1
13C-2,3,4,6,7,8-HxCDF	66		28 - 136	04/20/23 06:26	04/23/23 09:55	1
13C-1,2,3,4,6,7,8-HpCDD	51		23 - 140	04/20/23 06:26	04/23/23 09:55	1
13C-1,2,3,4,6,7,8-HpCDF	51		28 - 143	04/20/23 06:26	04/23/23 09:55	1
13C-1,2,3,4,7,8,9-HpCDF	48		26 - 138	04/20/23 06:26	04/23/23 09:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	95		35 - 197	04/20/23 06:26	04/23/23 09:55	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-4

Method: EPA 1613B - Dioxins and Furans (HRGC/HRMS) - DL

Client Sample ID: EPBBC920230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 10:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
TCDD	0.0000083	J, DX MB	0.00050	0.0000010	ug/L		04/20/23 06:26	04/27/23 00:00	5
TCDF	0.000020	J, DX MB	0.00050	0.0000021	ug/L		04/20/23 06:26	04/27/23 00:00	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-OCDD	*76*		*17 - 157*	*04/20/23 06:26*	*04/27/23 00:00*	*5*
13C-OCDF	*79*		*17 - 157*	*04/20/23 06:26*	*04/27/23 00:00*	*5*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*94*		*35 - 197*	*04/20/23 06:26*	*04/27/23 00:00*	*5*

Surrogate Summary

Client: Haynes & Andrews, Inc. Job ID: 570-124227-C
Project/Site: Benton Fire BBLR IBM dyt rg 8 j

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	37TCDD (35-197)	Percent Surrogate Recovery (Acceptance Limits)						
570-124227-1	_jggl 340420244	E5							
570-124227-1 - DR	_jggl 340420244	EC							
8 g 240-996652S1-d	8 nH, or giyt k	E9							

Surrogate Legend

27TCDD = 27TCDD-4.2.7.6-TCDD

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

Lab Sample ID	Client Sample ID	37TCDD (31-191)	Percent Surrogate Recovery (Acceptance Limits)						
RIB 240-996652S4-d	Ryb Lot Hoi Bympin	106							
RIBD 240-996652S2-d	Ryb Lot Hoi Bympin Dup	E7							

Surrogate Legend

27TCDD = 27TCDD-4.2.7.6-TCDD

Isotope Dilution Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-4

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
570-132337-1	EPBBC_20230322	71	70	67	66	66	70	67	61

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)		
570-132337-1	EPBBC_20230322	65	62	66	51	51	48		

SurroGate LeGend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	g CDD (17-157)	g CDF (17-157)						
570-132337-1 - DL	EPBBC_20230322	76	79						

SurroGate LeGend

OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water — **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (20-175)	TCDF (22-152)	PeCDD (21-227)	PeCDF (21-192)	PeCF (13-328)	HxCDD (21-193)	HxDD (25-163)	HxCDF (19-202)
LCS 320-668853/2-A	Lab Control Sample	71	82	61	67	69	57	56	63
LCSD 320-668853/3-A	Lab Control Sample Dup	61	100	55	65	60	69	73	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (21-159)	HxCF (17-205)	13CHxCF (22-176)	HpCDD (26-166)	HpCDF (21-158)	HpCDF2 (20-186)	g CDD (13-199)	g CDF (13-199)
LCS 320-668853/2-A	Lab Control Sample	61	66	66	57	56	63	71	69
LCSD 320-668853/3-A	Lab Control Sample Dup	104	111	113	82	95	110	138	177

SurroGate LeGend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF

Isotope Dilution Summary

Client: Haley & Aldrich, Inc. Job ID: 570-132337-4
Project/Site: Boeing SSFL ISRA and BMP

PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Matrix: Water **Prep Type: Total/NA**

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (25-164)	TCDF (24-169)	PeCDD (25-181)	PeCDF (24-185)	PeCF (21-178)	HxCDD (32-141)	HxDD (28-130)	HxCDF (26-152)
MB 320-668853/1-A	Method Blank	69	64	65	64	66	68	68	60

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HxDF (26-123)	HxCF (29-147)	13CHxCF (28-136)	HpCDD (23-140)	HpCDF (28-143)	HpCDF2 (26-138)	g CDD (17-157)	g CDF (17-157)
MB 320-668853/1-A	Method Blank	60	57	61	69	54	56	50	46

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDD = 13C-OCDD
OCDF = 13C-OCDF

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-668853/1-A
Matrix: Water
Analysis Batch: 669579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 668853

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.000000063	ug/L		04/20/23 06:26	04/22/23 23:29	1
2,3,7,8-TCDF	ND		0.000010	0.000000062	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8-PeCDD	ND		0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8-PeCDF	ND		0.000050	0.00000010	ug/L		04/20/23 06:26	04/22/23 23:29	1
2,3,4,7,8-PeCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,7,8-HxCDD	ND		0.000050	0.00000030	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000030	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000028	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000018	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000017	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.00000019	ug/L		04/20/23 06:26	04/22/23 23:29	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000017	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,6,7,8-HpCDD	0.00000144	J,DX q	0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,6,7,8-HpCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1
OCDD	0.00000787	J,DX q	0.00010	0.00000015	ug/L		04/20/23 06:26	04/22/23 23:29	1
OCDF	0.00000368	J,DX	0.00010	0.00000027	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total TCDD	ND		0.000010	0.00000063	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total TCDF	ND		0.000010	0.00000062	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total PeCDD	ND		0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total PeCDF	ND		0.000050	0.00000010	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HxCDD	ND		0.000050	0.00000028	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HxCDF	ND		0.000050	0.00000017	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HpCDD	0.00000187	J,DX q	0.000050	0.00000020	ug/L		04/20/23 06:26	04/22/23 23:29	1
Total HpCDF	ND		0.000050	0.000000011	ug/L		04/20/23 06:26	04/22/23 23:29	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*25 - 164*	*04/20/23 06:26*	*04/22/23 23:29*	*1*
13C-2,3,7,8-TCDF	*64*		*24 - 169*	*04/20/23 06:26*	*04/22/23 23:29*	*1*
13C-1,2,3,7,8-PeCDD	*65*		*25 - 181*	*04/20/23 06:26*	*04/22/23 23:29*	*1*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-668853/1-A
Matrix: Water
Analysis Batch: 669579

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 668853

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDF	64		24 - 185	04/20/23 06:26	04/22/23 23:29	1
13C-2,3,4,7,8-PeCDF	66		21 - 178	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,7,8-HxCDD	68		32 - 141	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,6,7,8-HxCDD	68		28 - 130	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,7,8-HxCDF	60		26 - 152	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,6,7,8-HxCDF	60		26 - 123	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,7,8,9-HxCDF	57		29 - 147	04/20/23 06:26	04/22/23 23:29	1
13C-2,3,4,6,7,8-HxCDF	61		28 - 136	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,6,7,8-HpCDD	69		23 - 140	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,6,7,8-HpCDF	54		28 - 143	04/20/23 06:26	04/22/23 23:29	1
13C-1,2,3,4,7,8,9-HpCDF	56		26 - 138	04/20/23 06:26	04/22/23 23:29	1
13C-OCDD	50		17 - 157	04/20/23 06:26	04/22/23 23:29	1
13C-OCDF	46		17 - 157	04/20/23 06:26	04/22/23 23:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
37Cl4-2,3,7,8-TCDD	96		35 - 197	04/20/23 06:26	04/22/23 23:29	1

Lab Sample ID: LCS 320-668853/2-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 668853

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			0.000200	0.000185		ug/L		93	67 - 158		
2,3,7,8-TCDF			0.000200	0.000189		ug/L		95	75 - 158		
1,2,3,7,8-PeCDD			0.00100	0.000830		ug/L		83	70 - 142		
1,2,3,7,8-PeCDF			0.00100	0.000860		ug/L		86	80 - 134		
2,3,4,7,8-PeCDF			0.00100	0.000888		ug/L		89	68 - 160		
1,2,3,4,7,8-HxCDD			0.00100	0.000836		ug/L		84	70 - 164		
1,2,3,6,7,8-HxCDD			0.00100	0.000849		ug/L		85	76 - 134		
1,2,3,7,8,9-HxCDD			0.00100	0.000844		ug/L		84	64 - 162		
1,2,3,4,7,8-HxCDF			0.00100	0.000842		ug/L		84	72 - 134		
1,2,3,6,7,8-HxCDF			0.00100	0.000841		ug/L		84	84 - 130		
1,2,3,7,8,9-HxCDF			0.00100	0.000831		ug/L		83	78 - 130		
2,3,4,6,7,8-HxCDF			0.00100	0.000824		ug/L		82	70 - 156		
1,2,3,4,6,7,8-HpCDD			0.00100	0.000828		ug/L		83	70 - 140		
1,2,3,4,6,7,8-HpCDF			0.00100	0.000830		ug/L		83	82 - 122		
1,2,3,4,7,8,9-HpCDF			0.00100	0.000803		ug/L		80	78 - 138		
OCDD			0.00200	0.00159		ug/L		79	78 - 144		
OCDF			0.00200	0.00166		ug/L		83	63 - 170		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	71		20 - 175
13C-2,3,7,8-TCDF	82		22 - 152
13C-1,2,3,7,8-PeCDD	61		21 - 227
13C-1,2,3,7,8-PeCDF	67		21 - 192
13C-2,3,4,7,8-PeCDF	69		13 - 328
13C-1,2,3,4,7,8-HxCDD	57		21 - 193
13C-1,2,3,6,7,8-HxCDD	56		25 - 163

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-668853/2-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 668853

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,4,7,8-HxCDF	63		19 - 202
13C-1,2,3,6,7,8-HxCDF	61		21 - 159
13C-1,2,3,7,8,9-HxCDF	66		17 - 205
13C-2,3,4,6,7,8-HxCDF	66		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	57		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	56		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	63		20 - 186
13C-OCDD	71		13 - 199
13C-OCDF	69		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	108		31 - 191

Lab Sample ID: LCSD 320-668853/3-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 668853

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			0.000200	0.000245		ug/L		122	67 - 158	28	50
2,3,7,8-TCDF			0.000200	0.000286		ug/L		143	75 - 158	41	50
1,2,3,7,8-PeCDD			0.00100	0.000869		ug/L		87	70 - 142	5	50
1,2,3,7,8-PeCDF			0.00100	0.00109		ug/L		109	80 - 134	24	50
2,3,4,7,8-PeCDF			0.00100	0.00116		ug/L		116	68 - 160	27	50
1,2,3,4,7,8-HxCDD			0.00100	0.00110		ug/L		110	70 - 164	27	50
1,2,3,6,7,8-HxCDD			0.00100	0.00112		ug/L		112	76 - 134	28	50
1,2,3,7,8,9-HxCDD			0.00100	0.00109		ug/L		109	64 - 162	25	50
1,2,3,4,7,8-HxCDF			0.00100	0.00118		ug/L		118	72 - 134	33	50
1,2,3,6,7,8-HxCDF			0.00100	0.00115		ug/L		115	84 - 130	31	50
1,2,3,7,8,9-HxCDF			0.00100	0.00105		ug/L		105	78 - 130	23	50
2,3,4,6,7,8-HxCDF			0.00100	0.00104		ug/L		104	70 - 156	23	50
1,2,3,4,6,7,8-HpCDD			0.00100	0.00102		ug/L		102	70 - 140	21	50
1,2,3,4,6,7,8-HpCDF			0.00100	0.00102		ug/L		102	82 - 122	20	50
1,2,3,4,7,8,9-HpCDF			0.00100	0.00101		ug/L		101	78 - 138	23	50
OCDD			0.00200	0.00207		ug/L		104	78 - 144	26	50
OCDF			0.00200	0.00212		ug/L		106	63 - 170	25	50

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	61		20 - 175
13C-2,3,7,8-TCDF	100		22 - 152
13C-1,2,3,7,8-PeCDD	55		21 - 227
13C-1,2,3,7,8-PeCDF	65		21 - 192
13C-2,3,4,7,8-PeCDF	60		13 - 328
13C-1,2,3,4,7,8-HxCDD	69		21 - 193
13C-1,2,3,6,7,8-HxCDD	73		25 - 163
13C-1,2,3,4,7,8-HxCDF	98		19 - 202
13C-1,2,3,6,7,8-HxCDF	104		21 - 159
13C-1,2,3,7,8,9-HxCDF	111		17 - 205
13C-2,3,4,6,7,8-HxCDF	113		22 - 176

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-668853/3-A
Matrix: Water
Analysis Batch: 670020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 668853

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-1,2,3,4,6,7,8-HpCDD	82		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	95		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	110		20 - 186
13C-OCDD	138		13 - 199
13C-OCDF	177		13 - 199

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
37Cl4-2,3,7,8-TCDD	97		31 - 191

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-4

Specialty Organics

Prep Batch: 668853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	1613B	
570-132337-1 - DL	EPBBC_20230322	Total/NA	Water	1613B	
MB 320-668853/1-A	Method Blank	Total/NA	Water	1613B	
LCS 320-668853/2-A	Lab Control Sample	Total/NA	Water	1613B	
LCSD 320-668853/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	

Analysis Batch: 669579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	1613B	668853
MB 320-668853/1-A	Method Blank	Total/NA	Water	1613B	668853

Analysis Batch: 670020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-668853/2-A	Lab Control Sample	Total/NA	Water	1613B	668853
LCSD 320-668853/3-A	Lab Control Sample Dup	Total/NA	Water	1613B	668853

Analysis Batch: 670442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1 - DL	EPBBC_20230322	Total/NA	Water	1613B	668853

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-4

Client Sample ID: EPBBC_20230322

Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	1613B			1006.1 mL	20.0 uL	668853	04/20/23 06:26	BLR	EET SAC
Total/NA	Analysis	1613B		1	1 Sample	1 Sample	669579	04/23/23 09:55	GRB	EET SAC
	Instrument ID: DFS 1									
Total/NA	Prep	1613B	DL		1006.1 mL	20.0 uL	668853	04/20/23 06:26	BLR	EET SAC
Total/NA	Analysis	1613B	DL	5	1 Sample	1 Sample	670442	04/27/23 00:00	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-124227-9

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-040	04-40-49
ANAB	Dept. of Defense ELAP	L4968	01-40-49
ANAB	Dept. of Energy	L4968.01	01-40-49
ANAB	ISO/IEC 17045	L4968	01-40-49
Arizona	State	AZ0708	08-11-42
Arkansas DE3	State	88-06Q1	06-17-42
California	State	48Q7	01-44-49
Colorado	State	CA0009	08-21-42
Florida	NELAP	E87570	06-20-42
Georgia	State	9090	01-4Q-49
Hawaii	State	<cert No.>	01-4Q-49
Illinois	NELAP	400060	02-17-49
Kansas	NELAP	E-10275	10-21-42
Louisiana	NELAP	01Q99	06-20-42
Louisiana (All)	NELAP	01Q99	06-20-42
Maine	State	CA00009	09-19-49
Michigan	State	QQ97	06-01-42
Ne*ada	State	CA00099	07-21-42
New Hav pshire	NELAP	4QQ7	09-18-49
New Jersey	NELAP	CA005	06-20-42
New mork	NELAP	11666	09-01-49
Ohio	State	91454	01-4Q-49
Oregon	NELAP	9090	01-4Q-49
TeYas	NELAP	T1097092QQ-1Q-12	05-21-42
US Fish & x ildlife	US Federal Prograv s	58998	09-20-42
USDA	US Federal Prograv s	P220-18-0042Q	04-48-46
Utah	NELAP	CA000994041-14	04-48-42 W
Virginia	NELAP	960478	02-19-49
x ashington	State	C581	05-05-42
x est Virginia (Dx)	State	QQ20C	14-21-42
x isconsin	State	QQ8409680	08-21-42
x yov ing	State Prograv	8TMS-L	01-48-1QW

WAccreditation/Certification renewal pending - accreditation/certification considered *alid.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-4

Method	Method Description	Protocol	Laboratory
1613B	Dioxins and Furans (HRGC/HRMS)	EPA	EET SAC
1613B	Separatory Funnel (L/L) Extraction with Soxhlet Extraction of Dioxin and Furans	EPA	EET SAC

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-4

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132337-1	EPBBC_20230322	Water	03/22/23 10:20	03/23/23 19:20

Loc: 570
132337

570-132337 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	__1__ of __2__ COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below _____			
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Job / SDG No.:
H&A Project Number : 129095-020-001-06				
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230322	3/22/23	1020	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N														x					Time of Readings 10:20
																										DO (mg/L) 13.66
																										pH 7.55
																										Temp (°C/°F) 10.54°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 3/23/23 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____	
Relinquished by:	Company: H+A	Date/Time: 3/23/23 1600	Received by: EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/28/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E160.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230322	3/22/23	1020	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014596
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Received: [illegible] EC	Date/Time: 3/23/23 1600
Relinquished by: [illegible]	Company: EC	Date/Time: 3/23/23 1920	Received: [illegible] EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/28/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132337-5
Address: 14859 East Clark Avenue,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132337-3)	3/22/23	10:20 Pacific		Water			X				3	See Attached Instructions
												Run past HT

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 14:47			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		2.4°C T-0279

Ver: 06/08/2021

4/28/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212454.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132337-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCl, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT - VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 9:48	EC		3/24/23 0948	EC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212454

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212524.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State Program - California		Job #: 570-132337-4
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/10/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1613B/1613B_Sox_Sep_P (MOD) Standard List w/ Totals	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	2	See QAS, Boeing_w/u to zero

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	3/24/23 15:00	EC	[signature]	3/25/23-910	EETSAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132337-4

Login Number: 132337
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132337-4

Login Number: 132337
List Number: 2
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 03/25/23 10:43 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

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JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132337-5

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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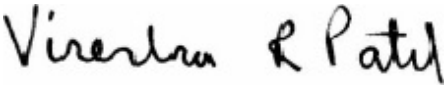
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Revision 1

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-5

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-5

Job ID: 570-132337-5

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132337-5

Comments
No additional comments.

Revision
The report being provided is a revision of the original report sent on 5/12/2023. The report (revision 1) is being revised due to: The clients office requested the full EPA 608.3 list to be reported..

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.9º C, 2.3º C and 2.7º C.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Methods EPA 608 - Pesticides/PCBs - PP list, VOCs-2CVE only (E624), Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units), Weck-Hydrazine: These methods were subcontracted to Weck Laboratories, Inc.. The subcontract laboratory certifications are different from that of the facility issuing the final report.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-5

Method	Method Description	Protocol	Laboratory
Subcontract	EPA 608 - Pesticides/PCBs - PP list	None	Weck Lab
Subcontract	VOCs-2CVE only (E624)	None	Weck Lab
Subcontract	Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units)	None	Weck Lab
Subcontract	Weck-Hydrazine	None	Weck Lab

Protocol References:

None = None

Laboratory References:

Weck Lab = Weck Laboratories, Inc., 14859 East Clark Avenue, City of Industry, CA 917451396

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-5

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132337-1	EPBBC_20230322	Water	03/22/23 10:20	03/23/23 19:20
570-132337-3	TB-20230322-2	Water	03/22/23 10:20	03/23/23 19:20

WECK LABORATORIES, INC.

Certificate of Analysis

FINAL REPORT

Work Orders: 3C24116

Project: 570-132337-5

Attn: Virendra Patel

Client: Eurofins Calscience - Tustin
2841 Dow Avenue, Suite 100
Tustin, CA 92780

Report Date: 6/02/2023
Received Date: 3/24/2023
Turnaround Time: Normal
Phones: (949) 261-1022
Fax: (949) 260-3297
P.O. #: 570-132337-5
Billing Code:

Dear Virendra Patel,

Enclosed are the results of analyses for samples received 3/24/23 with the Chain-of-Custody document. The samples were received in good condition, at 2.4 °C and on ice. All analyses met the method criteria except as noted in the case narrative or in the report with data qualifiers.

Sample Results

Sample: EPBBC_20230323 (570-132337-1) Sampled: 03/22/23 10:20 by Client
3C24116-01 (Water)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C2304 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/28/23 08:02			**Analyst:** RJG	
4,4´-DDD	ND	0.0027	0.050	ug/l	1	04/19/23	
4,4´-DDE	ND	0.0018	0.050	ug/l	1	04/19/23	
4,4´-DDT	ND	0.0050	0.050	ug/l	1	04/19/23	
Aldrin	ND	0.0010	0.050	ug/l	1	04/19/23	
alpha-BHC	ND	0.0011	0.050	ug/l	1	04/19/23	
Aroclor 1016	ND	0.10	1.0	ug/l	1	04/19/23	
Aroclor 1221	ND	0.10	1.0	ug/l	1	04/19/23	
Aroclor 1232	ND	0.10	1.0	ug/l	1	04/19/23	
Aroclor 1242	ND	0.10	1.0	ug/l	1	04/19/23	
Aroclor 1248	ND	0.10	1.0	ug/l	1	04/19/23	
Aroclor 1254	ND	0.10	1.0	ug/l	1	04/19/23	
Aroclor 1260	ND	0.10	1.0	ug/l	1	04/19/23	
beta-BHC	ND	0.0015	0.050	ug/l	1	04/19/23	
Chlordane (tech)	ND	0.10	0.50	ug/l	1	04/19/23	
delta-BHC	ND	0.0019	0.050	ug/l	1	04/19/23	
Dieldrin	ND	0.0017	0.050	ug/l	1	04/19/23	
Endosulfan I	ND	0.0019	0.050	ug/l	1	04/19/23	
Endosulfan II	ND	0.0019	0.050	ug/l	1	04/19/23	
Endosulfan sulfate	ND	0.0013	0.050	ug/l	1	04/19/23	
Endrin	ND	0.0017	0.050	ug/l	1	04/19/23	

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Sample Results

(Continued)

Sample: EPBBC_20230323 (570-132337-1)
3C24116-01 (Water)

Sampled: 03/22/23 10:20 by Client
(Continued)

Analyte	Result	MDL	MRL	Units	Dil	Analyzed	Qualifier
Method: EPA 608.3			**Instr:** GC07				
Batch ID: W3C2304 **Preparation:** EPA 608/L-L SF			**Prepared:** 03/28/23 08:02				**Analyst:** RJG
Endrin aldehyde	ND	0.0050	0.050	ug/l	1	04/19/23	
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l	1	04/19/23	
Heptachlor	ND	0.0023	0.050	ug/l	1	04/19/23	
Heptachlor epoxide	ND	0.0018	0.050	ug/l	1	04/19/23	
Methoxychlor	ND	0.0038	0.050	ug/l	1	04/19/23	
Toxaphene	ND	0.25	2.0	ug/l	1	04/19/23	
Surrogate(s)							
Decachlorobiphenyl	*62%*		*33-133*	*Conc: 0.0610*		*04/19/23*	
Tetrachloro-meta-xylene	*46%*		*32-130*	*Conc: 0.0454*		*04/19/23*	

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Quality Control Results

Chlorinated Pesticides and/or PCBs by GC/ECD

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Blank (W3C2304-BLK1)					**Prepared: 03/28/23 Analyzed: 04/19/23**						
4,4´-DDD	ND	0.0027	0.050	ug/l							
4,4´-DDE	ND	0.0018	0.050	ug/l							
4,4´-DDT	ND	0.0028	0.050	ug/l							
Aldrin	ND	0.0010	0.050	ug/l							
alpha-BHC	ND	0.0011	0.050	ug/l							
Aroclor 1016	ND	0.029	1.0	ug/l							
Aroclor 1221	ND	0.060	1.0	ug/l							
Aroclor 1232	ND	0.083	1.0	ug/l							
Aroclor 1242	ND	0.095	1.0	ug/l							
Aroclor 1248	ND	0.083	1.0	ug/l							
Aroclor 1254	ND	0.040	1.0	ug/l							
Aroclor 1260	ND	0.055	1.0	ug/l							
beta-BHC	ND	0.0015	0.050	ug/l							
Chlordane (tech)	ND	0.043	0.50	ug/l							
delta-BHC	ND	0.0019	0.050	ug/l							
Dieldrin	ND	0.0017	0.050	ug/l							
Endosulfan I	ND	0.0019	0.050	ug/l							
Endosulfan II	ND	0.0019	0.050	ug/l							
Endosulfan sulfate	ND	0.0013	0.050	ug/l							
Endrin	ND	0.0017	0.050	ug/l							
Endrin aldehyde	ND	0.0019	0.050	ug/l							
gamma-BHC (Lindane)	ND	0.0015	0.050	ug/l							
Heptachlor	ND	0.0023	0.050	ug/l							
Heptachlor epoxide	ND	0.0018	0.050	ug/l							
Methoxychlor	ND	0.0038	0.050	ug/l							
Toxaphene	ND	0.085	2.0	ug/l							
Surrogate(s)											
Decachlorobiphenyl	*0.0791*			*ug/l*	*0.100*		*79*	*33-133*			
Tetrachloro-meta-xylene	*0.0557*			*ug/l*	*0.100*		*56*	*32-130*			
LCS (W3C2304-BS1)					**Prepared: 03/28/23 Analyzed: 04/19/23**						
4,4´-DDD	0.186	0.0027	0.050	ug/l	0.200		93	48-130			
4,4´-DDE	0.159	0.0018	0.050	ug/l	0.200		80	54-130			
4,4´-DDT	0.204	0.0028	0.050	ug/l	0.200		102	46-137			
Aldrin	0.142	0.0010	0.050	ug/l	0.200		71	54-130			
alpha-BHC	0.172	0.0011	0.050	ug/l	0.200		86	49-130			
beta-BHC	0.155	0.0015	0.050	ug/l	0.200		77	39-130			
delta-BHC	0.170	0.0019	0.050	ug/l	0.200		85	51-130			
Dieldrin	0.144	0.0017	0.050	ug/l	0.200		72	58-130			
Endosulfan I	0.168	0.0019	0.050	ug/l	0.200		84	57-141			
Endosulfan II	0.160	0.0019	0.050	ug/l	0.200		80	22-171			
Endosulfan sulfate	0.168	0.0013	0.050	ug/l	0.200		84	38-132			
Endrin	0.177	0.0017	0.050	ug/l	0.200		89	51-130			
Endrin aldehyde	0.133	0.0019	0.050	ug/l	0.200		67	18-130			

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www.wecklabs.com

Quality Control Results

(Continued)

Chlorinated Pesticides and/or PCBs by GC/ECD (Continued)

Analyte	Result	MDL	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
LCS (W3C2304-BS1)					**Prepared: 03/28/23 Analyzed: 04/19/23**						
gamma-BHC (Lindane)	0.165	0.0015	0.050	ug/l	0.200		83	43-130			
Heptachlor	0.171	0.0023	0.050	ug/l	0.200		85	43-130			
Heptachlor epoxide	0.166	0.0018	0.050	ug/l	0.200		83	57-132			
Methoxychlor	0.261	0.0038	0.050	ug/l	0.200		130	50-130			
Surrogate(s)											
Decachlorobiphenyl	*0.0989*			*ug/l*	*0.100*		*99*	*33-133*			
Tetrachloro-meta-xylene	*0.0619*			*ug/l*	*0.100*		*62*	*32-130*			
LCS (W3C2304-BS2)					**Prepared: 03/28/23 Analyzed: 04/19/23**						
Aroclor 1016	0.815			ug/l	1.00		82	61-130			
Aroclor 1260	0.694			ug/l	1.00		69	37-130			
Surrogate(s)											
Decachlorobiphenyl	*0.0760*			*ug/l*	*0.100*		*76*	*33-133*			
Tetrachloro-meta-xylene	*0.0633*			*ug/l*	*0.100*		*63*	*32-130*			
LCS Dup (W3C2304-BSD1)					**Prepared: 03/28/23 Analyzed: 04/19/23**						
4,4´-DDD	0.191	0.0027	0.050	ug/l	0.200		96	48-130	3	30	
4,4´-DDE	0.165	0.0018	0.050	ug/l	0.200		83	54-130	4	30	
4,4´-DDT	0.205	0.0028	0.050	ug/l	0.200		102	46-137	0.3	30	
Aldrin	0.149	0.0010	0.050	ug/l	0.200		74	54-130	5	30	
alpha-BHC	0.182	0.0011	0.050	ug/l	0.200		91	49-130	6	30	
beta-BHC	0.162	0.0015	0.050	ug/l	0.200		81	39-130	4	30	
delta-BHC	0.176	0.0019	0.050	ug/l	0.200		88	51-130	4	30	
Dieldrin	0.155	0.0017	0.050	ug/l	0.200		77	58-130	7	30	
Endosulfan I	0.178	0.0019	0.050	ug/l	0.200		89	57-141	6	30	
Endosulfan II	0.165	0.0019	0.050	ug/l	0.200		83	22-171	3	30	
Endosulfan sulfate	0.171	0.0013	0.050	ug/l	0.200		86	38-132	2	30	
Endrin	0.186	0.0017	0.050	ug/l	0.200		93	51-130	5	30	
Endrin aldehyde	0.139	0.0019	0.050	ug/l	0.200		70	18-130	4	30	
gamma-BHC (Lindane)	0.175	0.0015	0.050	ug/l	0.200		88	43-130	6	30	
Heptachlor	0.175	0.0023	0.050	ug/l	0.200		87	43-130	2	30	
Heptachlor epoxide	0.176	0.0018	0.050	ug/l	0.200		88	57-132	6	30	
Methoxychlor	0.246	0.0038	0.050	ug/l	0.200		123	50-130	6	30	
Surrogate(s)											
Decachlorobiphenyl	*0.107*			*ug/l*	*0.100*		*107*	*33-133*			
Tetrachloro-meta-xylene	*0.0682*			*ug/l*	*0.100*		*68*	*32-130*			
LCS Dup (W3C2304-BSD2)					**Prepared: 03/28/23 Analyzed: 04/19/23**						
Aroclor 1016	0.795			ug/l	1.00		80	61-130	3	30	
Aroclor 1260	0.678			ug/l	1.00		68	37-130	2	30	
Surrogate(s)											
Decachlorobiphenyl	*0.0756*			*ug/l*	*0.100*		*76*	*33-133*			
Tetrachloro-meta-xylene	*0.0599*			*ug/l*	*0.100*		*60*	*32-130*			

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Notes and Definitions

Item	Definition
J	Estimated conc. detected <MRL and >MDL.
%REC	Percent Recovery
Dil	Dilution
MDL	Method Detection Limit
MRL	The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. The MRL is also known as Limit of Quantitation (LOQ)
ND	NOT DETECTED at or above the Method Reporting Limit (MRL). If Method Detection Limit (MDL) is reported, then ND means not detected at or above the MDL.
RPD	Relative Percent Difference

Any remaining sample(s) will be disposed of one month from the final report date unless other arrangements are made in advance.

All results are expressed on wet weight basis unless otherwise specified.

All samples collected by Weck Laboratories have been sampled in accordance to laboratory SOP Number MIS002.

Reviewed by:

Rahul R. Nair
Project Manager

DoD-ELAP ANAB #ADE-2882 • DoD-ISO ANAB # • ELAP-CA #1132 • EPA-UCMR #CA00211 • ISO17025 ANAB #L2457.01 • LACSD #10143

This is a complete final report. The information in this report applies to the samples analyzed in accordance with the chain-of-custody document. Weck Laboratories certifies that the test results meet all requirements of TNI unless noted by qualifiers or written in the Case Narrative. This analytical report must be reproduced in its entirety.

14859 Clark Avenue,City of Industry CA, 91745 | Phone: (626) 336-2139 | Fax: (626) 336-2634
www.wecklabs.com

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

3C24116

Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132337-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132337-3)	3/22/23	10:20 Pacific		Water			X				3	See Attached Instructions
												Run past HT
												* VOAs received w/ headspace JB

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by:	Date/Time: 3-24-23 14:47	Company	Received by:	Date/Time: 3-24-23 14:47	Company Weck
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

2.4°C T-0279

Ver: 06/08/2021

ICOC No:
570-212491

Containers

Count	Container Type	Preservative
5	Amber Glass 1 liter - unpreserved	None
6	Voa Vial 40ml - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (EPA 608 - Pesticides/PCBs - PP list)	Level IV package, MDL, EQUIS 5C
1	SUBCONTRACT	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	525.2- 24 hour extraction for Diaznon and Chyloriphrous- level IV package needed.
1	SUBCONTRACT	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Level IV package, MDL, EQUIS 5C
1, 3	SUBCONTRACT	SUB (VOCs-2CVE only (E624))	Level IV package, MDL, EQUIS 5C

WECK LABORATORIES, INC.

Sample Receipt Checklist

Weck WKO: **3C24116**
WKO Logged by: Jerico Bolotano
Samples Checked by: Jerico Bolotano

Date/Time Received: 03/24/23 @ 14:13
# of Samples: 02
Delivered by: Client

	Task	Yes	No	N/A	Comments
COC	COC present at receipt?	☒	☐		
	COC properly completed?	☒	☐		
	COC matches sample labels?	☒	☐		
		☒	☐		
	Project Manager notified?	☐	☐	☒	
Receipt Information	Sample Temperature	4.6°C			
	Samples received on ice?	☒	☐		
	Ice Type (Blue/Wet)	Wet			
	All samples intact?	☒	☐		
	Samples in proper containers?	☒	☐		
	Sufficient sample volume?	☒	☐		
	Samples intact?	☒	☐		
	Received within holding time?	☒	☐		
		☐	☐		
	Project Manager notified?	☐	☐	☒	
Sample Preservation Verification?	Sample labels checked for correct preservation?	☒	☐	☐	
	VOC Headspace: (No) none, If Yes (See comment) 524.2, 524.3, 624.1, 8260, 1666 P/T, LUFT	☐	☒	☐	☐ <6mm/Pea size?
	pH verified upon receipt? Metals <2; H2SO4 pres tests <2; 522<4; TOC <2; 508.1, 525.2<2; 6710B<2; 608.3 5-9	☐	☐	☒	pH paper Lot# 2071882
	Free Chlorine Tested <0.1	☒	☐	☐	Cl Test Strip Lot# 061221E
	O&G pH <2 verified?	☐	☐	☐	pH paper Lot# pH Reading:
	pH adjusted for O&G	☐	☐	☐	Acid Lot# Amt added:
	Project Manager notified?	☐	☐	☐	

PM Comments

Sample Receipt Checklist Prepared by:

Signature: JB Date: 03/24/23

Loc: 570
132337

570-132337 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Job / SDG No.:
H&A Project Number : 129095-020-001-06				
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 – (Total Dissolved) (E903.0/E903, E904, E905)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 – (Total Recoverable) (E903.0/E903, E904, E905)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230322	3/22/23	1020	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N														x					Time of Readings 10:20
																										DO (mg/L) 13.66
																										pH 7.55
																										Temp (°C/°F) 10.54°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 3/23/23 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:
Relinquished by:	Company: H&A	Date/Time: 3/23/23 1600	Received by: EC		Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC		Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

6/8/2023 (Rev. 1)

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12))(SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C)(E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230322	3/22/23	1020	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014596
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Received: [illegible] EC	Date/Time: 3/23/23 1600
Relinquished by: [illegible]	Company: EC	Date/Time: 3/23/23 1920	Received: [illegible] EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132337-5
Address: 14859 East Clark Avenue,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132337-3)	3/22/23	10:20 Pacific		Water			X				3	See Attached Instructions
												Run past HT

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 14:47			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		2.4°C T-0279

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212454.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132337-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									- VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-21-23 9:48	EC		3/24/23 0848	ET
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212454

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132337-5

Login Number: 132337
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 9:22:00 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132337-6

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

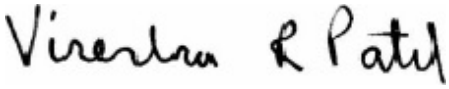
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132337-6

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132337-6

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.9º C, 2.3º C and 2.7º C.

Receipt Exceptions

The number of containers for the following sample did not match the information listed on the Chain-of-Custody (COC): EPBBC_20230322 (570-132337-1). Received 45 containers, while the COC lists 47.

The sample ID for the following sample did not match the information listed on the Chain-of-Custody (COC): TB-20230322-1 (570-132337-2). The container label lists TB_20230322-1, while the COC lists TB_20230322-2 (collection date/time matched).

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013): This method was subcontracted to Aquatic Bioassay & Consulting. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-6

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-6

Method	Method Description	Protocol	Laboratory
EPA	Bioassay	EPA	Aquatic

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Aquatic = Aquatic Bioassay & Consulting, 29 North Olive Street, Ventura, CA 93001

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-6

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132337-1	EPBBC_20230322	Water	03/22/23 10:20	03/23/23 19:20

aquatic bioassay & consulting laboratories, inc

April 6, 2023

Mr. Virendra Patel
Eurofins Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1432

Dear Mr. Patel:

We are pleased to present the enclosed bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms EPA-821-R-02-013.* " Results were as follows:*

CLIENT:	Eurofins Calscience
SAMPLE I.D.:	EPBBC_20230322
DATE RECEIVED:	23 March - 2023
ABC LAB. NO.:	CSE0323.235

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

IWC = 100.00%

TST RESULT

SURVIVAL = PASS % EFFECT = 0.00 %

REPRODUCTION = PASS % EFFECT = -20.55 %

Yours very truly,

Scott Johnson
Laboratory Director

*Note: The chronic survival TST analysis is not available for ceriodaphnia dubia.

CETIS Summary Report

Report Date: 06 Apr-23 12:43 (p 1 of 1)
Test Code/ID: CSE0323.235 / 19-8660-7777

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	06-4069-3689	Test Type:	Reproduction-Survival (7d)	Analyst:			
Start Date:	23 Mar-23 15:21	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water		
Ending Date:	30 Mar-23 14:52	Species:	Ceriodaphnia dubia	Brine:	Not Applicable		
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO	Age:	<24
Sample ID:	09-0898-6836	Code:	CSE0323.235	Project:			
Sample Date:	22 Mar-23 10:20	Material:	Sample Water	Source:	Bioassay Report		
Receipt Date:	23 Mar-23 14:05	CAS (PC):		Station:	EPBBC_20230322		
Sample Age:	29h (4.3 °C)	Client:	Eurofins Calscience				

SIngle Comparison Summary

Analysis ID	Endpoint	Comparison Method	P-Value	Comparison Result	S
17-6723-1490	7d Survival Rate	Fisher Exact Test	1.0000	100% passed 7d survival rate	1
06-1162-2002	Reproduction	TST-Welch's t Test	<1.0E-05	100% passed reproduction	1

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
17-6723-1490	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
06-1162-2002	Reproduction	Control Resp	23.85	15	<<	Yes	Passes Criteria

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	20	23.85	21.61	26.09	10	32	1.072	4.793	20.10%	0.00%
100		20	28.75	26.19	31.31	13	35	1.224	5.476	19.05%	-20.55%

7d Survival Rate Detail — MD5: E2FCA10CAEB5BD33B061F6901431A2E1

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Reproduction Detail — MD5: F73D4B2831A5BF38160B683798663EAB

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	25	23	10	23	23	27	20	23	22	17
		23	24	31	26	32	26	27	29	23	23
100		35	33	35	32	21	28	13	34	28	32
		30	35	29	25	22	28	26	30	31	28

7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	06-1162-2002	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:42	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	04 Apr-23 12:40	**MD5 Hash:**	F73D4B2831A5BF38160B683798663EAB	**Editor ID:**	009-702-627-3
Batch ID:	06-4069-3689	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	23 Mar-23 15:21	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	30 Mar-23 14:52	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	09-0898-6836	**Code:**	CSE0323.235	**Project:**	
Sample Date:	22 Mar-23 10:20	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	23 Mar-23 14:05	**CAS (PC):**		**Station:**	EPBBC_20230322
Sample Age:	29h (4.3 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	TST_b	Comparison Result
Untransformed	C*b < T	0.75	100% passed reproduction endpoint

TST-Welch's t Test

Control	vs	Conc-%	df	Test Stat	Critical	P-Type	P-Value	Decision(α:20%)
Negative Control		100*	32	7.416	0.853	CDF	<1.0E-05	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	23.85	15	<<	Yes	Passes Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	240.1	240.1	1	9.067	0.0046	Significant Effect
Error	1006.3	26.4816	38			
Total	1246.4		39			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Levene Equality of Variance Test	0.4326	7.353	0.5147	Equal Variances
	Mod Levene Equality of Variance Test	0.4663	7.353	0.4988	Equal Variances
	Variance Ratio F Test	1.305	3.432	0.5673	Equal Variances
Distribution	Anderson-Darling A2 Test	1.184	3.878	0.0042	Non-Normal Distribution
	D'Agostino Kurtosis Test	2.164	2.576	0.0305	Normal Distribution
	D'Agostino Skewness Test	2.848	2.576	0.0044	Non-Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	12.8	9.21	0.0017	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.2086	0.1617	0.0001	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.9085	0.9236	0.0034	Non-Normal Distribution

Reproduction Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	23.85	21.61	26.09	23	10	32	1.072	20.10%	0.00%
100		20	28.75	26.19	31.31	29.67	13	35	1.224	19.05%	-20.55%

Reproduction Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	25	23	10	23	23	27	20	23	22	17
		23	24	31	26	32	26	27	29	23	23
100		35	33	35	32	21	28	13	34	28	32
		30	35	29	25	22	28	26	30	31	28

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	06-1162-2002	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:42	**Analysis:**	Parametric Bioequivalence-Two Sample	**Status Level:**	1
Edit Date:	04 Apr-23 12:40	**MD5 Hash:**	F73D4B2831A5BF38160B683798663EAB	**Editor ID:**	009-702-627-3

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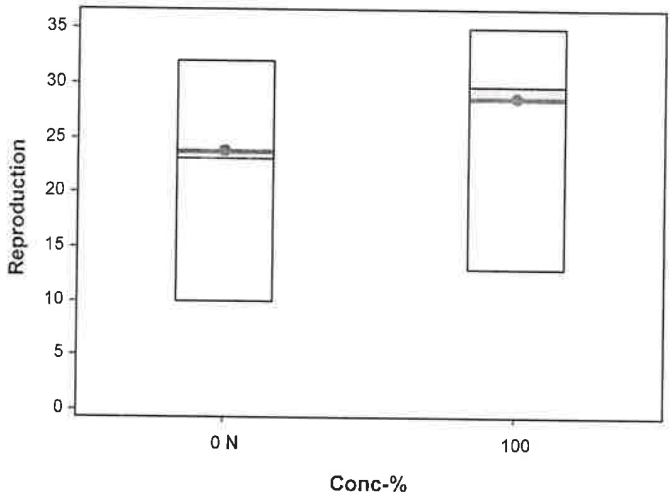
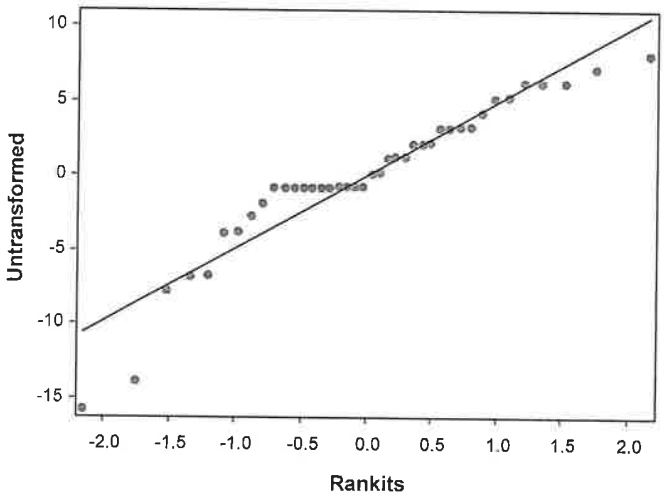




CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	17-6723-1490	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:42	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	04 Apr-23 12:40	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	009-702-627-3
Batch ID:	06-4069-3689	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	23 Mar-23 15:21	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	30 Mar-23 14:52	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	09-0898-6836	**Code:**	CSE0323.235	**Project:**	
Sample Date:	22 Mar-23 10:20	**Material:**	Sample Water	**Source:**	Bioassay Report
Receipt Date:	23 Mar-23 14:05	**CAS (PC):**		**Station:**	EPBBC_20230322
Sample Age:	29h (4.3 °C)	**Client:**	Eurofins Calscience		

Data Transform	Alt Hyp	Comparison Result
Untransformed	C > T	100% passed 7d survival rate endpoint

Fisher Exact Test

Control	vs	Conc-%	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		100	1.0000	Exact	1.0000	Non-Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-%	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	20	0	20	1.0000	0.0000	0.00%
100		20	0	20	1.0000	0.0000	0.00%

7d Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

7d Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

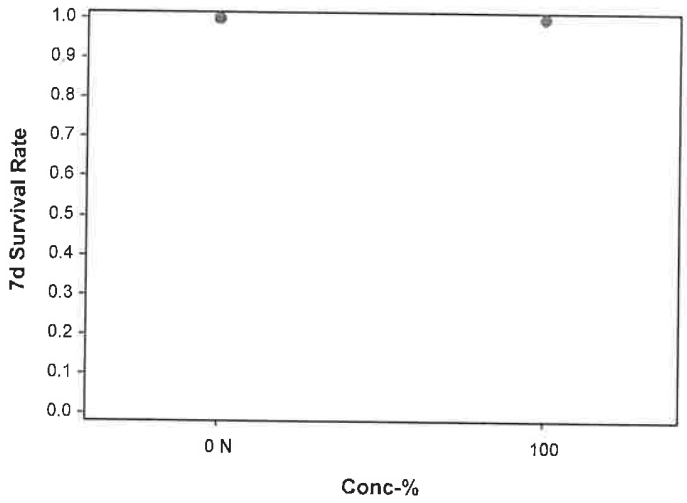
7d Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
100		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Analysis ID:	17-6723-1490	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:42	**Analysis:**	Single 2x2 Contingency Table	**Status Level:**	1
Edit Date:	04 Apr-23 12:40	**MD5 Hash:**	E2FCA10CAEB5BD33B061F6901431A2E1	**Editor ID:**	009-702-627-3

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	06-4069-3689	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**		
Start Date:	23 Mar-23 15:21	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water	
Ending Date:	30 Mar-23 14:52	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable	
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO	**Age:** <24
Sample ID:	09-0898-6836	**Code:**	CSE0323.235	**Project:**		
Sample Date:	22 Mar-23 10:20	**Material:**	Sample Water	**Source:**	Bioassay Report	
Receipt Date:	23 Mar-23 14:05	**CAS (PC):**		**Station:**	EPBBC_20230322	
Sample Age:	29h (4.3 °C)	**Client:**	Eurofins Calscience			

Alkalinity (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	60	60	60	60	60	0	0	0.00%	0
100		8	164	164	164	164	164	0	0	0.00%	0
Overall		16	112	83.38	140.6	60	164	13.43	53.71	47.95%	0 (0%)

Conductivity-µmhos

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	376.5	372.8	380.2	370	383	0.555	4.44	1.18%	0
100		8	871.6	865.8	877.5	862	882	0.8736	6.989	0.80%	0
Overall		16	624.1	487.8	760.3	370	882	63.94	255.7	40.98%	0 (0%)

Dissolved Oxygen-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.838	7.535	8.14	7	8.2	0.04529	0.3623	4.62%	0
100		8	7.763	7.531	7.994	7.1	8	0.03468	0.2774	3.57%	0
Overall		16	7.8	7.633	7.967	7	8.2	0.07853	0.3141	4.03%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
100		8	240	240	240	240	240	0	0	0.00%	0
Overall		16	160	116	204	80	240	20.66	82.62	51.64%	0 (0%)

pH-Units

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	8.038	7.994	8.081	8	8.1	0.00647	0.05176	0.64%	0
100		8	8.013	7.959	8.066	7.9	8.1	0.008011	0.06409	0.80%	0
Overall		16	8.025	7.994	8.056	7.9	8.1	0.01443	0.05774	0.72%	0 (0%)

Temperature-°C

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
100		8	24.01	23.98	24.04	24	24.1	0.004414	0.03531	0.15%	0
Overall		16	24.01	23.99	24.02	24	24.1	0.00625	0.025	0.10%	0 (0%)

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/2023	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8608	Lab Contact: Virendra Patel (714) 895-5494	Carrier: ☑ Hand delivered by H&A w/ this copy of the COC	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below ____			Walk-In Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y/N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA *	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
235 EPBBC_20230322	3/22/23	1020	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Temp. deg. C = 4.8 °C
Add correction factor = +0.5 C
Chlorine (mg/L) = <0.1
NH3 (mg/L) = <0.1

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ Return To Client ☐ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by:	Company: H+A 1405	Date/Time: 3/23/2023	Receiv	Date/Time: 3-23-23 1405
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:
Relinquished by:	Company:	Date/Time:	Receiv	Date/Time:

Form No. CA-C-WI-045, Rev. 1.2, dated 1/9/2018

SAP COC 2019/2020 VERSION 3

4/12/2023

aquatic bioassay & consulting laboratories, inc

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 21 March - 2023

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 10.00 ug/l

EC25 = 18.33 ug/l
EC50 = 26.67 ug/l

ENDPOINT: REPRODUCTION

NOEC = 5.00 ug/l

IC25 = 6.63 ug/l
IC50 = 8.45 ug/l

Yours very truly,

Scott Johnson
Laboratory Director

CETIS Summary Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Batch ID:	13-3375-5897	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	21 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	28 Mar-23 14:05	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	03-4411-3507	**Code:**	CER032123	**Project:**	REF TOX
Sample Date:	21 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Multiple Comparison Summary

Analysis ID	Endpoint	Comparison Method	✓	NOEL	LOEL	TOEL	PMSD	S
14-9937-9653	7d Survival Rate	Fisher Exact/Bonferroni-Holm Test		10	30	17.32	---	1
02-6188-0498	Reproduction	Steel Many-One Rank Sum Test	✓	5	10	7.071	12.9%	1

Point Estimate Summary

Analysis ID	Endpoint	Point Estimate Method	✓	Level	µg/L	95% LCL	95% UCL	S
05-0363-9181	7d Survival Rate	Linear Interpolation (ICPIN)		EC15	15	13.33	20	1
				EC20	16.67	14.44	23.33	
				EC25	18.33	15.56	26.67	
				EC40	23.33	18.89	34	
				EC50	26.67	21.11	37.5	
08-0930-0440	Reproduction	Linear Interpolation (ICPIN)	✓	IC15	5.896	5.417	6.089	1
			✓	IC20	6.261	5.815	6.452	
			✓	IC25	6.626	6.225	6.819	
			✓	IC40	7.722	7.388	7.929	
			✓	IC50	8.452	8.156	8.664	

Test Acceptability

				TAC Limits			
Analysis ID	Endpoint	Attribute	Test Stat	Lower	Upper	Overlap	Decision
05-0363-9181	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
14-9937-9653	7d Survival Rate	Control Resp	1	0.8	<<	Yes	Passes Criteria
02-6188-0498	Reproduction	Control Resp	25.7	15	<<	Yes	Passes Criteria
08-0930-0440	Reproduction	Control Resp	25.7	15	<<	Yes	Passes Criteria
02-6188-0498	Reproduction	PMSD	0.1292	0.13	0.47	Yes	Below Criteria

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.00%
30		10	0.4000	0.0306	0.7694	0.0000	1.0000	0.1633	0.5164	129.10%	60.00%
50		10	0.1000	-0.1262	0.3262	0.0000	1.0000	0.1000	0.3162	316.23%	90.00%

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	%Effect
0	N	10	25.7	23.85	27.55	21	30	0.8172	2.584	10.06%	0.00%
3		10	23.9	22.49	25.31	20	27	0.6227	1.969	8.24%	7.00%
5		10	26.1	24.47	27.73	22	31	0.7219	2.283	8.75%	-1.56%
10		10	7.4	6.175	8.625	5	11	0.5416	1.713	23.14%	71.21%
30		10	3.2	-0.3656	6.766	0	15	1.576	4.984	155.76%	87.55%
50		10	1.4	-1.767	4.567	0	14	1.4	4.427	316.23%	94.55%

Ceriodaphnia 7-d Survival and Reproduction Test
Aquatic Bioassay & Consulting Labs, Inc.

7d Survival Rate Detail

MD5: F4B702ADEF230AEDBE9418B3CD886DE2

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

Reproduction Detail

MD5: 983E619D3592AAD83E9946B3BFA7BC58

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

CETIS Analytical Report

Report Date: 06 Apr-23 12:25 (p 1 of 2)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	02-6188-0498	Endpoint:	Reproduction	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	Nonparametric-Control vs Treatments	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	983E619D3592AAD83E9946B3BFA7BC58	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units	MSDu	PMSD
Untransformed	C > T	5	10	7.071	---	3.321	12.92%

Steel Many-One Rank Sum Test

Control	vs	Conc-µg/L	df	Test Stat	Critical	Ties	P-Type	P-Value	Decision(α:5%)
Negative Control		3	18	82.5	75	4	CDF	0.1507	Non-Significant Effect
		5	18	112	75	2	CDF	0.9455	Non-Significant Effect
		10*	18	55	75	0	CDF	0.0004	Significant Effect
		30*	18	55	75	0	CDF	0.0004	Significant Effect
		50*	18	55	75	0	CDF	0.0004	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	25.7	15	<<	Yes	Passes Criteria
PMSD	0.1292	0.13	0.47	Yes	Below Criteria

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	6979.88	1395.98	5	132.6	<1.0E-05	Significant Effect
Error	568.3	10.5241	54			
Total	7548.18		59			

ANOVA Assumptions Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variance	Bartlett Equality of Variance Test	16.85	15.09	0.0048	Unequal Variances
	Levene Equality of Variance Test	1.972	3.377	0.0977	Equal Variances
	Mod Levene Equality of Variance Test	0.6306	3.377	0.6771	Equal Variances
Distribution	Anderson-Darling A2 Test	2.812	3.878	<1.0E-05	Non-Normal Distribution
	D'Agostino Kurtosis Test	4.038	2.576	5.4E-05	Non-Normal Distribution
	D'Agostino Skewness Test	5.011	2.576	<1.0E-05	Non-Normal Distribution
	D'Agostino-Pearson K2 Omnibus Test	41.42	9.21	<1.0E-05	Non-Normal Distribution
	Kolmogorov-Smirnov D Test	0.1629	0.1331	0.0004	Non-Normal Distribution
	Shapiro-Wilk W Normality Test	0.818	0.9459	<1.0E-05	Non-Normal Distribution

Reproduction Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	25.7	23.85	27.55	25.5	21	30	0.8172	10.06%	0.00%
3		10	23.9	22.49	25.31	23.2	20	27	0.6227	8.24%	7.00%
5		10	26.1	24.47	27.73	26	22	31	0.7219	8.75%	-1.56%
10		10	7.4	6.175	8.625	7	5	11	0.5416	23.14%	71.21%
30		10	3.2	-0.3656	6.766	0	0	15	1.576	155.76%	87.55%
50		10	1.4	-1.767	4.567	0	0	14	1.4	316.23%	94.55%

CETIS Analytical Report

Report Date: 06 Apr-23 12:25 (p 2 of 2)
Test Code/ID: CER032123 / 15-8894-7655

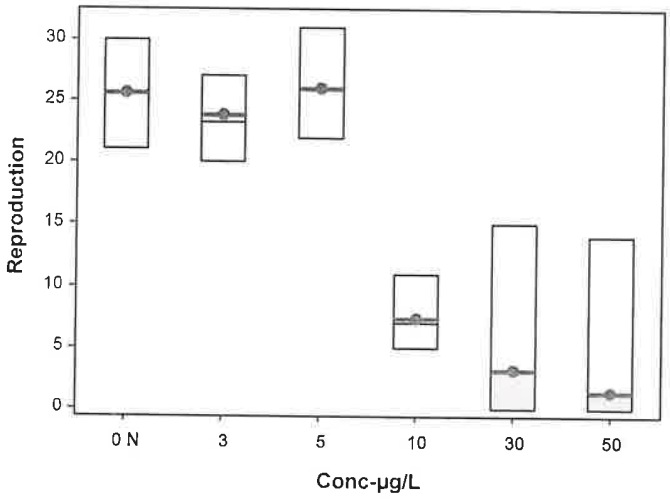
Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

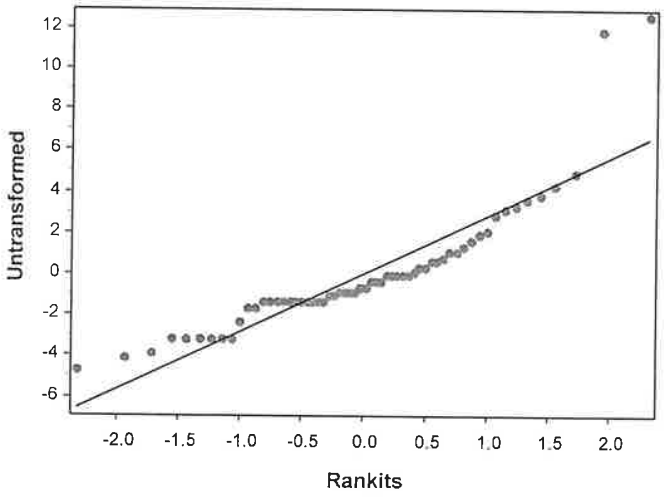
Analysis ID:	02-6188-0498	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Nonparametric-Control vs Treatments	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	983E619D3592AAD83E9946B3BFA7BC58	**Editor ID:**	009-702-627-3

Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

Graphics





CETIS Analytical Report

Report Date: 06 Apr-23 12:26 (p 1 of 4)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-0363-9181	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	F4B702ADEF230AEDBE9418B3CD886DE	**Editor ID:**	009-702-627-3
Batch ID:	13-3375-5897	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	21 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	28 Mar-23 14:05	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	03-4411-3507	**Code:**	CER032123	**Project:**	REF TOX
Sample Date:	21 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	0	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
EC15	15	13.33	20
EC20	16.67	14.44	23.33
EC25	18.33	15.56	26.67
EC40	23.33	18.89	34
EC50	26.67	21.11	37.5

7d Survival Rate Summary

			Calculated Variate(A/B)							Isotonic Variate	
Conc-µg/L	Code	Count	Mean	Median	Min	Max	CV%	%Effect	ΣA/ΣB	Mean	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	0.00%	0.00%	10/10	1.0000	0.00%
30		10	0.4000	0.0000	0.0000	1.0000	129.10%	60.00%	4/10	0.4000	60.00%
50		10	0.1000	0.0000	0.0000	1.0000	316.23%	90.00%	1/10	0.1000	90.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

7d Survival Rate Binomials

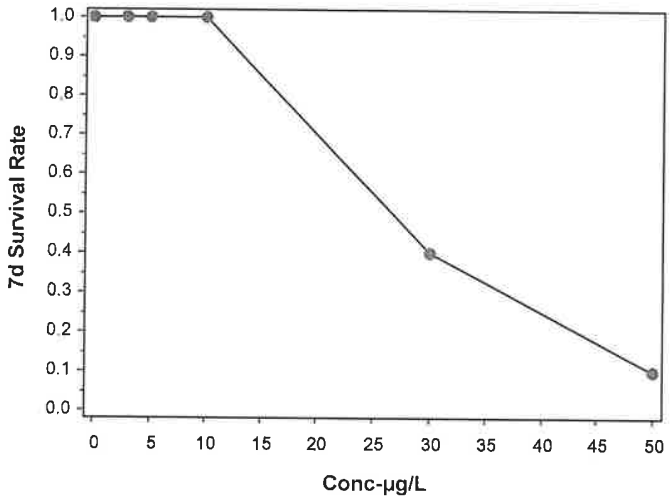
Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	05-0363-9181	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	F4B702ADEF230AEDBE9418B3CD886DE	**Editor ID:**	009-702-627-3

Graphics



CETIS Analytical Report

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	08-0930-0440	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	983E619D3592AAD83E9946B3BFA7BC58	**Editor ID:**	009-702-627-3
Batch ID:	13-3375-5897	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	21 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	28 Mar-23 14:05	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	03-4411-3507	**Code:**	CER032123	**Project:**	REF TOX
Sample Date:	21 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	49588	280	Yes	Two-Point Interpolation

Test Acceptability Criteria

		TAC Limits			
Attribute	**Test Stat**	**Lower**	**Upper**	**Overlap**	**Decision**
Control Resp	25.7	15	<<	Yes	Passes Criteria

Point Estimates

Level	µg/L	95% LCL	95% UCL
IC15	5.896	5.417	6.089
IC20	6.261	5.815	6.452
IC25	6.626	6.225	6.819
IC40	7.722	7.388	7.929
IC50	8.452	8.156	8.664

Reproduction Summary

			Calculated Variate						Isotonic Variate	
Conc-µg/L	**Code**	**Count**	**Mean**	**Median**	**Min**	**Max**	**CV%**	**%Effect**	**Mean**	**%Effect**
0	N	10	25.7	25.5	21	30	10.06%	0.00%	25.7	0.00%
3		10	23.9	23.2	20	27	8.24%	7.00%	25	2.72%
5		10	26.1	26	22	31	8.75%	-1.56%	25	2.72%
10		10	7.4	7	5	11	23.14%	71.21%	7.4	71.21%
30		10	3.2	0	0	15	155.76%	87.55%	3.2	87.55%
50		10	1.4	0	0	14	316.23%	94.55%	1.4	94.55%

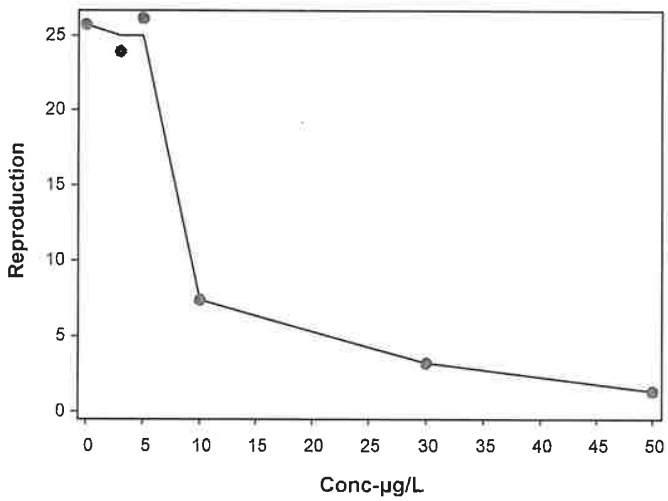
Reproduction Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	24	26	27	25	25	26	29	30	24	21
3		20	25	26	27	23	23	24	23	23	25
5		22	26	28	25	26	26	31	26	25	26
10		5	8	8	6	7	9	7	7	6	11
30		6	4	0	0	0	15	0	0	0	7
50		0	0	0	0	0	14	0	0	0	0

Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	08-0930-0440	**Endpoint:**	Reproduction	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	Linear Interpolation (ICPIN)	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	983E619D3592AAD83E9946B3BFA7BC58	**Editor ID:**	009-702-627-3

Graphics



CETIS Analytical Report

Report Date: 06 Apr-23 12:26 (p 1 of 2)
Test Code/ID: CER032123 / 15-8894-7655

Ceriodaphnia 7-d Survival and Reproduction Test

Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	14-9937-9653	Endpoint:	7d Survival Rate	CETIS Version:	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	Analysis:	STP 2xK Contingency Tables	Status Level:	1
Edit Date:	04 Apr-23 12:14	MD5 Hash:	F4B702ADEF230AEDBE9418B3CD886DE	Editor ID:	009-702-627-3
Batch ID:	13-3375-5897	Test Type:	Reproduction-Survival (7d)	Analyst:	
Start Date:	21 Mar-23 14:30	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Laboratory Water
Ending Date:	28 Mar-23 14:05	Species:	Ceriodaphnia dubia	Brine:	Not Applicable
Test Length:	7d	Taxon:	Branchiopoda	Source:	Aquatic Biosystems, CO Age: <24
Sample ID:	03-4411-3507	Code:	CER032123	Project:	REF TOX
Sample Date:	21 Mar-23 14:30	Material:	Copper chloride	Source:	Reference Toxicant
Receipt Date:		CAS (PC):		Station:	REF TOX
Sample Age:	---	Client:	ABC Labs		

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	Tox Units
Untransformed	C > T	10	30	17.32	---

Fisher Exact/Bonferroni-Holm Test

Control	vs	Conc-µg/L	Test Stat	P-Type	P-Value	Decision(α:5%)
Negative Control		3	1.0000	Exact	1.0000	Non-Significant Effect
		5	1.0000	Exact	1.0000	Non-Significant Effect
		10	1.0000	Exact	1.0000	Non-Significant Effect
		30*	0.0054	Exact	0.0217	Significant Effect
		50*	0.0001	Exact	0.0003	Significant Effect

Test Acceptability Criteria

		TAC Limits			
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	<<	Yes	Passes Criteria

7d Survival Rate Frequencies

Conc-µg/L	Code	NR	R	NR + R	Prop NR	Prop R	%Effect
0	N	10	0	10	1.0000	0.0000	0.00%
3		10	0	10	1.0000	0.0000	0.00%
5		10	0	10	1.0000	0.0000	0.00%
10		10	0	10	1.0000	0.0000	0.00%
30		4	6	10	0.4000	0.6000	60.00%
50		1	9	10	0.1000	0.9000	90.00%

7d Survival Rate Summary

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	N	10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
3		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
5		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
10		10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
30		10	0.4000	0.0306	0.7694	0.0000	0.0000	1.0000	0.1633	129.10%	60.00%
50		10	0.1000	0.0000	0.3262	0.0000	0.0000	1.0000	0.1000	316.23%	90.00%

7d Survival Rate Detail

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
10		1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
30		1.0000	1.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	1.0000
50		0.0000	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000

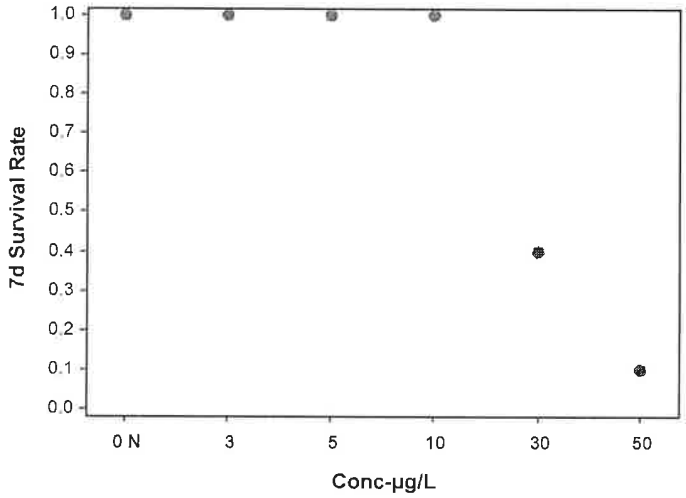
Ceriodaphnia 7-d Survival and Reproduction Test — Aquatic Bioassay & Consulting Labs, Inc.

Analysis ID:	14-9937-9653	**Endpoint:**	7d Survival Rate	**CETIS Version:**	CETISv2.1.4
Analyzed:	04 Apr-23 12:18	**Analysis:**	STP 2xK Contingency Tables	**Status Level:**	1
Edit Date:	04 Apr-23 12:14	**MD5 Hash:**	F4B702ADEF230AEDBE9418B3CD886DE	**Editor ID:**	009-702-627-3

7d Survival Rate Binomials

Conc-µg/L	Code	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Rep 6	Rep 7	Rep 8	Rep 9	Rep 10
0	N	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
3		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
5		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
10		1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1	1/1
30		1/1	1/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	1/1
50		0/1	0/1	0/1	0/1	0/1	1/1	0/1	0/1	0/1	0/1

Graphics



CETIS Measurement Report

Ceriodaphnia 7-d Survival and Reproduction Test — **Aquatic Bioassay & Consulting Labs, Inc.**

Batch ID:	13-3375-5897	**Test Type:**	Reproduction-Survival (7d)	**Analyst:**	
Start Date:	21 Mar-23 14:30	**Protocol:**	EPA/821/R-02-013 (2002)	**Diluent:**	Laboratory Water
Ending Date:	28 Mar-23 14:05	**Species:**	Ceriodaphnia dubia	**Brine:**	Not Applicable
Test Length:	7d	**Taxon:**	Branchiopoda	**Source:**	Aquatic Biosystems, CO **Age:** <24
Sample ID:	03-4411-3507	**Code:**	CER032123	**Project:**	REF TOX
Sample Date:	21 Mar-23 14:30	**Material:**	Copper chloride	**Source:**	Reference Toxicant
Receipt Date:		**CAS (PC):**		**Station:**	REF TOX
Sample Age:	---	**Client:**	ABC Labs		

Alkalinity (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	61.25	59.31	63.19	60	65	0.2893	2.315	3.78%	0
50		8	60	60	60	60	60	0	0	0.00%	0
Overall		16	60.62	59.71	61.54	60	65	0.427	1.708	2.82%	0 (0%)

Conductivity-µmhos

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	376.2	371	381.5	370	387	0.7785	6.228	1.66%	0
3		8	369.2	368.7	369.8	368	370	0.08839	0.7071	0.19%	0
5		8	375.1	366.4	383.9	369	394	1.312	10.49	2.80%	0
10		8	374.5	366.5	382.5	367	390	1.203	9.621	2.57%	0
30		8	375.2	367.3	383.2	367	391	1.191	9.528	2.54%	0
50		8	375.6	367.7	383.6	365	391	1.191	9.531	2.54%	0
Overall		48	374.3	371.9	376.7	365	394	1.196	8.286	2.21%	0 (0%)

Dissolved Oxygen-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.825	7.529	8.121	7	8.2	0.04419	0.3536	4.52%	0
3		8	7.763	7.491	8.034	7	8.1	0.04061	0.3249	4.19%	0
5		8	7.725	7.469	7.981	7	8	0.03824	0.3059	3.96%	0
10		8	7.688	7.449	7.926	7	7.9	0.03563	0.285	3.71%	0
30		8	7.688	7.445	7.93	7	7.9	0.03625	0.29	3.77%	0
50		8	7.688	7.445	7.93	7	7.9	0.03625	0.29	3.77%	0
Overall		48	7.729	7.643	7.815	7	8.2	0.04283	0.2968	3.84%	0 (0%)

Hardness (CaCO3)-mg/L

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	80	80	80	80	80	0	0	0.00%	0
50		8	99	99	99	99	99	0	0	0.00%	0
Overall		16	89.5	84.27	94.73	80	99	2.453	9.812	10.96%	0 (0%)

pH-Units

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	7.975	7.901	8.049	7.8	8.1	0.01108	0.08864	1.11%	0
3		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
5		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
10		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
30		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
50		8	7.988	7.934	8.041	7.9	8.1	0.008011	0.06409	0.80%	0
Overall		48	7.985	7.966	8.004	7.8	8.1	0.009411	0.0652	0.82%	0 (0%)

Temperature-°C

Conc-µg/L	Code	Count	Mean	95% LCL	95% UCL	Min	Max	Std Err	Std Dev	CV%	QA Count
0	N	8	24	24	24	24	24	0	0	0.00%	0
3		8	24	24	24	24	24	0	0	0.00%	0
5		8	24	24	24	24	24	0	0	0.00%	0
10		8	24	24	24	24	24	0	0	0.00%	0
30		8	24	24	24	24	24	0	0	0.00%	0
50		8	24	24	24	24	24	0	0	0.00%	0
Overall		48	24	24	24	24	24	0	0	0.00%	0 (0%)

Loc: 570
132337

570-132337 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Job / SDG No.:
H&A Project Number : 129095-020-001-06				
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230322	3/22/23	1020	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N														x					

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #
Time of Readings 10:20
DO (mg/L) 13.66
pH 7.55
Temp (°C/°F) 10.54°C
TRC (mg/L)
Checked by: MMD
Date/Time: 3/23/23 1300

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other

								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd:	Corr'd:	Therm ID No.:
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Received by: EC		Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC		Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:		Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/12/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (CaMg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (CaMg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230322	3/22/23	1020	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014596
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Received: [illegible] EC	Date/Time: 3/23/23 1600
Relinquished by: [illegible]	Company: EC	Date/Time: 3/23/23 1920	Received: [illegible] EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/12/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132337-5
Address: 14859 East Clark Avenue,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL; B - NaOH; C - Zn Acetate; D - Nitric Acid; E - NaHSO4; F - MeOH; G - Amchlor; H - Ascorbic Acid; I - Ice; J - DI Water; K - EDTA; L - EDA; M - Hexane; N - None; O - AsNaO2; P - Na2O4S; Q - Na2SO3; R - Na2S2O3; S - H2SO4; T - TSP Dodecahydrate; U - Acetone; V - MCAA; W - pH 4-5; Y - Trizma; Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132337-3)	3/22/23	10:20 Pacific		Water			X				3	See Attached Instructions
												Run past HT

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 14:47			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		2.4°C T-0279

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212454.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132337-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									- VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 9:48	EC		3/24/23 0948	EC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212454

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132337-6

Login Number: 132337
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 4/12/2023 9:07:29 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132337-7

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Eurofins Calscience

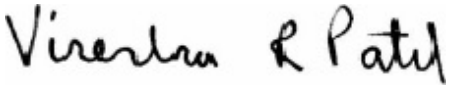
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-7

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-7

Job ID: 570-132337-7

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132337-7

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.9º C, 2.3º C and 2.7º C.

Receipt Exceptions

The number of containers for the following sample did not match the information listed on the Chain-of-Custody (COC): EPBBC_20230322 (570-132337-1). Received 45 containers, while the COC lists 47.

The sample ID for the following sample did not match the information listed on the Chain-of-Custody (COC): TB-20230322-1 (570-132337-2). The container label lists TB_20230322-1, while the COC lists TB_20230322-2 (collection date/time matched). The client was contacted, and the lab was instructed to <EXPLANATION_REQUIRED>.

Lab Admin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Asbestos 100.2 - "Wastewater" matrix: This method was subcontracted to EMSL Analytical Inc - LA Testing - Pasadena. The subcontract laboratory certification is different from that of the facility issuing the final report.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-7

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-7

Method	Method Description	Protocol	Laboratory
100.2	EPA 100.2 Asbestos in Drinking Water	EPA	EMSL-LA

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EMSL-LA = EMSL Analytical Inc - LA Testing - Pasadena, 520 Mission Street, South Pasadena, CA 91030

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-7

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132337-1	EPBBC_20230322	Water	03/22/23 10:20	03/23/23 19:20

LA Testing
520 Mission Street South Pasadena, CA 91030
Phone/Fax: (323) 254-9960 / (323) 254-9982
http://www.LATesting.com / pasadenalab@latesting.com

LA Testing Order ID: 322307956
Customer ID: 32CALS51
Customer PO:
Project ID:

Attn: Virendra Patel
Eurofins Calscience, Inc.
2841 Dow Ave, Suite 100
Tustin, CA 92780

Phone: (714) 895-5494
Fax: (714) 894-7501
Received: 03/28/2023
Analyzed: 04/09/2023

Proj: 570-212694.1 | 570-132337-7 | Boeing SSFL ISRA and BMP

Test Report: Determination of Asbestos Structures ≥ 0.5 µm & > 10µm in Water Performed by the 100.2 Method (EPA 600/R-94/134)

Sample ID Client / EMSL	Sample Filtration Date/Time	Original Sample Vol. Filtered (ml)	Effective Filter Area (mm^2)	Area Analyzed (mm^2)	ASBESTOS					
						Asbestos Types	Fibers Detected	Analytical Sensitivity	Concentration	Confidence Limits
								MFL (million fibers per liter)		
EPBBC_20230323 (570-132337-1) 322307956-0001	3/29/2023 03:00 PM	0.10	1288	0.2540	≥ 0.5 µm	None Detected	ND	51.00	<51.00	0.00 - 190.00
					> 10 µm only	None Detected	ND	51.00	<51.00	0.00 - 190.00

Collection Date/Time: *03/22/2023 10:20 AM*

Sample ozonated prior to analysis due to lab receipt time exceeding 48hr method hold time.

Analyst(s)
Sherrie Ahmad (1)

Jerry Drapala Ph.D, Laboratory Manager
or Other Approved Signatory

Any questions please contact Jerry Drapala.

Initial report from: 04/09/2023 18:47:24

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Estimation of uncertainty is available on request. Sample collection and containers provided by the client, acceptable bottle blank level is defined as ≤0.01MFL>10um. ND=None Detected. No Fibers Detected: the value will be reported as less than 369% of the concentration equivalent to one fiber. 1 to 4 fibers: The result will be reported as less than the corresponding upper 95% confidence limit (Poisson),5 to 30 fibers: Mean and 95% confidence intervals will be reported on the basis of the Poisson assumption. When more than 30 fibers are counted, both the Gaussian 95% confidence interval and the Poisson 95% confidence interval will be calculated. The large of these two intervals will be selected for data reporting. When the Gaussian 95% confidence interval is selected for data reporting, the Poisson will also be noted.

Samples analyzed by LA Testing South Pasadena, CA CA ELAP 2283

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

#322307956 Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212694.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: EMSL Analytical, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132337-7
Address: 520 Mission Street,	Due Date Requested: 4/13/2023			Preservation Codes:
City: South Pasadena	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify), Other:
State, Zip: CA, 91030				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	1	See Attached Instructions

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: (fx)

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company
1		03/27/23 6:47	EC	Annette McKissock	03/28/23 935	CA Testing
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.4°c

Ver: 06/08/2021

ICOC No:
570-212694

#322307956

Containers

Count	Container Type	Preservative
1	Plastic 1 liter - unpreserved	None

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Asbestos 100.2 - "Wastewater" matrix)/ Asbestos 100.2	Level IV package needed. Screen as Wastewater matrix

Loc: 570
132337

570-132337 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Job / SDG No.:
H&A Project Number : 129095-020-001-06				
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230322	3/22/23	1020	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N															x				
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.

Field Readings
Meter Serial #
Time of Readings 10:20
DO (mg/L) 13.66
pH 7.55
Temp (°C/°F) 10.54°C
TRC (mg/L)
Checked by: MMD
Date/Time: 3/23/23 1300

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H+A	Date/Time: 3/23/23 1600	Received by: EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/12/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230322	3/22/23	1020	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☑ [illegible] ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014596

Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Received: [illegible] EC	Date/Time: 3/23/23 1600
Relinquished by: [illegible]	Company: EC	Date/Time: 3/23/23 1920	Received: [illegible] EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

4/12/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132337-5
Address: 14859 East Clark Avenue,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132337-3)	3/22/23	10:20 Pacific		Water			X				3	See Attached Instructions
												Run past HT

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 14:47			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

2.4°C T-0279

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212454.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132337-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									- VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3-24-23 9:48	EC		3/24/23 0948	EC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212454

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132337-7

Login Number: 132337
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 5/1/2023 4:36:04 PM

JOB DESCRIPTION

Boeing SSFL ISRA and BMP

JOB NUMBER

570-132337-8

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

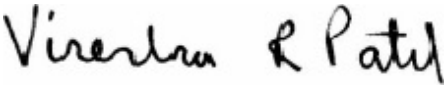
Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Qualifiers

Rad

Qualifier	Qualifier Description
G	The Sample MDC is greater than the requested RL.
U	Result is less than the sample detection limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132337-8

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132337-8

Comments
No additional comments.

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.9º C, 2.3º C and 2.7º C.

RAD
Method 900.0: Gross Alpha and Gross Beta batch 608211
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: EPBBC_20230322 (570-132337-1), (280-174421-A-2-B) and (280-174421-A-2-E DU). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha and Gross Beta batch 608211
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230322 (570-132337-1), (LCS 160-608211/2-A), (LCSB 160-608211/3-A), (MB 160-608211/1-A), (280-174421-A-2-B), (280-174421-A-2-E DU), (280-174421-A-2-C MS) and (280-174421-A-2-D MSBT)

Method 900.0: Gross Alpha Gross Beta batch 608684
The detection goal was not met for the following samples due to a reduction of the sample size attributed to high residual mass: EPBBC_20230322 (570-132337-1), (160-49561-A-1-C) and (160-49561-A-1-F DU). Analytical results are reported with the detection limit achieved.

Method 900.0: Gross Alpha Gross Beta batch 608684
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230322 (570-132337-1), (LCS 160-608684/2-A), (LCSB 160-608684/3-A), (MB 160-608684/1-A), (160-49561-A-1-C), (160-49561-A-1-F DU), (160-49561-A-1-D MS) and (160-49561-A-1-E MSBT)

Method 901.1: Gamma Prep Batch 160-605283
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228

Job ID: 570-132337-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBBC_20230322 (570-132337-1), (570-131073-AT-1-B) and (570-131073-AT-1-C DU)

Method 901.1: Gamma Prep Batch 160-605774
Many isotopes requested for analysis do not have any gamma emissions, or the gamma emissions they do have are very poor. Often, such analytes are reported by gamma spectrometry assuming secular equilibrium with a longer-lived parent. The client should ensure that such inference is acceptable for their sample based upon process knowledge. The following assumptions were made for this report:

Inferred from	Reported to Analyte
Th-234	Pa-234
Th-234	U-238
Pb-210	Po-210
Pb-210	Bi-210
Cs-137	Ba-137m
Pb-212	Po-216
Xe-131m	Xe-131
Sb-125	Te-125m
Ag-108m	Ag-108
Rh-106	Ru-106
Pb-212	Th-228
Pb-212	Ra-224
U-235	Th-231
Ac-228	Th-232
Ac-228	Ra-228
Th-227	Ra-223
Th-227	Ac-227
Th-227	Bi-211
Th-227	Pb-211
Bi-214	Ra-226

Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

EPBBC_20230322 (570-132337-1), (570-132015-K-1-D) and (570-132015-K-1-E DU)

Methods 903.0, 9315: Radium-226 batch 606156
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230322 (570-132337-1), (LCS 160-606156/2-A), (MB 160-606156/1-A), (660-128024-E-1-A) and (660-128024-D-1-A DU)

Methods 904.0, 9320: Radium-228 batch 606165

Job ID: 570-132337-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

The LCS recovered at (128%). The limits in our LIMS system at 75-125 reflect the requirements of a regulatory agency that represents a large amount of our work. However the samples associated with this LCS are not from this agency and are therefore held to our in-house statistical limits of (62-148%) per method requirements. The LCS passes, no further action is required

(LCS 160-606165/2-A)

Methods 904.0, 9320: Radium-228 batch 606165
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230322 (570-132337-1), (LCS 160-606165/2-A), (MB 160-606165/1-A), (660-128024-E-1-B) and (660-128024-D-1-B DU)

Method 905: Strontium-90 batch 606565
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230322 (570-132337-1), (LCS 160-606565/2-A), (LCSD 160-606565/3-A) and (MB 160-606565/1-A)

Method 905: Strontium-90 batch 607355
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230322 (570-132337-1), (LCS 160-607355/2-A), (MB 160-607355/1-A), (280-174032-D-4-A) and (280-174032-C-4-A DU)

Method 906.0: Tritium 607890
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are decay corrected to sample date and time as the Activity Reference Date. EPBBC_20230322 (570-132337-1), (LCS 160-607890/2-A), (MB 160-607890/1-A), (570-131938-I-1-A), (570-131938-I-1-B DU), (570-132136-Q-1-A) and (570-132136-Q-1-B MS)

Method A-01-R: Isotopic Uranium batch 608221
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230322 (570-132337-1), (LCS 160-608221/2-A), (MB 160-608221/1-A), (570-132333-AG-1-C) and (570-132333-AG-1-D DU)

Method A-01-R: Isotopic Uranium batch 608325
Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative. Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.
EPBBC_20230322 (570-132337-1), (LCS 160-608325/2-A), (MB 160-608325/1-A), (570-133036-R-1-G) and (570-133036-R-1-I DU)

Method Evaporation:

Method ExtChrom:

Method ExtChrom:

Method ExtChrom: Uranium Prep Batch 160-608325:

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBBC_20230322 (570-132337-1).

Method ExtChrom: Uranium Prep Batch 160-608221:

Job ID: 570-132337-8 (Continued)

Laboratory: Eurofins Calscience (Continued)

The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels: EPBBC_20230322 (570-132337-1).

Method PrecSep_0:

Method PrecSep-21:

Method PrecSep-7: Strontium-90 Prep Batch 606565

The following sample was prepared at a reduced aliquot due to Matrix: EPBBC_20230322 (570-132337-1). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

Method PrecSep-7:

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Client Sample ID: EPBBC_20230322 **Lab Sample ID: 570-132337-1**

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	3.27	U G	3.74	3.76	3.00	6.05	pCi/L	04/20/23 12:05	04/27/23 08:29	1
Gross Beta	**7.69**		2.56	2.67	4.00	3.29	pCi/L	04/20/23 12:05	04/27/23 08:29	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity - Dissolved

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	3.75	U G	3.81	3.83	3.00	6.12	pCi/L	04/25/23 10:54	04/28/23 19:16	1
Gross Beta	1.33	U	1.38	1.38	4.00	2.19	pCi/L	04/25/23 10:54	04/28/23 19:16	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS)

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	0.698	U	6.91	6.91	20.0	7.91	pCi/L	03/28/23 16:33	04/12/23 20:15	1
Potassium-40	3.44	U	101	101		120	pCi/L	03/28/23 16:33	04/12/23 20:15	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Method: EPA 901.1 - Cesium 137 & Other Gamma Emitters (GS) - Dissolved

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Cesium-137	2.54	U	6.12	6.13	20.0	7.48	pCi/L	03/31/23 15:10	04/13/23 20:39	1
Potassium-40	4.24	U	83.7	83.7		111	pCi/L	03/31/23 15:10	04/13/23 20:39	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Method: EPA 903.0 - Radium-226 (GFPC)

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0795	U	0.193	0.193	1.00	0.356	pCi/L	04/05/23 09:50	04/28/23 07:45	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69*		*30 - 110*	*04/05/23 09:50*	*04/28/23 07:45*	*1*

Method: EPA 903.0 - Radium-226 (GFPC) - Dissolved

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.147	U	0.159	0.159	1.00	0.245	pCi/L	04/05/23 09:50	04/28/23 07:46	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*4191*		*30 - 110*	*0/ 20: 283 045 0*	*0/ 2862 33 0. 5 Y*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Method: EPA 904.0 - Radium-228 (GFPC)

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.204	U	0.427	0.428	1.00	0.745	pCi/L	04/05/23 10:22	04/27/23 12:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*69*		*30 - 110*	*04/20/23 10:58*	*04/28/23 18:04*	*1*
S Carrier	*63*		*30 - 110*	*04/20/23 10:58*	*04/28/23 18:04*	*1*

Method: EPA 904.0 - Radium-228 (GFPC) - Dissolved

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.228	U	0.384	0.384	1.00	0.657	pCi/L	04/05/23 10:22	04/27/23 12:09	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*4191*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:09*	*1*
S Carrier	*6Y9*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:09*	*1*

Method: EPA 905 - Strontium-90 (GFPC)

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	-0.187	U	0.478	0.478	3.00	0.884	pCi/L	04/07/23 11:12	04/17/23 19:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
7r Carrier	*669*		*30 - 110*	*0/ 20. 2383 1151 18*	*0/ 21. 2383 1455 38*	*1*
S Carrier	*Y. 93*		*30 - 110*	*0/ 20. 2383 1151 18*	*0/ 21. 2383 1455 38*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Method: EPA 905 - Strontium-90 (GFPC) - Dissolved

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Strontium-90	0.118	U	0.385	0.385	3.00	0.675	pCi/L	04/13/23 14:59	04/24/23 19:27	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
7r Carrier	*6396*		*30 - 110*	*0/ 2132383 1/ 5 4*	*0/ 28/ 2833 145 8.*	*1*
S Carrier	*. 69*		*30 - 110*	*0/ 2132383 1/ 5 4*	*0/ 28/ 2833 145 8.*	*1*

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Method: EPA 906.0 - Tritium, Total (LSC)

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Tritium	-209	U	202	203	500	411	pCi/L	04/18/23 11:12	04/19/23 11:08	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry)

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Total Uranium	4.85		0.978	1.02	1.00	0.354	pCi/L	04/20/23 16:08	04/24/23 23:27	1

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Method: DOE A-01-R - Isotopic Uranium (Alpha Spectrometry) - Dissolved

Client Sample ID: EPBBC_20230322
Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1
Matrix: Water

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Dissolved Uranium	3.60		0.829	0.852	1.00	0.263	pCi/L	04/20/23 13:36	04/24/23 23:28	1

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Ba (30-110)							
570-132337-1	EPBBC_20230322	84.6							
LCS 160-606156/2-A	Lab Control Sample	89.6							
MB 160-606156/1-A	Method Blank	91.6							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 903.0 - Radium-226 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Ba (30-110)							
570-132337-1	EPBBC_20230322	91.1							

Tracer/Carrier Legend

Ba = Ba Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)						
570-132337-1	EPBBC_20230322	84.6	83.0						
LCS 160-606165/2-A	Lab Control Sample	89.6	84.1						
MB 160-606165/1-A	Method Blank	91.6	84.9						

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 904.0 - Radium-228 (GFPC)

Matrix: Water **Prep Type: Dissolved**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Ba (30-110)	Y (30-110)						
570-132337-1	EPBBC_20230322	91.1	86.7						

Tracer/Carrier Legend

Ba = Ba Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water **Prep Type: Total/NA**

		Percent Yield (Acceptance Limits)							
Lab Sample ID	Client Sample ID	Sr (30-110)	Y (30-110)						
570-132337-1	EPBBC_20230322	88.5	67.3						
LCS 160-606565/2-A	Lab Control Sample	86.3	77.0						
LCS 160-607355/2-A	Lab Control Sample	86.2	84.1						

Tracer/Carrier Summary

Client: Haley & Aldrich, Inc.
Job ID: 570-132337-8
Project/Site: Boeing SSFL ISRA and BMP

Method: 905 - Strontium-90 (GFPC) (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Sr (30-110)	Y (30-110)
LCSD 160-606565/3-A	Lab Control Sample Dup	85.1	69.9
MB 160-606565/1-A	Method Blank	86.6	81.9
MB 160-607355/1-A	Method Blank	87.8	85.6

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: 905 - Strontium-90 (GFPC)

Matrix: Water
Prep Type: Dissolved

		Percent Yield (Acceptance Limits)	
Lab Sample ID	Client Sample ID	Sr (30-110)	Y (30-110)
570-132337-1	EPBBC_20230322	83.8	78.5

Tracer/Carrier Legend

Sr = Sr Carrier
Y = Y Carrier

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Matrix: Water
Prep Type: Total/NA

		Percent Yield (Acceptance Limits)
Lab Sample ID	Client Sample ID	U-232 (30-110)
LCS 160-608221/2-A	Lab Control Sample	81.2
LCS 160-608325/2-A	Lab Control Sample	87.6
MB 160-608221/1-A	Method Blank	96.9
MB 160-608325/1-A	Method Blank	81.8

Tracer/Carrier Legend

U-232 = Uranium-232

Method: 900.0 - Gross Alpha and Gross Beta Radioactivity

Lab Sample ID: MB 160-60521171-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal7TA**
Analysis Batch: 60922N — **Wrep Batch: 605211**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+7-)	Potal Uncert. (2σ+7-)	RL	MDC	Unit	Wrepared	Analyzed	Dil Fac
Mdopp & 9cH	0,2743	U	0,G47	0,G47	3,00	1,22	98 IjF	06j20j23 12:05	06j27j23 04:17	1
Mdopp Si nH	0,1s53	U	0,605	0,60G	6,00	0,Gs2	98 IjF	06j20j23 12:05	06j27j23 04:17	1

Lab Sample ID: LCS 160-60521172-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal7TA**
Analysis Batch: 60922N — **Wrep Batch: 605211**

Analyte	Spike Added	LCS Result	LCS Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits
Mdopp & 9cH	50,5	5G,05		4,0s	3,00	2,66	98 IjF	111	75 - 125

Lab Sample ID: LCSB 160-60521173-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal7TA**
Analysis Batch: 60922N — **Wrep Batch: 605211**

Analyte	Spike Added	LCSB Result	LCSB Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits
Mdopp Si nH	73,3	Gs,7s		7,50	6,00	0,4sG	98 IjF	s5	75 - 125

Lab Sample ID: MB 160-60565871-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal7TA**
Analysis Batch: 609233 — **Wrep Batch: 605658**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+7-)	Potal Uncert. (2σ+7-)	RL	MDC	Unit	Wrepared	Analyzed	Dil Fac
Mdopp & 9cH	0,2231	U	0,5Gs	0,570	3,00	1,02	98 IjF	06j25j23 10:56	06j24j23 1s:10	1
Mdopp Si nH	-0,5047	U	0,500	0,503	6,00	0,s70	98 IjF	06j25j23 10:56	06j24j23 1s:10	1

Lab Sample ID: LCS 160-60565872-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal7TA**
Analysis Batch: 609233 — **Wrep Batch: 605658**

Analyte	Spike Added	LCS Result	LCS Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits
Mdopp & 9cH	50,5	55,63		4,10	3,00	2,34	98 IjF	110	75 - 125

Lab Sample ID: LCSB 160-60565873-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal7TA**
Analysis Batch: 609233 — **Wrep Batch: 605658**

Analyte	Spike Added	LCSB Result	LCSB Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits
Mdopp Si nH	73,3	7G,45		4,21	6,00	0,402	98 IjF	105	75 - 125

Method: 901.1 - Cesium 13& O Ether Gamma 4 mitters (GS)

Lab Sample ID: MB 160-60N25371-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal7TA**
Analysis Batch: 60&160 — **Wrep Batch: 60N253**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+7-)	Potal Uncert. (2σ+7-)	RL	MDC	Unit	Wrepared	Analyzed	Dil Fac
8 i plum-137	2,7s3	U	G,G7	G,G4	20,0	7,6s	98 ljF	03j24j23 1G33	06j12j23 06:01	1
. orHpplum-60	27,15	U	42,G	42,7		10G	98 ljF	03j24j23 1G33	06j12j23 06:01	1

Lab Sample ID: LCS 160-60N25372-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal7TA**
Analysis Batch: 60&155 — **Wrep Batch: 60N253**

Analyte	Spike Added	LCS Result	LCS Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits
&mi drlum-261	135000	13s700		1GG00		5G2	98 ljF	103	7s - 121
8 i plum-137	60400	3sGs0		6760	20,0	15G	98 ljF	s7	47 - 115
8 obH0-G0	17700	17220		20G0		74,1	98 ljF	s7	44 - 11G

Lab Sample ID: MB 160-60N&&871-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal7TA**
Analysis Batch: 60&321 — **Wrep Batch: 60N&&8**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+7-)	Potal Uncert. (2σ+7-)	RL	MDC	Unit	Wrepared	Analyzed	Dil Fac
8 i plum-137	-7,022	U	12,s	12,s	20,0	15,6	98 ljF	03j31j23 15:10	06j13j23 16:60	1
. orHpplum-60	-5,454	U	11s	11s		1G3	98 ljF	03j31j23 15:10	06j13j23 16:60	1

Lab Sample ID: LCS 160-60N&&872-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal7TA**
Analysis Batch: 60&326 — **Wrep Batch: 60N&&8**

Analyte	Spike Added	LCS Result	LCS Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits
&mi drlum-261	135000	156200		14300		2s1	98 ljF	116	7s - 121
8 i plum-137	60400	626G0		50G0	20,0	41,7	98 ljF	106	47 - 115
8 obH0-G0	17700	14650		2200		5G,6	98 ljF	106	44 - 11G

Method: 903.0 - Radium-226 (GFWC)

Lab Sample ID: MB 160-6061N671-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal7TA**
Analysis Batch: 609232 — **Wrep Batch: 6061N6**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+7-)	Potal Uncert. (2σ+7-)	RL	MDC	Unit	Wrepared	Analyzed	Dil Fac
L HAlum-22G	0,1227	U	0,136	0,135	1,00	0,213	98 ljF	06j05j23 0s:50	06j24j23 07:62	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.6*		*30 - 110*	*04/05/23 09:50*	*04/28/23 07:42*	*1*

Method: 903.0 - Radium-226 (GFWC) (Continued)

Lab Sample ID: LCS 160-6061N672-A **Client Sample ID: Lab Control Sample**
Matri/ : x ater **Wrep Pype: Potal7TA**
Analysis Batch: 609232 **Wrep Batch: 6061N6**

Analyte			Spike Added	LCS Result	LCS Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits		
LHAlum-22G			11,3	s,4s0		1,23	1,00	0,26G	98 IjF	47	70 - 113		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.6*		*30 - 110*

Method: 908.0 - Radium-225 (GFWC)

Lab Sample ID: MB 160-60616N71-A **Client Sample ID: Method Blank**
Matri/ : x ater **Wrep Pype: Potal7TA**
Analysis Batch: 6091N8 **Wrep Batch: 60616N**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+7-)	Potal Uncert. (2σ+7-)	RL	MDC	Unit	Wrepared	Analyzed	Dil Fac
LHAlum-224	0,1s1s	U	0,367	0,367	1,00	0,5s5	98 IjF	06j05j23 10:22	06j27j23 12:2s	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*91.6*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:29*	*1*
Y Carrier	*84.9*		*30 - 110*	*04/05/23 10:22*	*04/27/23 12:29*	*1*

Lab Sample ID: LCS 160-60616N72-A **Client Sample ID: Lab Control Sample**
Matri/ : x ater **Wrep Pype: Potal7TA**
Analysis Batch: 6091N8 **Wrep Batch: 60616N**

Analyte			Spike Added	LCS Result	LCS Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits		
LHAlum-224			4,00	10,23		1,3s	1,00	0,552	98 IjF	124	75 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Ba Carrier	*89.6*		*30 - 110*
Y Carrier	*84.1*		*30 - 110*

Method: 90N - Strontium-90 (GFWC)

Lab Sample ID: MB 160-606N6N71-A **Client Sample ID: Method Blank**
Matri/ : x ater **Wrep Pype: Potal7TA**
Analysis Batch: 608581 **Wrep Batch: 606N6N**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+7-)	Potal Uncert. (2σ+7-)	RL	MDC	Unit	Wrepared	Analyzed	Dil Fac
/ nobenlum-s0	0,1G75	U	0,206	0,206	3,00	0,337	98 IjF	06j07j23 11:12	06j17j23 1s:03	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*86.6*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*
Y Carrier	*81.9*		*30 - 110*	*04/07/23 11:12*	*04/17/23 19:03*	*1*

Method: 90N - Strontium-90 (GFWC) (Continued)

Lab Sample ID: LCS 160-606N6N72-A | **Client Sample ID: Lab Control Sample**
Matri/ : x ater | **Wrep Pype: Potal7T A**
Analysis Batch: 60&581 | **Wrep Batch: 606N6N**

Analyte			Spike Added	LCS Result	LCS Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits		
/ nobenlum-s0			7,36	7,570		0,453	3,00	0,305	98 ljF	103	77 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*86.3*		*30 - 110*
Y Carrier	*77.0*		*30 - 110*

Lab Sample ID: LCSD 160-606N6N73-A | **Client Sample ID: Lab Control Sample Dup**
Matri/ : x ater | **Wrep Pype: Potal7T A**
Analysis Batch: 60&581 | **Wrep Batch: 606N6N**

Analyte			Spike Added	LCSD Result	LCSD Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits	R4R	R4R Limit
/ nobenlum-s0			7,36	7,501		0,447	3,00	0,601	98 ljF	102	77 - 125	0,06	1

Carrier	*LCSD %Yield*	*LCSD Qualifier*	*Limits*
Sr Carrier	*85.1*		*30 - 110*
Y Carrier	*69.9*		*30 - 110*

Lab Sample ID: MB 160-60&3NN71-A | **Client Sample ID: Method Blank**
Matri/ : x ater | **Wrep Pype: Potal7T A**
Analysis Batch: 605898 | **Wrep Batch: 60&3NN**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+7-)	Potal Uncert. (2σ+7-)	RL	MDC	Unit	Wrepared	Analyzed	Dil Fac
/ nobenlum-s0	0,1022	U	0,20G	0,20G	3,00	0,351	98 ljF	06j13j23 16:5s	06j26j23 1s:21	1

Carrier	*MB %Yield*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Sr Carrier	*87.8*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:21*	*1*
Y Carrier	*85.6*		*30 - 110*	*04/13/23 14:59*	*04/24/23 19:21*	*1*

Lab Sample ID: LCS 160-60&3NN72-A | **Client Sample ID: Lab Control Sample**
Matri/ : x ater | **Wrep Pype: Potal7T A**
Analysis Batch: 605898 | **Wrep Batch: 60&3NN**

Analyte			Spike Added	LCS Result	LCS Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits		
/ nobenlum-s0			7,33	7,651		0,432	3,00	0,244	98 ljF	102	77 - 125		

Carrier	*LCS %Yield*	*LCS Qualifier*	*Limits*
Sr Carrier	*86.2*		*30 - 110*
Y Carrier	*84.1*		*30 - 110*

Method: 906.0 - Pritium, Potal (LSC)

Lab Sample ID: MB 160-60&5907 1-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal7T A**
Analysis Batch: 605161 — **Wrep Batch: 60&590**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+7-)	Potal Uncert. (2σ+7-)	RL	MDC	Unit	Wrepared	Analyzed	Dil Fac
Tdrium	-102,7	U	226	226	500	633	98 ljF	06j14j23 11:12	06j1sj23 0G61	1

Lab Sample ID: LCS 160-60&5907 2-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal7T A**
Analysis Batch: 605161 — **Wrep Batch: 60&590**

Analyte	Spike Added	LCS Result	LCS Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits
Tdrium	20s0	1G06		3sG	500	620	98 ljF	77	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry)

Lab Sample ID: MB 160-60522171-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal7T A**
Analysis Batch: 605NN2 — **Wrep Batch: 605221**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+7-)	Potal Uncert. (2σ+7-)	RL	MDC	Unit	Wrepared	Analyzed	Dil Fac
DlppoVi A UdHelum	0,04412	U	0,1063	0,1065	1,00	0,12s	98 ljF	06j20j23 13:3G	06j26j23 23:24	1

Lab Sample ID: LCS 160-60522172-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal7T A**
Analysis Batch: 605NN3 — **Wrep Batch: 605221**

Analyte	Spike Added	LCS Result	LCS Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits
UdHelum-236	12,7	12,7s		1,52	1,00	0,152	98 ljF	100	75 - 125
UdHelum-234	13,0	16,46		1,70	1,00	0,0GG4	98 ljF	116	75 - 125

Tracer	*LCS %Yield*	*LCS Qualifier*	*Limits*
Uranium-232	*81.2*		*30 - 110*

Lab Sample ID: MB 160-60532N71-A — **Client Sample ID: Method Blank**
Matri/ : x ater — **Wrep Pype: Potal7T A**
Analysis Batch: 605NN1 — **Wrep Batch: 60532N**

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+7-)	Potal Uncert. (2σ+7-)	RL	MDC	Unit	Wrepared	Analyzed	Dil Fac
TorHCUdHelum	0,07277	U	0,1152	0,1153	1,00	0,146	98 ljF	06j20j23 1G04	06j26j23 23:27	1

Lab Sample ID: LCS 160-60532N72-A — **Client Sample ID: Lab Control Sample**
Matri/ : x ater — **Wrep Pype: Potal7T A**
Analysis Batch: 605NNN — **Wrep Batch: 60532N**

Analyte	Spike Added	LCS Result	LCS Qual	Potal Uncert. (2σ+7-)	RL	MDC	Unit	%Rec	%Rec Limits
UdHelum-236	12,7	13,4G		1,5s	1,00	0,166	98 ljF	10s	75 - 125
UdHelum-234	13,0	16,s3		1,G4	1,00	0,150	98 ljF	115	75 - 125

Method: A-01-R - Isotopic Uranium (Alpha Spectrometry) (Continued)

Lab Sample ID: LCS 160-60532N72-A
Matri/ : x ater
Analysis Batch: 605NNN

Client Sample ID: Lab Control Sample
Wrep Pype: Potal7TA
Wrep Batch: 60532N

Tracer	LCS %Yield	LCS Qualifier	Limits
Uranium-232	87.6		30 - 110

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Prep Batch: 605283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	Fill_Geo-0	
MB 160-605283/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605283/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Filtration Batch: 605402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	Filtration	
570-132337-1	EPBBC_20230322	Dissolved	Water	Filtration	
570-132337-1	EPBBC_20230322	Dissolved	Water	Filtration	

Prep Batch: 605774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	Fill_Geo-0	605402
MB 160-605774/1-A	Method Blank	Total/NA	Water	Fill_Geo-0	
LCS 160-605774/2-A	Lab Control Sample	Total/NA	Water	Fill_Geo-0	

Prep Batch: 606156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	PrecSep-21	605402
570-132337-1	EPBBC_20230322	Total/NA	Water	PrecSep-21	
MB 160-606156/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-606156/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	

Prep Batch: 606165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	PrecSep_0	605402
570-132337-1	EPBBC_20230322	Total/NA	Water	PrecSep_0	
MB 160-606165/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-606165/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	

Prep Batch: 606565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	PrecSep-7	
MB 160-606565/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-606565/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	
LCSD 160-606565/3-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-7	

Prep Batch: 607355

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	PrecSep-7	605402
MB 160-607355/1-A	Method Blank	Total/NA	Water	PrecSep-7	
LCS 160-607355/2-A	Lab Control Sample	Total/NA	Water	PrecSep-7	

Prep Batch: 607890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	LSC_Dist_Susp	
MB 160-607890/1-A	Method Blank	Total/NA	Water	LSC_Dist_Susp	
LCS 160-607890/2-A	Lab Control Sample	Total/NA	Water	LSC_Dist_Susp	

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Prep Batch: 608211

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	Evaporation	
MB 160-608211/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-608211/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-608211/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Prep Batch: 608221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	ExtChrom	605402
MB 160-608221/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-608221/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 608325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Total/NA	Water	ExtChrom	
MB 160-608325/1-A	Method Blank	Total/NA	Water	ExtChrom	
LCS 160-608325/2-A	Lab Control Sample	Total/NA	Water	ExtChrom	

Prep Batch: 608684

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132337-1	EPBBC_20230322	Dissolved	Water	Evaporation	605402
MB 160-608684/1-A	Method Blank	Total/NA	Water	Evaporation	
LCS 160-608684/2-A	Lab Control Sample	Total/NA	Water	Evaporation	
LCSB 160-608684/3-A	Lab Control Sample	Total/NA	Water	Evaporation	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Client Sample ID: EPBBC_20230322

Date Collected: 03/22/23 10:20
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132337-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	Evaporation			92.04 mL	1.0 g	608684	04/25/23 10:54	MST	EET SL
Dissolved	Analysis	900.0		1			609234	04/28/23 19:16	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	Evaporation			53.195 mL	1.0 g	608211	04/20/23 12:05	MST	EET SL
Total/NA	Analysis	900.0		1			609152	04/27/23 08:29	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	Fill_Geo-0			1000 mL	1.0 g	605774	03/31/23 15:10	AJP	EET SL
Dissolved	Analysis	901.1		1			607328	04/13/23 20:39	CAH	EET SL
	Instrument ID: GAMMAVISION									
Total/NA	Prep	Fill_Geo-0			1000 mL	1.0 g	605283	03/28/23 16:33	SAC	EET SL
Total/NA	Analysis	901.1		1			607160	04/12/23 20:15	CAH	EET SL
	Instrument ID: GAMMAVISION									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	PrecSep-21			751.53 mL	1.0 g	606156	04/05/23 09:50	DJP	EET SL
Dissolved	Analysis	903.0		1			609232	04/28/23 07:46	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-21			757.49 mL	1.0 g	606156	04/05/23 09:50	DJP	EET SL
Total/NA	Analysis	903.0		1			609232	04/28/23 07:45	FLC	EET SL
	Instrument ID: GFPCRED									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	PrecSep_0			751.53 mL	1.0 g	606165	04/05/23 10:22	DJP	EET SL
Dissolved	Analysis	904.0		1			609225	04/27/23 12:09	FLC	EET SL
	Instrument ID: GFPCORANGE									
Total/NA	Prep	PrecSep_0			757.49 mL	1.0 g	606165	04/05/23 10:22	DJP	EET SL
Total/NA	Analysis	904.0		1			609225	04/27/23 12:09	FLC	EET SL
	Instrument ID: GFPCORANGE									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	PrecSep-7			503.81 mL	1.0 g	607355	04/13/23 14:59	KAC	EET SL
Dissolved	Analysis	905		1			608494	04/24/23 19:27	FLC	EET SL
	Instrument ID: GFPCRED									
Total/NA	Prep	PrecSep-7			507.46 mL	1.0 g	606565	04/07/23 11:12	DJP	EET SL
Total/NA	Analysis	905		1			607834	04/17/23 19:22	FLC	EET SL
	Instrument ID: GFPCPURPLE									
Total/NA	Prep	LSC_Dist_Susp			99.95 mL	1.0 g	607890	04/18/23 11:12	ZR	EET SL
Total/NA	Analysis	906.0		1			608161	04/19/23 11:08	REV	EET SL
	Instrument ID: LSC3180									
Dissolved	Filtration	Filtration			1000 mL	1.0 mL	605402	03/29/23 11:43	SAC	EET SL
Dissolved	Prep	ExtChrom			246.8 mL	1.0 mL	608221	04/20/23 13:36	SEH	EET SL
Dissolved	Analysis	A-01-R		1			608609	04/24/23 23:28	FLC	EET SL
	Instrument ID: ALPHAVISION									
Total/NA	Prep	ExtChrom			250.8 mL	1.0 mL	608325	04/20/23 16:08	SEH	EET SL
Total/NA	Analysis	A-01-R		1			608533	04/24/23 23:27	FLC	EET SL
	Instrument ID: ALPHAVISION									

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Laboratory References:

EET SL = Eurofins St. Louis, 13715 Rider Trail North, Earth City, MO 63045, TEL (314)298-8566

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
8roRectj/ ite: SoeinB / / gF I/ L A and SR 8

Job ID: 570-129227-4

Laboratory: Eurofins St. Louis

All accreditationMjcertisicationMheld by thiMlaboratory are liMed. f ot all accreditationMjcertisicationMare aNNicable to thiMreNort.

Authority	Program	Identification Number	Expiration Date
AlaMpa k(/ UT	/ tate	90-001	05-0) -95
Af AS	DeNt. osDesenMe 6FA8	F9205	0E-0) -95
Af AS	DeNt. os6nerBy	F9205.01	0E-0) -95
Af AS	I/ 3 jI6C 17095	F9205	0E-0) -95
AriCona	/ tate	Az0412	19-04-92
Calisornia	FoMAnBeleMCoZnty / anitation DiMrictM	1095u	0) -20-99 *
Calisornia	/ tate	944)	0) -20-92
glorida	f 6FA8	647) 4u	0) -20-92
HI - L adChem L ecoBnition	/ tate	nja	0) -20-92
IllinoiM	f 6FA8	900092	11-20-92
Iowa	/ tate	272	19-01-9E
KanMaM	f 6FA8	6-1092)	10-21-92
KentZcpy kDWT	/ tate	KYu0195	19-21-92
KentZcpy kWWT	/ tate	KYu0195 k8ermit KY000E0EuT	19-21-92
FoZiMana kAIIT	f 6FA8	0E040	0) -20-92
FoZiMana kDWT	/ tate	FA011	19-21-92
Raryland	/ tate	210	0u-20-92
RI - L adChem L ecoBnition	/ tate	u005	0) -20-92
RiMMoZri	/ tate	740	0) -20-95
f evada	/ tate	R3 0005E9090-1	07-21-92
f ew JerMey	f 6FA8	R3 009	0) -20-92
f ew Yorp	f 6FA8	11) 1)	02-21-9E
f orth Carolina kDWT	/ tate	9u700	07-21-92
f orth Dapota	/ tate	L -907	0) -20-92
3 plahoma	f 6FA8	uuu7	04-21-92
3 reBon	f 6FA8	E157	0u-01-92
8ennMylvania	f 6FA8	) 4-005E0	09-94-9E
/ oZth Carolina	/ tate	45009001	0) -20-92
UexaM	f 6FA8	U10E70E1u2	07-21-92
(/ giMn & Wildlise	(/ gederal 8roBramM	054EE4	07-21-92
(/ DA	(/ gederal 8roBramM	8220-17-00094	0) -11-92
(tah	f 6FA8	R3 0005E9091-1E	07-21-92
VirBinia	f 6FA8	10210	0) -1E-92
WaMhinBton	/ tate	C5u9	04-20-92
WeM VirBinia D68	/ tate	241	10-21-92

* AccreditationjCertisication renewal NendinB - accreditationjcertisication conMdered valid.

6ZrosinMCalMcience

Method Summary

8 Client HC Cay & Cadrchler,
. dbPrnj/ lni : Soi leB / / gF l/ L & HeA SR.

Job ID: 570-129227-4

Method	Method Description	Protocol	Laboratory
E00,0	Gdbss & CpcH HeA Gdbss Si nH L HAloHr nlvlna	M. &	MMT / F
E01,1	8 i slum 127 y 3 nci dGHmmH Mmlmi ds CG/ (	M. &	MMT / F
E02,0	L HAlum-99) CGg. 8 (	M. &	MMT / F
E06,0	L HAlum-994 CGg. 8 (	M. &	MMT / F
E05	/ nobenlum-E0 CGg. 8 (	M. &	MMT / F
E0) ,0	TdnlumhTonHCOF/ 8 (	M. &	MMT / F
&-01-L	Isonoplr UdHelum C&CpcH / pi r nobmi nda(	D3 M	MMT / F
MvHpodHnoe	. d pHdHnoehMvHpodHnoe	Noei	MMT / F
Mxn8 cdbm	. d pHdHnoehMxndHr nloe 8 cdbmHnoBdHpca L i sle & r nlelAi / i pHdHnoe	Noei	MMT / F
glCCGi o-0	glCCGi omi ndahNo le-Gdbwnc	Noei	MMT / F
glCdHnoe	/ HmpC glCdHnoe	Noei	MMT / F
F/ 8 _Dlsn_/ usp	DlsnlCHnoe HeA / uspi esloe CF/ 8 (	Noei	MMT / F
. d r / i p_0	. d pHdHnoeh. d r lplrHni / i pHdHnoe	Noei	MMT / F
. d r / i p-91	. d pHdHnoeh. d r lplrHni / i pHdHnoe C91-DHa le-Gdbwnc(	Noei	MMT / F
. d r / i p-7	. d pHdHnoeh. d r lplrHni / i pHdHnoe C7-DHa le-Gdbwnc(	Noei	MMT / F

Protocol References:

D3 M = U,/ , Di pHdmi enof Mei dBa
M. & = U/ Mevldbemi enHC. dbni r nloe & Bi er a
Noei = Noei

Laboratory References:

MMT / F = Mudbfles / n, Foulsh12715 L lAi dTdHlCNodnchMHdnc 8 lnahR 3) 2065hTMF C216(9E4-45))

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL ISRA and BMP

Job ID: 570-132337-8

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132337-1	EPBBC_20230322	Water	03/22/23 10:20	03/23/23 19:20

Loc: 570
132337

570-132337 Chain of Custody

Chain of Custody Record for Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	1 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client: Lab Sampling:
(619) 280-9210 Phone	TAT if different from Below			
(619) 280-9415 FAX	☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Job / SDG No.:
H&A Project Number : 129095-020-001-06				
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds				
H&A P O #				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Dioxins - 17 Congeners (Method 1613)	Total Suspended Solids (Method 2540D)	Particle Size Distribution (Method ASTM D422)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Dissolved)	Gross Alpha & Beta (E900.0); Uranium (E908.0), K-40, Cs-137 (E901.0 or E901.1); Total Combined Radium 226 & 228, Sr-90 (E903.0/E903, E904, E905) – (Total Recoverable)	Cl-, F-, SO4, Nitrate-N, Nitrite-N, NO3+NO2-N (E300) Perchlorate (E314.0)	Tritium (E906.0)	Chromium VI, total dissolved (Method 218.6)	Chromium VI, total recoverable (Method 218.6)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Dissolved)	Method 200.8: Ag, Al, As, Ba, Be, Cd, Co, Cr, Cu, Fe, Mn, Ni, Pb, Se, Sb, Tl, Zn; Method 200.7: B – (Total Recoverable)	LL Mercury, total recoverable (E1631)	LL Mercury, dissolved (E1631)	VOCs + VOCs PP + xylenes, Freon 11, Freon 113, Freon 123A, Cyclohexane, cis-1,2-DCE (E624)	E. coli (SM9221) Enthalpy Analytical in Orange, CA	Cyanide (SM 4500-CN-E)			Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL – only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								2-1L Amber	1-1L Poly	1-1L Poly	4-1 L Poly	4-1 L Poly	1-500mL Poly	1-1L Amber	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Poly	1-250mL Clear Glass w HCl, double bagged	1-250mL Glass (double bagged)	3-40mL VOA	3-125 mL sterile	1-500mL Poly			
EPBBC_20230322	3/22/23	1020	G	WM	27	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
																										Field Readings
																										Meter Serial #
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N														x					Time of Readings 10:20
																										DO (mg/L) 13.66
																										pH 7.55
																										Temp (°C/°F) 10.54°C
																										TRC (mg/L)
																										Checked by: MMD
																										Date/Time: 3/23/23 1300
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	1	1	4	1	1	1	1	1	4	2	1	1	6	5			

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #57014595
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:		Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:	
Relinquished by:	Company: H+A	Date/Time: 3/23/23 1600	Received by: EC	Date/Time: 3/23/23 1600
Relinquished by:	Company: EC	Date/Time: 3/23/23 1920	Received by: EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SCII

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

5/1/2023

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Eurofins Calscience, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact:	Date: 3/23/23	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8606	Lab Contact: Virendra Patel (714) 895-5494	Carrier: Courier	2 of 2 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-06	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y / N)	Perform MS / MSD (Y / N)	Settleable Solids (E160.5 (SM2540F))	Conductivity (SM2510B / E120.1)	Oil & Grease (E1664A-HEM)	VOCs - only 2-CEVE (E624) Weck Labs in Hacienda Heights, CA	TPH: gas (GRO(C4-C12)) (SW8015B)	TPH: diesel/jet fuel (DRO (C13-C28)) (SW8015B)	BOD5 (20 degrees C) (E405.1 (SM5210B_BODCalc))	Surfactants (MBAS) (SM5540C/E425.1)	Turbidity, TDS (SM2540C/E180.1)	Ammonia-N (E350.2)	Priority Pollutants-Pesticides+PCBs (E608) Weck Labs in Hacienda Heights, CA	Priority Pollutants-SVOCs (E625)	Chronic Toxicity - Ceriodaphnia (EPA-821-R-02-013) ABC Labs in Ventura, CA	1,4-Dioxane (E624 (SW8260M_SIM))	Total Organic Carbon (415.2 (SM 5310B))	Monomethyl hydrazine (SW8315M/DV-WC-0077) Weck Labs in Hacienda Heights, CA	Chlorpyrifos, Diazinon (E525.2) Weck Labs in Hacienda Heights, CA	Asbestos (E100.2)	Hardness (200.7 (Ca/Mg)/SM2320B (Hardness))	Hardness, Dissolved (200.7 (Ca/Mg)/SM2320B (Hardness))	Field Staff Notes: Must fill TSS to the top. For metals, Lab may substitute 250mL Poly for 500mL -- only need to fill half of 500mL. Bottles that are sized up based on inventory availability only need to be partially filled to meet the volume requirement as stated here.
								1-1L Poly	1-500mL Poly	2-1L Amber	3-40mL VOA	3-40mL VOA	2-1L Amber	1-1L Poly	2-500mL Poly	1-500mL Poly	1-500mL Poly	2-1L Amber	2-1L Amber	6-1 Gal Cube	3-40mL VOA	1-1L Amber	1-1L Amber	2-1L Amber	1-1L Poly	1-250 ml Poly	1-250 ml Poly	
EPBBC_20230322	3/22/23	1020	G	WM	37	Y	N	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
TB_20230322-2	3/22/23	1020	TB	WM	3	N	N				X																	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	1	2	1	2	1	1	1	1	3	1	1	1	2	2	1	1	1	4	1	

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☑ [illegible] ___ Months

Special Instructions/QC Requirements & Comments: ECI #57014596
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:			
Relinquished by: Michelle Dallalah	Company: H+A	Date/Time: 3/23/23 1600	Received: [illegible] EC	Date/Time: 3/23/23 1600
Relinquished by: [illegible]	Company: EC	Date/Time: 3/23/23 1920	Received: [illegible] EC	Date/Time: 3/23/23 19:20
Relinquished by:	Company:	Date/Time:	Received:	Date/Time:

2.3/2.3 2.7/2.7 1.9/1.9 SC11

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

5/1/2023

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212493.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Weck Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132337-5
Address: 14859 East Clark Avenue, ,	Due Date Requested: 4/13/2023			
City: City of Industry	TAT Requested (days):			
State, Zip: CA, 917451396				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (VOCs-2CVE only (E624))	SUB (EPA 608 - Pesticides/PCBs - PP list)	SUB (Weck- 525.2 - Diazinon and Chlorpyrifos (ug/L units))/ Weck- 525.2 - Diazinon and Chlorpyrifos	SUB (Weck-Hydrazine)/ Weck-Hydrazine	Total Number of containers	Special Instructions/Note:
			Preservation Code:									
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	X	X	X	8	See Attached Instructions
TB-20230323-2 (570-132337-3)	3/22/23	10:20 Pacific		Water			X				3	See Attached Instructions
												Run past HT

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-24-23 14:47			3-24-23 14:47	Weck
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		2.4°C T-0279

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212454.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Enthalpy Analytical LLC		Accreditations Required (See note): State Program - California		Job #: 570-132337-3
Address: 931 W. Barkley Ave, ,	Due Date Requested: 4/7/2023			
City: Orange	TAT Requested (days):			
State, Zip: CA, 92868				
Phone:	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Quant-Tray - E. Coli - level 4 required)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	3	See Attached Instructions
									RUN PAST HT
									- VIRENDRA 3/24

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3-21-23 9:48	EC		3/24/23 0948	EC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No:
570-212454

Containers

Count	Container Type	Preservative
3	Plastic 120 mL - Sterile/Na2S2O3	Sodium Thiosulfate

Subcontract Method Instructions

Sample IDs	Method	Method Description	Method Comments
1	SUBCONTRACT	SUB (Quant-Tray - E. Coli - level 4 required)	Run and report 1x, 10x, and 100x dilutions

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Patel, Virendra	Carrier Tracking No(s):	COC No: 570-212695.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Virendra.Patel@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - California		Job #: 570-132337-8
Address: 13715 Rider Trail North, ,	Due Date Requested: 4/25/2023			
City: Earth City	TAT Requested (days):			
State, Zip: MO, 63045				
Phone: 314-298-8566(Tel) 314-298-8757(Fax)	PO #:			
Email:	WO #:			
Project Name: Boeing SSFL ISRA and BMP	Project #: 57014595			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	900.0/Evaporation (MOD) Gross Alpha/Beta	900.0/Filtration_Rad Gross Alpha/Beta - Dissolved	A01R_U/ExtChrom_Actin Total Uranium	A01R_U/Filtration_Rad Dissolved Uranium	901.1_Cs/Fill_Geo_0 K-40 and Cesium-137	901.1_Cs/Filtration_Rad (MOD) K-40 and Cesium-137 - Dissolved	903.0/PrecSep_21 Radium-226	903.0/Filtration_Rad (MOD) Radium-226 - Dissolved	904.0/PrecSep_0 Radium-228	904.0/Filtration_Rad (MOD) Radium-228 - Dissolved	905_Sr90/PrecSep_7 Strontium-90	905_Sr90/Filtration_Rad (MOD) Strontium-90 - Dissolved	906.0/LSC_Dist_Susp Tritium	Total Number of containers	Special Instructions/Note:
			Preservation Code:																		
EPBBC_20230323 (570-132337-1)	3/22/23	10:20 Pacific		Water			X	X	X	X	X	X	X	X	X	X	X	X	X	9	Boeing SSFL; DO NOT FILTER; use prep date from preservation

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[signature]	03/27/23 6:52	FE	FED EX		
2	FED EX			[signature] Sierra Weathington	MAR 28 2023 0910	ETAS
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132337-8

Login Number: 132337
List Number: 1
Creator: Patel, Virendra

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-132337-8

Login Number: 132337
List Number: 4
Creator: Worthington, Sierra M

List Source: Eurofins St. Louis
List Creation: 03/28/23 11:53 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Katherine Miller
Haley & Aldrich, Inc.
400 E Van Buren St.
Suite 545
Phoenix, Arizona 85004

Generated 5/14/2023 8:57:01 AM

JOB DESCRIPTION

Boeing SSFL BMP

JOB NUMBER

570-133345-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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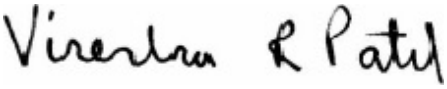
The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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5/14/2023 8:57:01 AM

Authorized for release by
Virendra Patel, Project Manager I
Virendra.Patel@et.eurofinsus.com
(714)895-5494

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL BMP

Job ID: 570-133345-2

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
BU	Analyzed out of holding time
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL BMP

Job ID: 570-133345-2

Job ID: 570-133345-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-133345-2

Comments
No additional comments.

Receipt
The samples were received on 3/31/2023 6:45 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.7º C.

HPLC/IC
Method 300.0: The following samples were prepared outside of preparation holding time due to analysis logged in past hold time: EPSW002IE1_20230330 (570-133345-1), EPSW002IE2_20230330 (570-133345-2), EPSW002BG01_20230330 (570-133345-3) and EPSBPP_20230331 (570-133345-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL BMP

Job ID: 570-133345-2

Client Sample ID: EPSW002IE1_20230330 — Lab Sample ID: 570-133345-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	22	BU	1.0	0.24	mg/L	1		300.0	Total/NA

Client Sample ID: EPSW002IE2_20230330 — Lab Sample ID: 570-133345-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	8.5	BU	1.0	0.24	mg/L	1		300.0	Total/NA

Client Sample ID: EPSW002BG01_20230330 — Lab Sample ID: 570-133345-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	490	BU	10	2.4	mg/L	10		300.0	Total/NA

Client Sample ID: EPSBPP_20230331 — Lab Sample ID: 570-133345-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	0.68	J,DX BU	1.0	0.24	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL BMP

Job ID: 570-133345-2

Method: EPA 300.0 - Anions, Ion Chromatography

Client Sample ID: EPSW002IE1_20230330
Date Collected: 03/30/23 12:00
Date Received: 03/31/23 18:45

Lab Sample ID: 570-133345-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	22	BU	1.0	0.24	mg/L			05/12/23 16:26	1

Client Sample ID: EPSW002IE2_20230330
Date Collected: 03/30/23 00:00
Date Received: 03/31/23 18:45

Lab Sample ID: 570-133345-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	8.5	BU	1.0	0.24	mg/L			05/12/23 16:43	1

Client Sample ID: EPSW002BG01_20230330
Date Collected: 03/30/23 12:20
Date Received: 03/31/23 18:45

Lab Sample ID: 570-133345-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	490	BU	10	2.4	mg/L			05/12/23 17:00	10

Client Sample ID: EPSBPP_20230331
Date Collected: 03/31/23 08:30
Date Received: 03/31/23 18:45

Lab Sample ID: 570-133345-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	0.68	J,DX BU	1.0	0.24	mg/L			05/12/23 17:17	1

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL BMP

Job ID: 570-133345-2

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 570-328459/48
Matrix: Water
Analysis Batch: 328459

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.0	0.24	mg/L			05/12/23 14:38	1

Lab Sample ID: LCS 570-328459/49
Matrix: Water
Analysis Batch: 328459

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	50.0	48.7		mg/L		97	90 - 110

Lab Sample ID: LCSD 570-328459/50
Matrix: Water
Analysis Batch: 328459

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	50.0	48.6		mg/L		97	90 - 110	0	15

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL BMP

Job ID: 570-133345-2

HPLC/IC

Analysis Batch: 328459

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133345-1	EPSW002IE1_20230330	Total/NA	Water	300.0	
570-133345-2	EPSW002IE2_20230330	Total/NA	Water	300.0	
570-133345-3	EPSW002BG01_20230330	Total/NA	Water	300.0	
570-133345-4	EPSBPP_20230331	Total/NA	Water	300.0	
MB 570-328459/48	Method Blank	Total/NA	Water	300.0	
LCS 570-328459/49	Lab Control Sample	Total/NA	Water	300.0	
LCSD 570-328459/50	Lab Control Sample Dup	Total/NA	Water	300.0	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL BMP

Job ID: 570-133345-2

Client Sample ID: EPSW002IE1_20230330
Lab Sample ID: 570-133345-1
Date Collected: 03/30/23 12:00
Matrix: Water
Date Received: 03/31/23 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	328459	05/12/23 16:26	UIP1	EET CAL 4
	Instrument ID: IC9									

Client Sample ID: EPSW002IE2_20230330
Lab Sample ID: 570-133345-2
Date Collected: 03/30/23 00:00
Matrix: Water
Date Received: 03/31/23 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	328459	05/12/23 16:43	UIP1	EET CAL 4
	Instrument ID: IC9									

Client Sample ID: EPSW002BG01_20230330
Lab Sample ID: 570-133345-3
Date Collected: 03/30/23 12:20
Matrix: Water
Date Received: 03/31/23 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	4 mL	4 mL	328459	05/12/23 17:00	UIP1	EET CAL 4
	Instrument ID: IC9									

Client Sample ID: EPSBPP_20230331
Lab Sample ID: 570-133345-4
Date Collected: 03/31/23 08:30
Matrix: Water
Date Received: 03/31/23 18:45

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	4 mL	4 mL	328459	05/12/23 17:17	UIP1	EET CAL 4
	Instrument ID: IC9									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL BMP

Job ID: 570-133345-2

Laboratory: Eurofins Calscience

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0830	11-16-23
California	Los Angeles County Sanitation Districts	10109	07-31-23
California	SCAQMD LAP	17LA0919	11-30-23
California	State	3082	07-31-24
Kansas	NELAP	E-10420	07-31-23
Nevada	State	CA00111	08-01-23
Oregon	NELAP	4175	02-02-24
USDA	US Federal Programs	P330-22-00059	05-24-23
Washington	State	C916-18	10-11-23

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: Boeing SSFL BMP

Job ID: 570-133345-2

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	EPA	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Haley & Aldrich, Inc.
j ro/ectSite: goeinF BBLMgE j

Job ID: 570-133345-P

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-133345-1	Wj B2 00PlWl_P0P30330	2 ater	03S30SP3 1P:00	03S31SP3 18:45
570-133345-P	Wj B2 00PlWP_P0P30330	2 ater	03S30SP3 00:00	03S31SP3 18:45
570-133345-3	Wj B2 00PgG01_P0P30330	2 ater	03S30SP3 1P:P0	03S31SP3 18:45
570-133345-4	Wj Bgj j _P0P30331	2 ater	03S31SP3 08:30	03S31SP3 18:45

Virendra Patel

From: Miller, Katherine <KMiller@haleyaldrich.com>
Sent: Tuesday, May 9, 2023 7:45 PM
To: Virendra Patel
Cc: Dominick, Mark
Subject: Rush Requested: Sulfate

EXTERNAL EMAIL*

Virendra,

Do you have any volume remaining on these samples? Could you run sulfate on a rush TAT? I understand these are past holding time.

sys_loc_code	sys_sample_code	sample_date	field_sdg
EPSBPP	EPSBPP_20230331	3/31/2023	5701333451
EPSW002BG01	EPSW002BG01_20230321	3/21/2023	5701320161
EPSW002BG01	EPSW002BG01_20230330	3/30/2023	5701333451
EPSW002IE01	EPSW002IE01_20230330	3/30/2023	5701333451
EPSW002IE02	EPSW002IE02_20230330	3/30/2023	5701333451

Katherine

Katherine Miller
Project Manager

Haley Aldrich, Inc.
600 South Meyer Ave. | Suite 100
Tucson, AZ 85701

T: (520) 289.8606
C: (520) 904.6944

www.haleyaldrich.com

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133345

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

2841 Dow Avenue, Suite #100
Tustin, CA 92780
phone 714 895 5494 fax 714 894 7501

eurofins | Calscience

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Eurofins Calscience, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc. its subsidiaries and affiliates and TestAmerica Laboratories Inc.

Client Contact	H&A Project Manager: Katherine Miller	H&A Site Contact: Mark Dominick	Date:	COC No:
Haley & Aldrich, Inc.	Tel/Fax: (520) 289-8806	Lab Contact: Virendra Patel (714) 895-5494	Carrier:	1 of 1 COCs
5333 Mission Center Road, Suite 300	Analysis Turnaround Time			Sampler:
San Diego, California 92108	☑ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only:
(619) 280-9210 Phone	TAT if different from Below _____			Walk-in Client:
(619) 280-9415 FAX	☑ 2 weeks			Lab Sampling:
H&A Project Number : 129095-020-001-08	☐ 1 week			
Site: BMP Performance OF 001, 002, 009 and/or 011 Watersheds	☐ 2 days			Job / SDG No.:
H&A P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filter Sample (Y/N)	Perform MS / MSD (Y / N)	Perchlorate (EPA 6850)	Field Staff Notes:
								1-500mL Poly	
EPSW002IE01_20230330	3/30/23	1200	G	WM	1	N	N	x	
EPSW002IE02_20230330	3/30/23	1210	G	WM	1	N	N	x	
EPSW002BG01_20230330	3/30/23	1220	G	WM	1	N	N	x	
EPSBPP_20230331	3/31/23	0830	G	WM	1	N	N	x	
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6=Na2S2O3; 7=Other								1	

570-133345 Chain of Custody

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☑ Archive for 6 Months

Special Instructions/QC Requirements & Comments: ECI #44009815
Please email data to kmiller@haleyaldrich.com and post to Total Access; Bill to Haley & Aldrich at AP@haleyaldrich.com; Report Level II Data Package and provide EDD; All dissolved samples are to be filtered within 24 hours of receipt, even those placed on hold. Low limits needed for Mercury (MDL 0.017 ug/L, RL 0.05 ug/L).

Custody Seals Intact: ☐ Yes	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____ Corr'd: _____ Therm ID No.: _____	
Relinquished by:	Company: L.A. 3.31.23	Date/Time: 1420	Received by: EC 3/31/23	Date/Time: 1420
Relinquished by:	Company: EC	Date/Time: 3/31/23 1845	Received by:	Date/Time: 3/31/23 1845
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Date/Time:

L8/1.7 SC12

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

SAP COC 2019/2020 VERSION 3

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 570-133345-2

Login Number: 133345
List Number: 1
Creator: Patel, Jayesh

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

NASA LAB REPORTS

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

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JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-116620-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-1

Qualifiers

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-116620-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-116620-1

Comments
No additional comments.

Receipt
The sample was received on 11/9/2022 5:55 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.6º C.

Metals
Method 200.8: The method blank for preparation batch 570-280956 and analytical batch 570-281287 contained Copper above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method Filtration: The following sample was not filtered within 15 minutes of sample collection as required by the method: EVBMP0003S033 (570-116620-1). The sample was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
Method D4464: The sample duplicate precision for the following sample associated with analytical batch 570-284091 was flagged as being outside control limits due to a L.I.M.S. limitation: (880-21743-R-1) and (880-21743-R-1 DU). The mean grain size for the sample and sample duplicate were within RPD acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-1

Client Sample ID: EVBMP0003S033

Lab Sample ID: 570-116620-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	4.86	B	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	6.25		1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.85	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.193	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Total Suspended Solids	54.8		2.00	1.66	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	7.87		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	3.56		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	63.32		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	71.19		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	25.25		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Jacobs Engineering Group, Inc.
Job ID: 570-116620-1
Project/Site: NASA SSFL CJ042 Stormwater

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EVBMP0003S033
Lab Sample ID: 570-116620-1
Date Collected: 11/08/22 09:00
Matrix: Water
Date Received: 11/09/22 17:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		11/12/22 07:20	11/14/22 13:29	1
Copper	**4.86**	**B**	2.00	0.318	ug/L		11/12/22 07:20	11/14/22 13:29	1
Lead	**6.25**		1.00	0.118	ug/L		11/12/22 07:20	11/14/22 13:29	1

Client: Jacobs Engineering Group, Inc.
Job ID: 570-116620-1
Project/Site: NASA SSFL CJ042 Stormwater

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EVBMP0003S033
Lab Sample ID: 570-116620-1
Date Collected: 11/08/22 09:00
Matrix: Water
Date Received: 11/09/22 17:55

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			11/10/22 15:20	1
Copper	**1.85**	**J H**	2.00	0.318	ug/L			11/10/22 15:20	1
Lead	**0.193**	**J H**	1.00	0.118	ug/L			11/10/22 15:20	1

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: EVBMP0003S033
Date Collected: 11/08/22 09:00
Date Received: 11/09/22 17:55

Lab Sample ID: 570-116620-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		11/17/22 16:15	11/18/22 17:39	1

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: EVBMP0003S033
Date Collected: 11/08/22 09:00
Date Received: 11/09/22 17:55

Lab Sample ID: 570-116620-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		11/11/22 13:10	11/11/22 15:26	1

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-1

General Chemistry

Client Sample ID: EVBMP0003S033
Date Collected: 11/08/22 09:00
Date Received: 11/09/22 17:55

Lab Sample ID: 570-116620-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	54.8		2.00	1.66	mg/L			11/14/22 13:50	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EVBMP0003S033
Date Collected: 11/08/22 09:00
Date Received: 11/09/22 17:55

Lab Sample ID: 570-116620-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**7.87**		0.01	0.01	%			11/23/22 15:58	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			11/23/22 15:58	1
Fine Sand (0.125 to 0.25mm)	**3.56**		0.01	0.01	%			11/23/22 15:58	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			11/23/22 15:58	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			11/23/22 15:58	1
Silt (0.00391 to 0.0625mm)	**63.32**		0.01	0.01	%			11/23/22 15:58	1
Total Silt and Clay (0 to 0.0626mm)	**71.19**		0.01	0.01	%			11/23/22 15:58	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			11/23/22 15:58	1
Very Fine Sand (0.0625 to 0.125 mm)	**25.25**		0.01	0.01	%			11/23/22 15:58	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

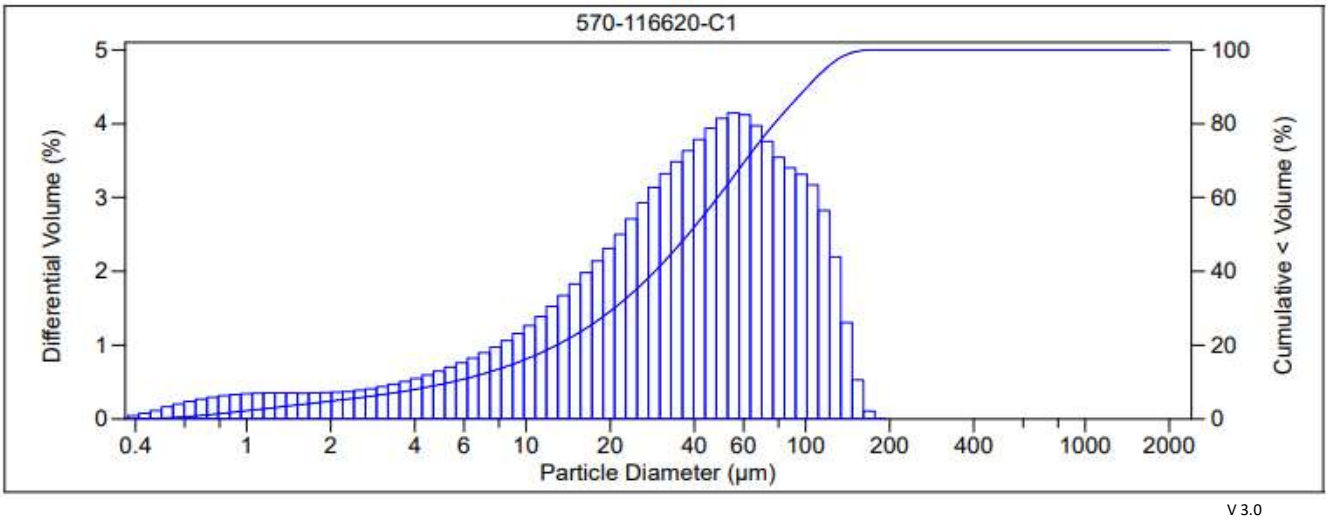
Jacobs Engineering Group, Inc.

Date Sampled:	11/08/22
Date Received:	11/09/22
Work Order No:	570-116620
Date Analyzed:	11/23/22
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0003S033		Silt	0.046

Particle Size Distribution, wt by percent								Total Silt & Clay
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	
0.00	0.00	0.00	0.00	3.56	25.25	63.32	7.87	71.19



Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-280956/1-A
Matrix: Water
Analysis Batch: 281287

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 280956

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		11/12/22 07:20	11/14/22 12:57	1
Copper	0.4490	J	2.00	0.318	ug/L		11/12/22 07:20	11/14/22 12:57	1
Lead	ND		1.00	0.118	ug/L		11/12/22 07:20	11/14/22 12:57	1

Lab Sample ID: LCS 570-280956/2-A
Matrix: Water
Analysis Batch: 281287

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 280956

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	81.45		ug/L		102	85 - 115
Copper	80.0	82.19		ug/L		103	85 - 115
Lead	80.0	82.71		ug/L		103	85 - 115

Lab Sample ID: LCSD 570-280956/3-A
Matrix: Water
Analysis Batch: 281287

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 280956

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	78.91		ug/L		99	85 - 115	3	20
Copper	80.0	79.76		ug/L		100	85 - 115	3	20
Lead	80.0	79.29		ug/L		99	85 - 115	4	20

Lab Sample ID: MB 570-280386/1-A
Matrix: Water
Analysis Batch: 280434

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L			11/10/22 15:04	1
Copper	ND		2.00	0.318	ug/L			11/10/22 15:04	1
Lead	ND		1.00	0.118	ug/L			11/10/22 15:04	1

Lab Sample ID: LCS 570-280386/2-A
Matrix: Water
Analysis Batch: 280434

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	78.11		ug/L		98	85 - 115
Copper	80.0	78.33		ug/L		98	85 - 115
Lead	80.0	77.47		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-280386/3-A
Matrix: Water
Analysis Batch: 280434

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	77.48		ug/L		97	85 - 115	1	20
Copper	80.0	76.47		ug/L		96	85 - 115	2	20
Lead	80.0	76.59		ug/L		96	85 - 115	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-282436/1-A
Matrix: Water
Analysis Batch: 282791

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 282436

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		11/17/22 16:15	11/18/22 17:01	1

Lab Sample ID: LCS 570-282436/2-A
Matrix: Water
Analysis Batch: 282791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 282436

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.008438		mg/L		105	85 - 115

Lab Sample ID: LCSD 570-282436/3-A
Matrix: Water
Analysis Batch: 282791

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 282436

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.008220		mg/L		103	85 - 115	3	10

Lab Sample ID: MB 570-280412/1-B
Matrix: Water
Analysis Batch: 280878

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 280420

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		11/11/22 13:10	11/11/22 14:55	1

Lab Sample ID: LCS 570-280412/2-B
Matrix: Water
Analysis Batch: 280878

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 280420

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.008053		mg/L		101	85 - 115

Lab Sample ID: LCSD 570-280412/3-B
Matrix: Water
Analysis Batch: 280878

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 280420

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.008123		mg/L		102	85 - 115	1	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-281263/1
Matrix: Water
Analysis Batch: 281263

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			11/14/22 13:50	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 570-281263/2
Matrix: Water
Analysis Batch: 281263

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	86.00		mg/L		86	77 - 116		

Lab Sample ID: LCSD 570-281263/3
Matrix: Water
Analysis Batch: 281263

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	81.00		mg/L		81	77 - 116	6	10

Metals

Filtration Batch: 280386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Dissolved	Water	Filtration	
MB 570-280386/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-280386/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-280386/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Filtration Batch: 280412

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Dissolved	Water	Filtration	
MB 570-280412/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-280412/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-280412/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 280420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Dissolved	Water	245.1	280412
MB 570-280412/1-B	Method Blank	Dissolved	Water	245.1	280412
LCS 570-280412/2-B	Lab Control Sample	Dissolved	Water	245.1	280412
LCSD 570-280412/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	280412

Analysis Batch: 280422

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Dissolved	Water	200.8	280386

Analysis Batch: 280434

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-280386/1-A	Method Blank	Dissolved	Water	200.8	280386
LCS 570-280386/2-A	Lab Control Sample	Dissolved	Water	200.8	280386
LCSD 570-280386/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	280386

Analysis Batch: 280878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Dissolved	Water	245.1	280420
MB 570-280412/1-B	Method Blank	Dissolved	Water	245.1	280420
LCS 570-280412/2-B	Lab Control Sample	Dissolved	Water	245.1	280420
LCSD 570-280412/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	280420

Prep Batch: 280956

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Total Recoverable	Water	200.8	
MB 570-280956/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-280956/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-280956/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Analysis Batch: 281287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Total Recoverable	Water	200.8	280956
MB 570-280956/1-A	Method Blank	Total Recoverable	Water	200.8	280956
LCS 570-280956/2-A	Lab Control Sample	Total Recoverable	Water	200.8	280956
LCSD 570-280956/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	280956

QC Association Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-1

Metals

Prep Batch: 282436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Total/NA	Water	245.1	
MB 570-282436/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-282436/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-282436/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Analysis Batch: 282791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Total/NA	Water	245.1	282436
MB 570-282436/1-A	Method Blank	Total/NA	Water	245.1	282436
LCS 570-282436/2-A	Lab Control Sample	Total/NA	Water	245.1	282436
LCSD 570-282436/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	282436

General Chemistry

Analysis Batch: 281263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Total/NA	Water	SM 2540D	
MB 570-281263/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-281263/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-281263/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Geotechnical

Analysis Batch: 284091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Total/NA	Water	D4464	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-1

Client Sample ID: EVBMP0003S033

Date Collected: 11/08/22 09:00
Date Received: 11/09/22 17:55

Lab Sample ID: 570-116620-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	280386	11/10/22 13:50	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			280422	11/10/22 15:20	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Total Recoverable	Prep	200.8			50 mL	50 mL	280956	11/12/22 07:20	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			281287	11/14/22 13:29	Y2WS	EET CAL 4
	Instrument ID:	ICPMS09								
Dissolved	Filtration	Filtration			25 mL	25 mL	280412	11/10/22 14:19	ECX6	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	280420	11/11/22 13:10	ECX6	EET CAL 4
Dissolved	Analysis	245.1		1			280878	11/11/22 15:26	C0YH	EET CAL 4
	Instrument ID:	HG8								
Total/NA	Prep	245.1			25 mL	50 mL	282436	11/17/22 16:15	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			282791	11/18/22 17:39	C0YH	EET CAL 4
	Instrument ID:	HG7								
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	281263	11/14/22 13:50	U7UR	EET CAL 4
	Instrument ID:	NOEQUIP								
Total/NA	Analysis	D4464		1			284091	11/23/22 15:58	SP9M	EET CAL 4
	Instrument ID:	NOEQUIP								

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc. Job ID: 570-116620-1
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8		Water	Cadmium
200.8		Water	Copper
200.8		Water	Lead
200.8	200.8	Water	Cadmium
200.8	200.8	Water	Copper
200.8	200.8	Water	Lead
245.1	245.1	Water	Mercury
D4464		Water	Clay (less than 0.00391 mm)
D4464		Water	Coarse Sand (0.5mm to 1mm)
D4464		Water	Fine Sand (0.125 to 0.25mm)
D4464		Water	Gravel (greater than 2 mm)
D4464		Water	Medium Sand (0.25 to 0.5 mm)
D4464		Water	Silt (0.00391 to 0.0625mm)
D4464		Water	Total Silt and Clay (0 to 0.0626mm)
D4464		Water	Very Coarse Sand (1 to 2mm)
D4464		Water	Very Fine Sand (0.0625 to 0.125 mm)

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-1

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-116620-1	EVBMP0003S033	Water	11/08/22 09:00	11/09/22 17:55

116620

Chain of Custody Record

COC Number: CALS11082201

JACOBS

11/9/2022 8:28 46 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	200.8/245.1	200.8/245.1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0003S033	08-Nov-22 9.00	N	Water								
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☑
TSS				4'C	☐	1	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☑	☐	☐
				Total Containers:		6					

570-116620 Chain of Custody

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	BRYAN BENSON	900 /110822
Relinquished by	BRYAN BENSON	950 110922
Received by	EC	11/9/22 1304
Relinquished by	EC	11/09/22 1755
Received by		11/9/22 1755

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** 1.8/1.6 5c12

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

11622

[4] *Dioxin congeners to be analyzed are as follows.*

2,3,7,8-tetrachlorodibenzo-p-dioxin
1,2,3,7,8-pentachlorodibenzo-p-dioxin
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin
1,2,3,6,7,8-hexachlorodibenzo-p-dioxin
1,2,3,7,8,9- hexachlorodibenzo-p-dioxin
1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin
1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin
2,3,7,8-tetrachlorodibenzofuran
1,2,3,7,8-pentachlorodibenzofuran
2,3,4,7,8- pentachlorodibenzofuran
1,2,3,4,7,8-hexachlorodibenzofuran
1,2,3,6,7,8-hexachlorodibenzofuran
1,2,3,7,8,9-hexachlorodibenzofuran
2,3,4,6,7,8-hexachlorodibenzofuran
1,2,3,4,6,7,8-heptachlorodibenzofuran
1,2,3,4,7,8,9-heptachlorodibenzofuran
1,2,3,4,6,7,8,9-octachlorodibenzofuran

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-196948.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-116620-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 11/22/2022			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EVBMP0003S033 (570-116620-1)	11/8/22	09:00 Pacific		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	11/15/22 11:09	FC	[signature]	11.16.22 925	BETSNC

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
Δ Yes Δ No	Seal	17c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-116620-1

Login Number: 116620
List Number: 1
Creator: Patel, Jayesh

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

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JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-116620-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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12/5/2022 4:35:47 PM

Authorized for release by
Lori Thompson, Project Manager I
Lori.Thompson@et.eurofinsus.com
(657)212-3035

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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
E	Result exceeded calibration range.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-116620-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-116620-2

Comments
No additional comments.

Receipt
The sample was received on 11/9/2022 5:55 PM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.6º C.

Dioxin
Method 8290: The concentration of one analyte (OCDD) associated with the following sample exceeded the instrument calibration range: EVBMP0003S033 (570-116620-1). This analyte has been qualified; however, the peak did not saturate the instrument detector. Historical data indicate that for the isotope dilution method, dilution and re-analysis will not produce significantly different results from those reported above the calibration range.

Method 8290: The following sample exhibited elevated noise or matrix interferences for one analyte (OCDD) causing elevation of the detection limit (EDL): EVBMP0003S033 (570-116620-1) . The reporting limit (RL) for the affected analytes has been raised to be equal to the EDL, and a "G" qualifier applied.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-2

Client Sample ID: EVBMP0003S033

Lab Sample ID: 570-116620-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF	2.1	J q	9.6	0.25	pg/L	1		8290	Total/NA
1,2,3,7,8-PeCDD	3.6	J q	48	0.94	pg/L	1		8290	Total/NA
1,2,3,7,8-PeCDF	3.4	J	48	0.82	pg/L	1		8290	Total/NA
2,3,4,7,8-PeCDF	4.7	J	48	1.0	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDD	33	J B	48	2.1	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	250	B	48	2.3	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	72	B	48	2.0	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDF	40	J B	48	2.4	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDF	23	J B	48	2.3	pg/L	1		8290	Total/NA
2,3,4,6,7,8-HxCDF	21	J B	48	2.2	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	3.4	J B	48	2.5	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	4900	B	48	25	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	810	B	48	8.7	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	49	B	48	9.2	pg/L	1		8290	Total/NA
OCDD	68000	G E B	100	100	pg/L	1		8290	Total/NA
OCDF	2700	B	96	3.9	pg/L	1		8290	Total/NA

This Detection Summary does not include radiochemical test results.

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EVBMP0003S033
Date Collected: 11/08/22 09:00
Date Received: 11/09/22 17:55

Lab Sample ID: 570-116620-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.6	0.50	pg/L		11/22/22 14:13	12/01/22 14:45	1
2,3,7,8-TCDF	**2.1**	**J q**	9.6	0.25	pg/L		11/22/22 14:13	12/01/22 14:45	1
1,2,3,7,8-PeCDD	**3.6**	**J q**	48	0.94	pg/L		11/22/22 14:13	12/01/22 14:45	1
1,2,3,7,8-PeCDF	**3.4**	**J**	48	0.82	pg/L		11/22/22 14:13	12/01/22 14:45	1
2,3,4,7,8-PeCDF	**4.7**	**J**	48	1.0	pg/L		11/22/22 14:13	12/01/22 14:45	1
1,2,3,4,7,8-HxCDD	**33**	**J B**	48	2.1	pg/L		11/22/22 14:13	12/01/22 14:45	1
1,2,3,6,7,8-HxCDD	**250**	**B**	48	2.3	pg/L		11/22/22 14:13	12/01/22 14:45	1
1,2,3,7,8,9-HxCDD	**72**	**B**	48	2.0	pg/L		11/22/22 14:13	12/01/22 14:45	1
1,2,3,4,7,8-HxCDF	**40**	**J B**	48	2.4	pg/L		11/22/22 14:13	12/01/22 14:45	1
1,2,3,6,7,8-HxCDF	**23**	**J B**	48	2.3	pg/L		11/22/22 14:13	12/01/22 14:45	1
2,3,4,6,7,8-HxCDF	**21**	**J B**	48	2.2	pg/L		11/22/22 14:13	12/01/22 14:45	1
1,2,3,7,8,9-HxCDF	**3.4**	**J B**	48	2.5	pg/L		11/22/22 14:13	12/01/22 14:45	1
1,2,3,4,6,7,8-HpCDD	**4900**	**B**	48	25	pg/L		11/22/22 14:13	12/01/22 14:45	1
1,2,3,4,6,7,8-HpCDF	**810**	**B**	48	8.7	pg/L		11/22/22 14:13	12/01/22 14:45	1
1,2,3,4,7,8,9-HpCDF	**49**	**B**	48	9.2	pg/L		11/22/22 14:13	12/01/22 14:45	1
OCDD	**68000**	**G E B**	100	100	pg/L		11/22/22 14:13	12/01/22 14:45	1
OCDF	**2700**	**B**	96	3.9	pg/L		11/22/22 14:13	12/01/22 14:45	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*74*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-2,3,7,8-TCDF	*62*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-1,2,3,7,8-PeCDD	*91*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-1,2,3,7,8-PeCDF	*83*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-1,2,3,6,7,8-HxCDD	*76*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-1,2,3,4,7,8-HxCDF	*75*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*97*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*78*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-OCDD	*96*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-1,2,3,7,8,9-HxCDF	*80*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-OCDF	*100*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-1,2,3,6,7,8-HxCDF	*79*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-2,3,4,7,8-PeCDF	*72*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-2,3,4,6,7,8-HxCDF	*85*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*92*		*40 - 135*	*11/22/22 14:13*	*12/01/22 14:45*	*1*

Isotope Dilution Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-2

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (40-135)	TCDF (40-135)	PeCDD (40-135)	PeCDF (40-135)	HxDD (40-135)	HxCDF (40-135)	HpCDD (40-135)	HpCDF (40-135)
570-116620-1	EVBMP0003S033	74	62	91	83	76	75	97	78
LCS 320-634814/2-A	Lab Control Sample	80	65	96	86	81	76	103	83
LCSD 320-634814/3-A	Lab Control Sample Dup	75	67	91	86	86	86	97	84
MB 320-634814/1-A	Method Blank	79	64	98	86	92	91	100	88

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	OCDD (40-135)	HxCF (40-135)	OCDF (40-135)	HxCDD (40-135)	HxDF (40-135)	PeCF (40-135)	13CHxCF (40-135)	HpCDF2 (40-135)
570-116620-1	EVBMP0003S033	96	80	100	77	79	72	85	92
LCS 320-634814/2-A	Lab Control Sample	83	88	93	79	82	73	94	99
LCSD 320-634814/3-A	Lab Control Sample Dup	84	86	90	88	92	83	95	93
MB 320-634814/1-A	Method Blank	84	89	92	95	94	84	97	98

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
OCDD = 13C-OCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
OCDF = 13C-OCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxDF = 13C-1,2,3,6,7,8-HxCDF
PeCF = 13C-2,3,4,7,8-PeCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-634814/1-A
Matrix: Water
Analysis Batch: 636447

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 634814

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.47	pg/L		11/22/22 14:13	12/01/22 12:22	1
2,3,7,8-TCDF	ND		10	0.13	pg/L		11/22/22 14:13	12/01/22 12:22	1
1,2,3,7,8-PeCDD	ND		50	0.39	pg/L		11/22/22 14:13	12/01/22 12:22	1
1,2,3,7,8-PeCDF	ND		50	0.13	pg/L		11/22/22 14:13	12/01/22 12:22	1
2,3,4,7,8-PeCDF	ND		50	0.15	pg/L		11/22/22 14:13	12/01/22 12:22	1
1,2,3,4,7,8-HxCDD	3.214	J	50	0.18	pg/L		11/22/22 14:13	12/01/22 12:22	1
1,2,3,6,7,8-HxCDD	1.533	J q	50	0.21	pg/L		11/22/22 14:13	12/01/22 12:22	1
1,2,3,7,8,9-HxCDD	2.134	J	50	0.18	pg/L		11/22/22 14:13	12/01/22 12:22	1
1,2,3,4,7,8-HxCDF	1.443	J q	50	0.14	pg/L		11/22/22 14:13	12/01/22 12:22	1
1,2,3,6,7,8-HxCDF	1.222	J	50	0.14	pg/L		11/22/22 14:13	12/01/22 12:22	1
2,3,4,6,7,8-HxCDF	1.446	J	50	0.14	pg/L		11/22/22 14:13	12/01/22 12:22	1
1,2,3,7,8,9-HxCDF	1.286	J q	50	0.17	pg/L		11/22/22 14:13	12/01/22 12:22	1
1,2,3,4,6,7,8-HpCDD	3.349	J	50	0.12	pg/L		11/22/22 14:13	12/01/22 12:22	1
1,2,3,4,6,7,8-HpCDF	3.123	J	50	0.24	pg/L		11/22/22 14:13	12/01/22 12:22	1
1,2,3,4,7,8,9-HpCDF	2.554	J	50	0.28	pg/L		11/22/22 14:13	12/01/22 12:22	1
OCDD	10.28	J	100	0.13	pg/L		11/22/22 14:13	12/01/22 12:22	1
OCDF	5.654	J	100	0.47	pg/L		11/22/22 14:13	12/01/22 12:22	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-2,3,7,8-TCDF	*64*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-1,2,3,7,8-PeCDD	*98*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-1,2,3,7,8-PeCDF	*86*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-1,2,3,6,7,8-HxCDD	*92*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-1,2,3,4,7,8-HxCDF	*91*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*100*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*88*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-OCDD	*84*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-1,2,3,7,8,9-HxCDF	*89*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-OCDF	*92*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-1,2,3,4,7,8-HxCDD	*95*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-1,2,3,6,7,8-HxCDF	*94*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-2,3,4,7,8-PeCDF	*84*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-2,3,4,6,7,8-HxCDF	*97*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*98*		*40 - 135*	*11/22/22 14:13*	*12/01/22 12:22*	*1*

Lab Sample ID: LCS 320-634814/2-A
Matrix: Water
Analysis Batch: 636447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 634814

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	200	197.6		pg/L		99	72 - 128
2,3,7,8-TCDF	200	234.8		pg/L		117	67 - 135
1,2,3,7,8-PeCDD	1000	954.2		pg/L		95	71 - 135
1,2,3,7,8-PeCDF	1000	973.5		pg/L		97	70 - 133
2,3,4,7,8-PeCDF	1000	916.4		pg/L		92	69 - 135
1,2,3,4,7,8-HxCDD	1000	932.8		pg/L		93	67 - 130
1,2,3,6,7,8-HxCDD	1000	1079		pg/L		108	61 - 144
1,2,3,7,8,9-HxCDD	1000	1100		pg/L		110	61 - 140

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-634814/2-A
Matrix: Water
Analysis Batch: 636447

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 634814

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3,4,7,8-HxCDF			1000	1026		pg/L		103	69 - 140		
1,2,3,6,7,8-HxCDF			1000	1029		pg/L		103	62 - 155		
2,3,4,6,7,8-HxCDF			1000	1049		pg/L		105	70 - 146		
1,2,3,7,8,9-HxCDF			1000	1048		pg/L		105	71 - 142		
1,2,3,4,6,7,8-HpCDD			1000	960.3		pg/L		96	71 - 134		
1,2,3,4,6,7,8-HpCDF			1000	1141		pg/L		114	68 - 137		
1,2,3,4,7,8,9-HpCDF			1000	999.0		pg/L		100	74 - 134		
OCDD			2000	2328		pg/L		116	72 - 134		
OCDF			2000	2147		pg/L		107	65 - 143		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*80*		*40 - 135*
13C-2,3,7,8-TCDF	*65*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*96*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*86*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*81*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*76*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*103*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*40 - 135*
13C-OCDD	*83*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*88*		*40 - 135*
13C-OCDF	*93*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*79*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*82*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*73*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*94*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*99*		*40 - 135*

Lab Sample ID: LCSD 320-634814/3-A
Matrix: Water
Analysis Batch: 636447

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 634814

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			200	210.8		pg/L		105	72 - 128	6	20
2,3,7,8-TCDF			200	232.2		pg/L		116	67 - 135	1	20
1,2,3,7,8-PeCDD			1000	994.9		pg/L		99	71 - 135	4	20
1,2,3,7,8-PeCDF			1000	950.7		pg/L		95	70 - 133	2	20
2,3,4,7,8-PeCDF			1000	946.9		pg/L		95	69 - 135	3	20
1,2,3,4,7,8-HxCDD			1000	960.2		pg/L		96	67 - 130	3	20
1,2,3,6,7,8-HxCDD			1000	1098		pg/L		110	61 - 144	2	20
1,2,3,7,8,9-HxCDD			1000	1010		pg/L		101	61 - 140	9	20
1,2,3,4,7,8-HxCDF			1000	1036		pg/L		104	69 - 140	1	20
1,2,3,6,7,8-HxCDF			1000	1037		pg/L		104	62 - 155	1	20
2,3,4,6,7,8-HxCDF			1000	1050		pg/L		105	70 - 146	0	20
1,2,3,7,8,9-HxCDF			1000	1045		pg/L		104	71 - 142	0	20
1,2,3,4,6,7,8-HpCDD			1000	994.1		pg/L		99	71 - 134	3	20
1,2,3,4,6,7,8-HpCDF			1000	1150		pg/L		115	68 - 137	1	20
1,2,3,4,7,8,9-HpCDF			1000	999.7		pg/L		100	74 - 134	0	20
OCDD			2000	2235		pg/L		112	72 - 134	4	20

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-634814/3-A
Matrix: Water
Analysis Batch: 636447

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 634814

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
OCDF			2000	2185		pg/L		109	65 - 143	2	20

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*75*		*40 - 135*
13C-2,3,7,8-TCDF	*67*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*91*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*86*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*86*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*86*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*97*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*84*		*40 - 135*
13C-OCDD	*84*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*86*		*40 - 135*
13C-OCDF	*90*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*88*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*92*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*83*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*95*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*93*		*40 - 135*

Specialty Organics

Prep Batch: 634814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Total/NA	Water	8290	
MB 320-634814/1-A	Method Blank	Total/NA	Water	8290	
LCS 320-634814/2-A	Lab Control Sample	Total/NA	Water	8290	
LCSD 320-634814/3-A	Lab Control Sample Dup	Total/NA	Water	8290	

Analysis Batch: 636447

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-116620-1	EVBMP0003S033	Total/NA	Water	8290	634814
MB 320-634814/1-A	Method Blank	Total/NA	Water	8290	634814
LCS 320-634814/2-A	Lab Control Sample	Total/NA	Water	8290	634814
LCSD 320-634814/3-A	Lab Control Sample Dup	Total/NA	Water	8290	634814

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-2

Client Sample ID: EVBMP0003S033

Date Collected: 11/08/22 09:00
Date Received: 11/09/22 17:55

Lab Sample ID: 570-116620-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1045.6 mL	20.0 uL	634814	11/22/22 14:13	CGB	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	636447	12/01/22 14:45	GRB	EET SAC
	Instrument ID: DFS 1									

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc. Job ID: 570-116620-2
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2897	01-31-23

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-2

Method	Method Description	Protocol	Laboratory
8290	Dioxins and Furans (HRGC/HRMS)	SW846	EET SAC
8290	Separatory Funnel (Liquid-Liquid) Extraction of Dioxins and Furans	SW846	EET SAC

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-116620-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-116620-1	EVBMP0003S033	Water	11/08/22 09:00	11/09/22 17:55

116620

Chain of Custody Record

COC Number: CALS11082201

JACOBS

11/9/2022 8:28 46 AM

Project Name	SSFL
Project	CJ042 Stormwater PO 148015891
Location	Santa Susana Field Lab
Project Number	D3377900
Task Order	42
PO Number	148015891
Turnaround Time	10 Days
Project Manager	Randy Dean
Sample Manager	

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	200.8/245.1	200.8/245.1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0003S033	08-Nov-22 9.00	N	Water								
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☑
TSS				4'C	☐	1	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☑	☐	☐
				Total Containers:		6					

570-116620 Chain of Custody

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	BRYAN BENSON	900 / 110822
Relinquished by	BRYAN BENSON	950 110922
Received by	EC	11/9/22 1304
Relinquished by	EC	11/09/22 1755
Received by		11/9/22 1755

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** 1.8/1.6 sc12

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

11622

[4] *Dioxin congeners to be analyzed are as follows.*

2,3,7,8-tetrachlorodibenzo-p-dioxin
1,2,3,7,8-pentachlorodibenzo-p-dioxin
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin
1,2,3,6,7,8-hexachlorodibenzo-p-dioxin
1,2,3,7,8,9- hexachlorodibenzo-p-dioxin
1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin
1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin
2,3,7,8-tetrachlorodibenzofuran
1,2,3,7,8-pentachlorodibenzofuran
2,3,4,7,8- pentachlorodibenzofuran
1,2,3,4,7,8-hexachlorodibenzofuran
1,2,3,6,7,8-hexachlorodibenzofuran
1,2,3,7,8,9-hexachlorodibenzofuran
2,3,4,6,7,8-hexachlorodibenzofuran
1,2,3,4,6,7,8-heptachlorodibenzofuran
1,2,3,4,7,8,9-heptachlorodibenzofuran
1,2,3,4,6,7,8,9-octachlorodibenzofuran

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-116620-2

Login Number: 116620
List Number: 1
Creator: Patel, Jayesh

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-116620-2

Login Number: 116620
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 11/16/22 02:04 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

Generated 1/11/2023 10:18:49 AM

JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-120399-1

Eurofins Calscience
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See page two for job notes and contact information.

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Job Notes

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Authorization



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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Geotechnical

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-120399-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-120399-1

Comments
No additional comments.

Receipt
The samples were received on 12/12/2022 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.2º C.

Receipt Exceptions
The number of containers for the following samples did not match the information listed on the Chain-of-Custody (COC): A2BMP0012S011 (570-120399-1). Received 5 containers, while the COC lists 7: (2) 500mL Plastic containers for particle size distribution not received.

Dioxin
Method 8290: The bracketing continuing calibration verification (CCV) associated with batch 320-645006 has the isotope dilution analyte (IDA) 13C-1,2,3,7,8-PeCDF with a percent difference value that is between the method criteria of 30% to 35% deviation from the initial calibration curve. Per method guidelines, an average relative response factor (RRF) is calculated from the bracketing CCV and is used to quantitate the Isotope Dilution Analyte (IDA) recovery in the associated samples.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: A2BMP0012S011 (570-120399-1) and EVBMP0003S034 (570-120399-2). The samples were filtered prior to analysis at the laboratory, and the results have been reported.

Method 245.1: The continuing calibration verification (CCV) associated with batch 570-290732 recovered above the upper control limit for Mercury. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is: (CCV 570-290593/9-A).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin Prep
Method 8290: Elevated reporting limits are provided for the following samples due to insufficient sample provided for preparation: A2BMP0012S011 (570-120399-1) and EVBMP0003S034 (570-120399-2).
Nominal volume required by method is 1 liter.
preparation batch 320-643486
method: 8290_P_Sep
matrix: Water

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

Client Sample ID: A2BMP0012S011 — Lab Sample ID: 570-120399-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	2.7	J B q	69	0.099	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	1.4	J q	69	0.11	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	1.9	J B	69	0.095	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDF	1.3	J	69	0.12	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDF	0.90	J	69	0.12	pg/L	1		8290	Total/NA
2,3,4,6,7,8-HxCDF	0.86	J q	69	0.11	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	1.7	J B	69	0.12	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	16	J B	69	0.39	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	3.7	J B	69	0.14	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	1.1	J B q	69	0.15	pg/L	1		8290	Total/NA
OCDD	230	B	140	0.37	pg/L	1		8290	Total/NA
OCDF	8.5	J B	140	0.14	pg/L	1		8290	Total/NA
Copper	2.33		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	1.34		1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	2.37	H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.159	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Turbidity	3.7		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	6.57		1.43	1.18	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0003S034 — Lab Sample ID: 570-120399-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	3.1	J B	67	0.20	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	3.4	J q	67	0.22	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	2.4	J B	67	0.19	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	1.1	J B	67	0.14	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	44	J B	67	0.55	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	10	J B	67	0.27	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	1.1	J B	67	0.29	pg/L	1		8290	Total/NA
OCDD	330	B	130	0.65	pg/L	1		8290	Total/NA
OCDF	16	J B	130	0.085	pg/L	1		8290	Total/NA
Copper	4.23		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	3.58		1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.09	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.232	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Total Suspended Solids	65.5		5.00	4.14	mg/L	1		SM 2540D	Total/NA
Clay (less than 0.00391 mm)	5.47		0.01	0.01	%	1		D4464	Total/NA
Coarse Sand (0.5mm to 1mm)	5.06		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	14.75		0.01	0.01	%	1		D4464	Total/NA
Medium Sand (0.25 to 0.5 mm)	14.11		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	41.20		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	46.67		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	19.41		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: A2BMP0012S011
Date Collected: 12/11/22 10:25
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		14	0.044	pg/L		12/30/22 04:42	01/06/23 13:13	1
2,3,7,8-TCDF	ND		14	0.020	pg/L		12/30/22 04:42	01/06/23 13:13	1
1,2,3,7,8-PeCDD	ND		69	0.23	pg/L		12/30/22 04:42	01/06/23 13:13	1
1,2,3,7,8-PeCDF	ND		69	0.071	pg/L		12/30/22 04:42	01/06/23 13:13	1
2,3,4,7,8-PeCDF	ND		69	0.077	pg/L		12/30/22 04:42	01/06/23 13:13	1
1,2,3,4,7,8-HxCDD	**2.7**	**J B q**	69	0.099	pg/L		12/30/22 04:42	01/06/23 13:13	1
1,2,3,6,7,8-HxCDD	**1.4**	**J q**	69	0.11	pg/L		12/30/22 04:42	01/06/23 13:13	1
1,2,3,7,8,9-HxCDD	**1.9**	**J B**	69	0.095	pg/L		12/30/22 04:42	01/06/23 13:13	1
1,2,3,4,7,8-HxCDF	**1.3**	**J**	69	0.12	pg/L		12/30/22 04:42	01/06/23 13:13	1
1,2,3,6,7,8-HxCDF	**0.90**	**J**	69	0.12	pg/L		12/30/22 04:42	01/06/23 13:13	1
2,3,4,6,7,8-HxCDF	**0.86**	**J q**	69	0.11	pg/L		12/30/22 04:42	01/06/23 13:13	1
1,2,3,7,8,9-HxCDF	**1.7**	**J B**	69	0.12	pg/L		12/30/22 04:42	01/06/23 13:13	1
1,2,3,4,6,7,8-HpCDD	**16**	**J B**	69	0.39	pg/L		12/30/22 04:42	01/06/23 13:13	1
1,2,3,4,6,7,8-HpCDF	**3.7**	**J B**	69	0.14	pg/L		12/30/22 04:42	01/06/23 13:13	1
1,2,3,4,7,8,9-HpCDF	**1.1**	**J B q**	69	0.15	pg/L		12/30/22 04:42	01/06/23 13:13	1
OCDD	**230**	**B**	140	0.37	pg/L		12/30/22 04:42	01/06/23 13:13	1
OCDF	**8.5**	**J B**	140	0.14	pg/L		12/30/22 04:42	01/06/23 13:13	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*82*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-2,3,7,8-TCDF	*64*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-1,2,3,7,8-PeCDD	*98*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-1,2,3,7,8-PeCDF	*106*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-1,2,3,6,7,8-HxCDD	*79*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-2,3,4,7,8-PeCDF	*105*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-1,2,3,4,7,8-HxCDD	*94*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-1,2,3,4,7,8-HxCDF	*91*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*92*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-1,2,3,6,7,8-HxCDF	*85*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-OCDD	*72*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-1,2,3,7,8,9-HxCDF	*90*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-2,3,4,6,7,8-HxCDF	*90*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*91*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*
13C-OCDF	*77*		*40 - 135*	*12/30/22 04:42*	*01/06/23 13:13*	*1*

Client Sample ID: EVBMP0003S034
Date Collected: 12/11/22 10:14
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		13	0.11	pg/L		12/30/22 04:42	01/06/23 14:01	1
2,3,7,8-TCDF	ND		13	0.044	pg/L		12/30/22 04:42	01/06/23 14:01	1
1,2,3,7,8-PeCDD	ND		67	0.050	pg/L		12/30/22 04:42	01/06/23 14:01	1
1,2,3,7,8-PeCDF	ND		67	0.067	pg/L		12/30/22 04:42	01/06/23 14:01	1
2,3,4,7,8-PeCDF	ND		67	0.075	pg/L		12/30/22 04:42	01/06/23 14:01	1
1,2,3,4,7,8-HxCDD	**3.1**	**J B**	67	0.20	pg/L		12/30/22 04:42	01/06/23 14:01	1
1,2,3,6,7,8-HxCDD	**3.4**	**J q**	67	0.22	pg/L		12/30/22 04:42	01/06/23 14:01	1
1,2,3,7,8,9-HxCDD	**2.4**	**J B**	67	0.19	pg/L		12/30/22 04:42	01/06/23 14:01	1
1,2,3,4,7,8-HxCDF	ND		67	0.13	pg/L		12/30/22 04:42	01/06/23 14:01	1
1,2,3,6,7,8-HxCDF	ND		67	0.14	pg/L		12/30/22 04:42	01/06/23 14:01	1

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0003S034
Date Collected: 12/11/22 10:14
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,6,7,8-HxCDF	ND		67	0.13	pg/L		12/30/22 04:42	01/06/23 14:01	1
1,2,3,7,8,9-HxCDF	**1.1**	**J B**	67	0.14	pg/L		12/30/22 04:42	01/06/23 14:01	1
1,2,3,4,6,7,8-HpCDD	**44**	**J B**	67	0.55	pg/L		12/30/22 04:42	01/06/23 14:01	1
1,2,3,4,6,7,8-HpCDF	**10**	**J B**	67	0.27	pg/L		12/30/22 04:42	01/06/23 14:01	1
1,2,3,4,7,8,9-HpCDF	**1.1**	**J B**	67	0.29	pg/L		12/30/22 04:42	01/06/23 14:01	1
OCDD	**330**	**B**	130	0.65	pg/L		12/30/22 04:42	01/06/23 14:01	1
OCDF	**16**	**J B**	130	0.085	pg/L		12/30/22 04:42	01/06/23 14:01	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*81*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-2,3,7,8-TCDF	*65*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-1,2,3,7,8-PeCDD	*105*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-1,2,3,7,8-PeCDF	*113*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-1,2,3,6,7,8-HxCDD	*80*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-2,3,4,7,8-PeCDF	*113*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-1,2,3,4,7,8-HxCDD	*95*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-1,2,3,4,7,8-HxCDF	*90*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*92*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*85*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-1,2,3,6,7,8-HxCDF	*85*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-OCDD	*73*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-1,2,3,7,8,9-HxCDF	*89*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-2,3,4,6,7,8-HxCDF	*89*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*92*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*
13C-OCDF	*78*		*40 - 135*	*12/30/22 04:42*	*01/06/23 14:01*	*1*

Client Sample Results

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: A2BMP0012S011
Date Collected: 12/11/22 10:25
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		12/14/22 09:49	12/14/22 14:51	1
Copper	**2.33**		2.00	0.318	ug/L		12/14/22 09:49	12/14/22 14:51	1
Lead	**1.34**		1.00	0.118	ug/L		12/14/22 09:49	12/14/22 14:51	1

Client Sample ID: EVBMP0003S034
Date Collected: 12/11/22 10:14
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		12/14/22 09:49	12/14/22 14:49	1
Copper	**4.23**		2.00	0.318	ug/L		12/14/22 09:49	12/14/22 14:49	1
Lead	**3.58**		1.00	0.118	ug/L		12/14/22 09:49	12/14/22 14:49	1

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: A2BMP0012S011
Date Collected: 12/11/22 10:25
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			12/15/22 10:03	1
Copper	**2.37**	**H**	2.00	0.318	ug/L			12/15/22 10:03	1
Lead	**0.159**	**J H**	1.00	0.118	ug/L			12/15/22 10:03	1

Client Sample ID: EVBMP0003S034
Date Collected: 12/11/22 10:14
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			12/15/22 10:05	1
Copper	**1.09**	**J H**	2.00	0.318	ug/L			12/15/22 10:05	1
Lead	**0.232**	**J H**	1.00	0.118	ug/L			12/15/22 10:05	1

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: A2BMP0012S011
Date Collected: 12/11/22 10:25
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		12/20/22 13:10	12/21/22 14:57	1

Client Sample ID: EVBMP0003S034
Date Collected: 12/11/22 10:14
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		12/20/22 13:10	12/21/22 14:59	1

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: A2BMP0012S011
Date Collected: 12/11/22 10:25
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		12/14/22 17:22	12/15/22 15:20	1

Client Sample ID: EVBMP0003S034
Date Collected: 12/11/22 10:14
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		12/14/22 17:22	12/15/22 15:22	1

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

General Chemistry

Client Sample ID: A2BMP0012S011
Date Collected: 12/11/22 10:25
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	3.7		0.05	0.05	NTU			12/13/22 01:49	1
Total Suspended Solids (SM 2540D)	6.57		1.43	1.18	mg/L			12/14/22 18:39	1

Client Sample ID: EVBMP0003S034
Date Collected: 12/11/22 10:14
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	65.5		5.00	4.14	mg/L			12/14/22 18:39	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: A2BMP0012S011
Date Collected: 12/11/22 10:25
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			12/14/22 12:14	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			12/14/22 12:14	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			12/14/22 12:14	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			12/14/22 12:14	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			12/14/22 12:14	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			12/14/22 12:14	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			12/14/22 12:14	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			12/14/22 12:14	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			12/14/22 12:14	1

Client Sample ID: EVBMP0003S034
Date Collected: 12/11/22 10:14
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**5.47**		0.01	0.01	%			12/14/22 12:21	1
Coarse Sand (0.5mm to 1mm)	**5.06**		0.01	0.01	%			12/14/22 12:21	1
Fine Sand (0.125 to 0.25mm)	**14.75**		0.01	0.01	%			12/14/22 12:21	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			12/14/22 12:21	1
Medium Sand (0.25 to 0.5 mm)	**14.11**		0.01	0.01	%			12/14/22 12:21	1
Silt (0.00391 to 0.0625mm)	**41.20**		0.01	0.01	%			12/14/22 12:21	1
Total Silt and Clay (0 to 0.0626mm)	**46.67**		0.01	0.01	%			12/14/22 12:21	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			12/14/22 12:21	1
Very Fine Sand (0.0625 to 0.125 mm)	**19.41**		0.01	0.01	%			12/14/22 12:21	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	12/11/22
Date Received:	12/12/22
Work Order No:	570-120399
Date Analyzed:	12/14/22
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0003S034		Fine Sand	0.177

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	10.49	17.57	13.18	13.78	40.30	4.67	44.97

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

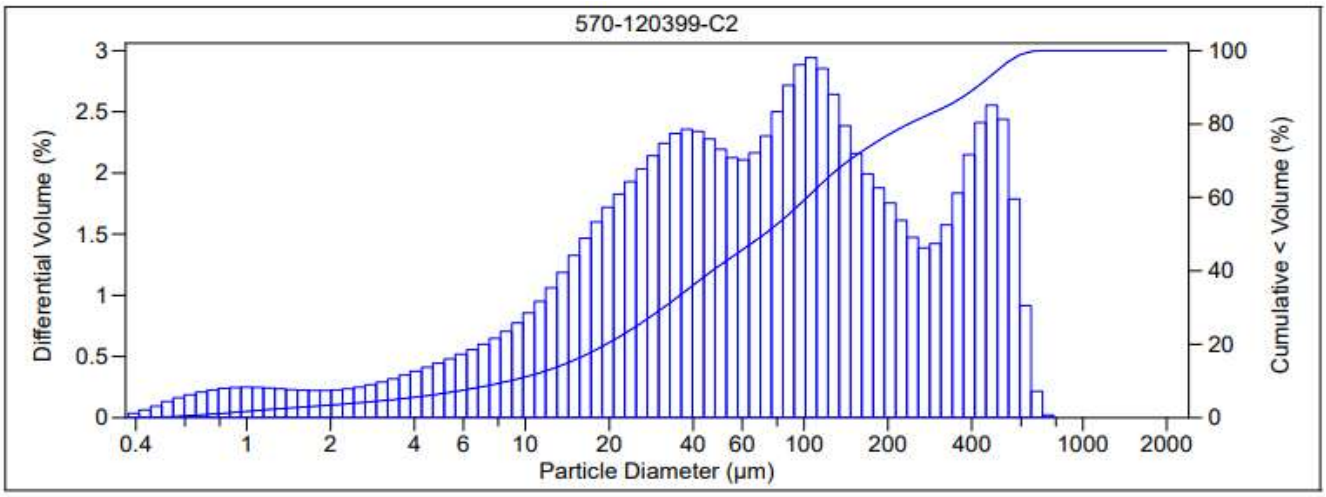
Jacobs Engineering Group, Inc.

Date Sampled:	12/11/22
Date Received:	12/12/22
Work Order No:	570-120399
Date Analyzed:	12/14/22
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0003S034		Fine Sand	0.137

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	5.06	14.11	14.75	19.41	41.20	5.47	46.67



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	12/11/22
Date Received:	12/12/22
Work Order No:	570-120399
Date Analyzed:	12/14/22
Method:	ASTM D4464M

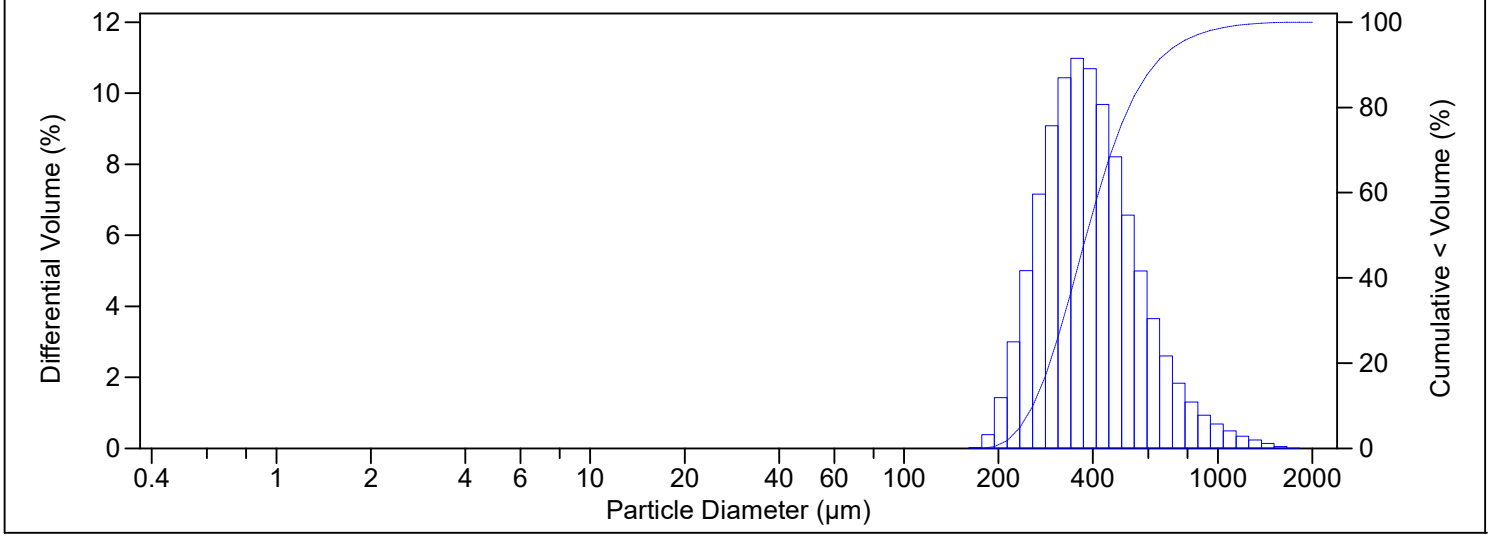
Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
A2BMP0012S011		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

File name:	C:\LS13320\STD SAND_14 Dec 2022_15.52.35.$ls		
	STD SAND_14 Dec 2022_15.52.35.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	SP9M		
Run number:	14		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.68%		
LS 13 320	Aqueous Liquid Module		
Start time:	15:51 14 Dec 2022	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_14 Dec 2022_15.52.35.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	422.4 µm	S.D.:	174.8 µm
Median:	381.6 µm	Variance:	30541 µm^2
Mean/Median ratio:	1.107	Skewness:	2.022 Right skewed
Mode:	356.1 µm	Kurtosis:	6.294 Leptokurtic

d_{10}: 257.5 µm d_{50}: 381.6 µm d_{90}: 631.7 µm

Folk and Ward Statistics (Phi)

Mean:	1.36	Median:	1.39	Deviation:	0.51
Skewness:	-0.13	Kurtosis:	1.03		

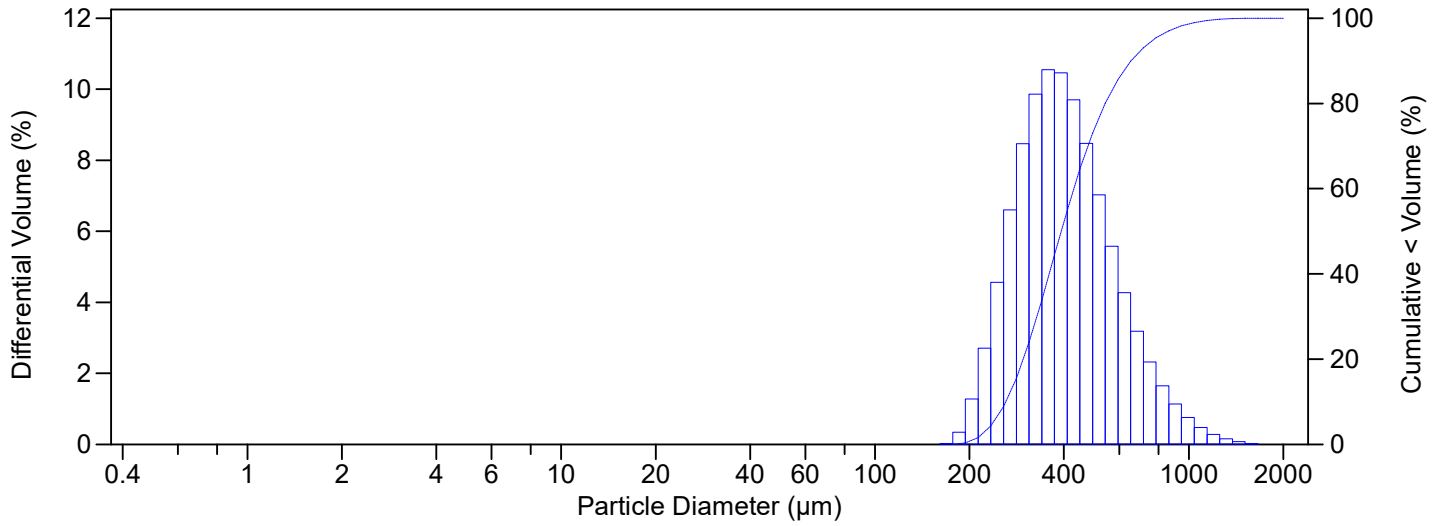
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
234.8 µm	278.5 µm	306.3 µm	350.4 µm	381.6 µm	487.7 µm	555.8 µm	756.8 µm

Particle Diameter µm	STD SAND _14 Dec 2022_15.52 .35.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	8.33
250	68.6
500	21.4
1000	1.58
2000	

STD SAND_14 Dec 2022_15.52.35.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.35
0.412	0	22.73	0	1255	0.23
0.452	0	24.95	0	1377	0.14
0.496	0	27.39	0	1512	0.055
0.545	0	30.07	0	1660	0.0051
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.026		
3.206	0	176.9	0.39		
3.519	0	194.2	1.43		
3.863	0	213.2	3.00		
4.241	0	234.1	5.01		
4.656	0	256.9	7.16		
5.111	0	282.1	9.08		
5.611	0	309.6	10.4		
6.159	0	339.9	11.0		
6.761	0	373.1	10.7		
7.422	0	409.6	9.68		
8.148	0	449.7	8.21		
8.944	0	493.6	6.57		
9.819	0	541.9	5.00		
10.78	0	594.9	3.66		
11.83	0	653.0	2.61		
12.99	0	716.9	1.84		
14.26	0	786.9	1.30		
15.65	0	863.9	0.94		
17.18	0	948.3	0.68		
18.86	0	1041	0.49		

File name:	C:\LS13320\STD SAND_14 Dec 2022_16.14.14.$ls		
	STD SAND_14 Dec 2022_16.14.14.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	SP9M		
Run number:	16		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.69%		
LS 13 320	Aqueous Liquid Module		
Start time:	16:13 14 Dec 2022	Run length:	60 seconds
Pump speed:	49		
Obscuration:	11%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_14 Dec 2022_16.14.14.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	433.0 µm	S.D.:	173.8 µm
Median:	392.7 µm	Variance:	30215 µm^2
Mean/Median ratio:	1.103	Skewness:	1.676 Right skewed
Mode:	356.1 µm	Kurtosis:	4.217 Leptokurtic

d_{10}: 261.1 µm d_{50}: 392.7 µm d_{90}: 654.7 µm

Folk and Ward Statistics (Phi)

Mean:	1.32	Median:	1.35	Deviation:	0.52
Skewness:	-0.12	Kurtosis:	1.00		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
237.3 µm	283.6 µm	312.7 µm	359.3 µm	392.7 µm	507.1 µm	579.3 µm	774.3 µm

Particle Diameter µm	STD SAND _14 Dec 2022_16.14 .14.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.53
250	66.4
500	24.7
1000	1.37
2000	

STD SAND_14 Dec 2022_16.14.14.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.28
0.412	0	22.73	0	1255	0.16
0.452	0	24.95	0	1377	0.081
0.496	0	27.39	0	1512	0.026
0.545	0	30.07	0	1660	0.0020
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.022		
3.206	0	176.9	0.34		
3.519	0	194.2	1.28		
3.863	0	213.2	2.71		
4.241	0	234.1	4.56		
4.656	0	256.9	6.60		
5.111	0	282.1	8.47		
5.611	0	309.6	9.86		
6.159	0	339.9	10.5		
6.761	0	373.1	10.5		
7.422	0	409.6	9.70		
8.148	0	449.7	8.47		
8.944	0	493.6	7.03		
9.819	0	541.9	5.58		
10.78	0	594.9	4.27		
11.83	0	653.0	3.18		
12.99	0	716.9	2.32		
14.26	0	786.9	1.65		
15.65	0	863.9	1.14		
17.18	0	948.3	0.76		
18.86	0	1041	0.48		

Isotope Dilution Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (40-135)	TCDF (40-135)	PeCDD (40-135)	PeCDF (40-135)	HxDD (40-135)	PeCF (40-135)	HxCDD (40-135)	HxCDF (40-135)
570-120399-1	A2BMP0012S011	82	64	98	106	79	105	94	91
570-120399-2	EVBMP0003S034	81	65	105	113	80	113	95	90
LCS 320-643486/2-A	Lab Control Sample	83	64	100	105	81	106	95	93
LCSD 320-643486/3-A	Lab Control Sample Dup	80	64	103	112	83	112	98	93
MB 320-643486/1-A	Method Blank	80	65	95	102	80	101	94	89

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (40-135)	HpCDF (40-135)	HxDF (40-135)	OCDD (40-135)	HxCF (40-135)	13CHxCF (40-135)	HpCDF2 (40-135)	OCDF (40-135)
570-120399-1	A2BMP0012S011	92	83	85	72	90	90	91	77
570-120399-2	EVBMP0003S034	92	85	85	73	89	89	92	78
LCS 320-643486/2-A	Lab Control Sample	93	85	85	75	90	90	94	80
LCSD 320-643486/3-A	Lab Control Sample Dup	93	88	88	76	91	91	96	79
MB 320-643486/1-A	Method Blank	90	83	83	72	91	89	90	77

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
OCDD = 13C-OCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDF = 13C-OCDF

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-643486/1-A
Matrix: Water
Analysis Batch: 645006

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 643486

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.042	pg/L		12/30/22 04:42	01/06/23 10:48	1
2,3,7,8-TCDF	ND		10	0.057	pg/L		12/30/22 04:42	01/06/23 10:48	1
1,2,3,7,8-PeCDD	ND		50	0.074	pg/L		12/30/22 04:42	01/06/23 10:48	1
1,2,3,7,8-PeCDF	ND		50	0.055	pg/L		12/30/22 04:42	01/06/23 10:48	1
2,3,4,7,8-PeCDF	ND		50	0.062	pg/L		12/30/22 04:42	01/06/23 10:48	1
1,2,3,4,7,8-HxCDD	1.904	J q	50	0.093	pg/L		12/30/22 04:42	01/06/23 10:48	1
1,2,3,6,7,8-HxCDD	ND		50	0.11	pg/L		12/30/22 04:42	01/06/23 10:48	1
1,2,3,7,8,9-HxCDD	0.8592	J	50	0.090	pg/L		12/30/22 04:42	01/06/23 10:48	1
1,2,3,4,7,8-HxCDF	ND		50	0.067	pg/L		12/30/22 04:42	01/06/23 10:48	1
1,2,3,6,7,8-HxCDF	ND		50	0.070	pg/L		12/30/22 04:42	01/06/23 10:48	1
2,3,4,6,7,8-HxCDF	ND		50	0.064	pg/L		12/30/22 04:42	01/06/23 10:48	1
1,2,3,7,8,9-HxCDF	0.7447	J	50	0.069	pg/L		12/30/22 04:42	01/06/23 10:48	1
1,2,3,4,6,7,8-HpCDD	2.664	J q	50	0.083	pg/L		12/30/22 04:42	01/06/23 10:48	1
1,2,3,4,6,7,8-HpCDF	2.818	J	50	0.070	pg/L		12/30/22 04:42	01/06/23 10:48	1
1,2,3,4,7,8,9-HpCDF	1.858	J q	50	0.080	pg/L		12/30/22 04:42	01/06/23 10:48	1
OCDD	4.844	J	100	0.095	pg/L		12/30/22 04:42	01/06/23 10:48	1
OCDF	1.953	J q	100	0.087	pg/L		12/30/22 04:42	01/06/23 10:48	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*80*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-2,3,7,8-TCDF	*65*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-1,2,3,7,8-PeCDD	*95*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-1,2,3,7,8-PeCDF	*102*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-1,2,3,6,7,8-HxCDD	*80*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-2,3,4,7,8-PeCDF	*101*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-1,2,3,4,7,8-HxCDD	*94*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-1,2,3,4,7,8-HxCDF	*89*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*90*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-1,2,3,6,7,8-HxCDF	*83*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-OCDD	*72*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-1,2,3,7,8,9-HxCDF	*91*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-2,3,4,6,7,8-HxCDF	*89*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*90*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*
13C-OCDF	*77*		*40 - 135*	*12/30/22 04:42*	*01/06/23 10:48*	*1*

Lab Sample ID: LCS 320-643486/2-A
Matrix: Water
Analysis Batch: 645006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 643486

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	200	174.9		pg/L		87	72 - 128
2,3,7,8-TCDF	200	200.6		pg/L		100	67 - 135
1,2,3,7,8-PeCDD	1000	833.4		pg/L		83	71 - 135
1,2,3,7,8-PeCDF	1000	838.6		pg/L		84	70 - 133
2,3,4,7,8-PeCDF	1000	814.8		pg/L		81	69 - 135
1,2,3,4,7,8-HxCDD	1000	813.8		pg/L		81	67 - 130
1,2,3,6,7,8-HxCDD	1000	946.1		pg/L		95	61 - 144
1,2,3,7,8,9-HxCDD	1000	861.1		pg/L		86	61 - 140

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-643486/2-A
Matrix: Water
Analysis Batch: 645006

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 643486

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3,4,7,8-HxCDF			1000	855.8		pg/L		86	69 - 140		
1,2,3,6,7,8-HxCDF			1000	896.0		pg/L		90	62 - 155		
2,3,4,6,7,8-HxCDF			1000	891.9		pg/L		89	70 - 146		
1,2,3,7,8,9-HxCDF			1000	900.7		pg/L		90	71 - 142		
1,2,3,4,6,7,8-HpCDD			1000	852.1		pg/L		85	71 - 134		
1,2,3,4,6,7,8-HpCDF			1000	957.5		pg/L		96	68 - 137		
1,2,3,4,7,8,9-HpCDF			1000	847.3		pg/L		85	74 - 134		
OCDD			2000	1871		pg/L		94	72 - 134		
OCDF			2000	1844		pg/L		92	65 - 143		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*83*		*40 - 135*
13C-2,3,7,8-TCDF	*64*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*100*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*105*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*81*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*106*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*95*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*93*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*93*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*85*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*85*		*40 - 135*
13C-OCDD	*75*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*90*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*90*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*94*		*40 - 135*
13C-OCDF	*80*		*40 - 135*

Lab Sample ID: LCSD 320-643486/3-A
Matrix: Water
Analysis Batch: 645006

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 643486

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			200	173.9		pg/L		87	72 - 128	1	20
2,3,7,8-TCDF			200	206.7		pg/L		103	67 - 135	3	20
1,2,3,7,8-PeCDD			1000	850.6		pg/L		85	71 - 135	2	20
1,2,3,7,8-PeCDF			1000	826.1		pg/L		83	70 - 133	1	20
2,3,4,7,8-PeCDF			1000	832.8		pg/L		83	69 - 135	2	20
1,2,3,4,7,8-HxCDD			1000	832.6		pg/L		83	67 - 130	2	20
1,2,3,6,7,8-HxCDD			1000	951.8		pg/L		95	61 - 144	1	20
1,2,3,7,8,9-HxCDD			1000	839.1		pg/L		84	61 - 140	3	20
1,2,3,4,7,8-HxCDF			1000	883.0		pg/L		88	69 - 140	3	20
1,2,3,6,7,8-HxCDF			1000	886.3		pg/L		89	62 - 155	1	20
2,3,4,6,7,8-HxCDF			1000	902.9		pg/L		90	70 - 146	1	20
1,2,3,7,8,9-HxCDF			1000	908.5		pg/L		91	71 - 142	1	20
1,2,3,4,6,7,8-HpCDD			1000	880.2		pg/L		88	71 - 134	3	20
1,2,3,4,6,7,8-HpCDF			1000	944.7		pg/L		94	68 - 137	1	20
1,2,3,4,7,8,9-HpCDF			1000	839.4		pg/L		84	74 - 134	1	20
OCDD			2000	1900		pg/L		95	72 - 134	2	20

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-643486/3-A
Matrix: Water
Analysis Batch: 645006

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 643486

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
OCDF			2000	1894		pg/L		95	65 - 143	3	20

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*80*		*40 - 135*
13C-2,3,7,8-TCDF	*64*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*103*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*112*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*83*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*112*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*98*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*93*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*93*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*88*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*88*		*40 - 135*
13C-OCDD	*76*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*91*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*91*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*96*		*40 - 135*
13C-OCDF	*79*		*40 - 135*

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-288907/1-A
Matrix: Water
Analysis Batch: 289222

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 288907

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		12/14/22 09:49	12/14/22 15:19	1
Copper	ND		2.00	0.318	ug/L		12/14/22 09:49	12/14/22 15:19	1
Lead	ND		1.00	0.118	ug/L		12/14/22 09:49	12/14/22 15:19	1

Lab Sample ID: LCS 570-288907/2-A
Matrix: Water
Analysis Batch: 289222

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 288907

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium			80.0	76.00		ug/L		95	85 - 115		
Copper			80.0	76.66		ug/L		96	85 - 115		
Lead			80.0	76.93		ug/L		96	85 - 115		

Lab Sample ID: LCSD 570-288907/3-A
Matrix: Water
Analysis Batch: 289222

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 288907

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	79.71		ug/L		100	85 - 115	5	20
Copper			80.0	80.26		ug/L		100	85 - 115	5	20
Lead			80.0	81.33		ug/L		102	85 - 115	6	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-289012/1-A
Matrix: Water
Analysis Batch: 289311

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L			12/15/22 09:33	1
Copper	ND		2.00	0.318	ug/L			12/15/22 09:33	1
Lead	ND		1.00	0.118	ug/L			12/15/22 09:33	1

Lab Sample ID: LCS 570-289012/2-A
Matrix: Water
Analysis Batch: 289311

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	70.10		ug/L		88	85 - 115
Copper	80.0	70.46		ug/L		88	85 - 115
Lead	80.0	71.80		ug/L		90	85 - 115

Lab Sample ID: LCSD 570-289012/3-A
Matrix: Water
Analysis Batch: 289311

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	69.86		ug/L		87	85 - 115	0	20
Copper	80.0	71.80		ug/L		90	85 - 115	2	20
Lead	80.0	72.15		ug/L		90	85 - 115	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-290715/1-A
Matrix: Water
Analysis Batch: 290732

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290715

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^+	0.000200	0.000124	mg/L		12/20/22 13:10	12/20/22 16:47	1

Lab Sample ID: LCS 570-290715/2-A
Matrix: Water
Analysis Batch: 290732

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290715

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.007720	^+	mg/L		96	85 - 115

Lab Sample ID: LCSD 570-290715/3-A
Matrix: Water
Analysis Batch: 290732

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290715

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.008002	^+	mg/L		100	85 - 115	4	10

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: MB 570-289055/1-B
Matrix: Water
Analysis Batch: 289420

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 289063

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		12/14/22 17:22	12/15/22 14:42	1

Lab Sample ID: LCS 570-289055/2-B
Matrix: Water
Analysis Batch: 289420

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 289063

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00800	0.007448		mg/L		93	85 - 115		

Lab Sample ID: LCSD 570-289055/3-B
Matrix: Water
Analysis Batch: 289420

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 289063

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00800	0.007328		mg/L		92	85 - 115	2	10

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-288432/1
Matrix: Water
Analysis Batch: 288432

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			1000	1000		NTU		99.6	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-288432/2
Matrix: Water
Analysis Batch: 288432

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			10.0	10		NTU		101.0	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-288432/3
Matrix: Water
Analysis Batch: 288432

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			0.0200	ND		NTU		100.0	0.0 - 200.0		

Lab Sample ID: 570-120399-1 DU
Matrix: Water
Analysis Batch: 288432

Client Sample ID: A2BMP0012S011
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Turbidity	3.7			3.8		NTU				0.8	25

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-289102/1
Matrix: Water
Analysis Batch: 289102

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			12/14/22 18:39	1

Lab Sample ID: LCS 570-289102/2
Matrix: Water
Analysis Batch: 289102

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	108.0		mg/L		108	77 - 116		

Lab Sample ID: LCSD 570-289102/3
Matrix: Water
Analysis Batch: 289102

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	115.0		mg/L		115	77 - 116	6	10

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-120399-2 DU
Matrix: Water
Analysis Batch: 289052

Client Sample ID: EVBMP0003S034
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Clay (less than 0.00391 mm)	5.47			4.67		%				16	20
Coarse Sand (0.5mm to 1mm)	5.06			10.49	F3	%				70	20
Fine Sand (0.125 to 0.25mm)	14.75			13.18		%				11	20
Gravel (greater than 2 mm)	ND			ND		%				NC	20
Medium Sand (0.25 to 0.5 mm)	14.11			17.57	F3	%				22	20
Silt (0.00391 to 0.0625mm)	41.20			40.30		%				2	20
Total Silt and Clay (0 to 0.0626mm)	46.67			44.97		%				4	20
Very Coarse Sand (1 to 2mm)	ND			ND		%				NC	20
Very Fine Sand (0.0625 to 0.125 mm)	19.41			13.78	F3	%				34	20

Specialty Organics

Prep Batch: 643486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Total/NA	Water	8290	
570-120399-2	EVBMP0003S034	Total/NA	Water	8290	
MB 320-643486/1-A	Method Blank	Total/NA	Water	8290	
LCS 320-643486/2-A	Lab Control Sample	Total/NA	Water	8290	
LCSD 320-643486/3-A	Lab Control Sample Dup	Total/NA	Water	8290	

Analysis Batch: 645006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Total/NA	Water	8290	643486
570-120399-2	EVBMP0003S034	Total/NA	Water	8290	643486
MB 320-643486/1-A	Method Blank	Total/NA	Water	8290	643486
LCS 320-643486/2-A	Lab Control Sample	Total/NA	Water	8290	643486
LCSD 320-643486/3-A	Lab Control Sample Dup	Total/NA	Water	8290	643486

Metals

Prep Batch: 288907

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Total Recoverable	Water	200.8	
570-120399-2	EVBMP0003S034	Total Recoverable	Water	200.8	
MB 570-288907/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-288907/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-288907/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Filtration Batch: 289012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Dissolved	Water	Filtration	
570-120399-2	EVBMP0003S034	Dissolved	Water	Filtration	
MB 570-289012/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-289012/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-289012/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Filtration Batch: 289055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Dissolved	Water	Filtration	
570-120399-2	EVBMP0003S034	Dissolved	Water	Filtration	
MB 570-289055/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-289055/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-289055/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 289063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Dissolved	Water	245.1	289055
570-120399-2	EVBMP0003S034	Dissolved	Water	245.1	289055
MB 570-289055/1-B	Method Blank	Dissolved	Water	245.1	289055
LCS 570-289055/2-B	Lab Control Sample	Dissolved	Water	245.1	289055
LCSD 570-289055/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	289055

Analysis Batch: 289222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-288907/1-A	Method Blank	Total Recoverable	Water	200.8	288907

Metals (Continued)

Analysis Batch: 289222 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-288907/2-A	Lab Control Sample	Total Recoverable	Water	200.8	288907
LCSD 570-288907/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	288907

Analysis Batch: 289225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Total Recoverable	Water	200.8	288907
570-120399-2	EVBMP0003S034	Total Recoverable	Water	200.8	288907

Analysis Batch: 289311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Dissolved	Water	200.8	289012
570-120399-2	EVBMP0003S034	Dissolved	Water	200.8	289012
MB 570-289012/1-A	Method Blank	Dissolved	Water	200.8	289012
LCS 570-289012/2-A	Lab Control Sample	Dissolved	Water	200.8	289012
LCSD 570-289012/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	289012

Analysis Batch: 289420

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Dissolved	Water	245.1	289063
570-120399-2	EVBMP0003S034	Dissolved	Water	245.1	289063
MB 570-289055/1-B	Method Blank	Dissolved	Water	245.1	289063
LCS 570-289055/2-B	Lab Control Sample	Dissolved	Water	245.1	289063
LCSD 570-289055/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	289063

Prep Batch: 290715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Total/NA	Water	245.1	
570-120399-2	EVBMP0003S034	Total/NA	Water	245.1	
MB 570-290715/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-290715/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-290715/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Analysis Batch: 290732

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-290715/1-A	Method Blank	Total/NA	Water	245.1	290715
LCS 570-290715/2-A	Lab Control Sample	Total/NA	Water	245.1	290715
LCSD 570-290715/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	290715

Analysis Batch: 291164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Total/NA	Water	245.1	290715
570-120399-2	EVBMP0003S034	Total/NA	Water	245.1	290715

General Chemistry

Analysis Batch: 288432

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Total/NA	Water	SM 2130B	
LCSSRM 570-288432/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-288432/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-288432/3	Lab Control Sample	Total/NA	Water	SM 2130B	

General Chemistry (Continued)

Analysis Batch: 288432 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1 DU	A2BMP0012S011	Total/NA	Water	SM 2130B	

Analysis Batch: 289102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Total/NA	Water	SM 2540D	
570-120399-2	EVBMP0003S034	Total/NA	Water	SM 2540D	
MB 570-289102/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-289102/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-289102/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Geotechnical

Analysis Batch: 289052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-120399-1	A2BMP0012S011	Total/NA	Water	D4464	
570-120399-2	EVBMP0003S034	Total/NA	Water	D4464	
LCS 570-289052/14	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-289052/16	Lab Control Sample Dup	Total/NA	Water	D4464	
570-120399-2 DU	EVBMP0003S034	Total/NA	Water	D4464	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

Client Sample ID: A2BMP0012S011

Date Collected: 12/11/22 10:25
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			724.2 mL	20.0 uL	643486	12/30/22 04:42	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	645006	01/06/23 13:13	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			50 mL	50 mL	289012	12/14/22 14:06	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			289311	12/15/22 10:03	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	288907	12/14/22 09:49	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			289225	12/14/22 14:51	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Filtration	Filtration			25 mL	25 mL	289055	12/14/22 16:47	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	289063	12/14/22 17:22	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			289420	12/15/22 15:20	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	290715	12/20/22 13:10	C0YH	EET CAL 4
Total/NA	Analysis	245.1		1			291164	12/21/22 14:57	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			288432	12/13/22 01:49	UAPD	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	700 mL	1000 mL	289102	12/14/22 18:39	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									
Total/NA	Analysis	D4464		1			289052	12/14/22 12:14	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0003S034

Date Collected: 12/11/22 10:14
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			748.1 mL	20.0 uL	643486	12/30/22 04:42	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	645006	01/06/23 14:01	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			50 mL	50 mL	289012	12/14/22 14:06	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			289311	12/15/22 10:05	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	288907	12/14/22 09:49	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			289225	12/14/22 14:49	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Filtration	Filtration			25 mL	25 mL	289055	12/14/22 16:47	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	289063	12/14/22 17:22	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			289420	12/15/22 15:22	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	290715	12/20/22 13:10	C0YH	EET CAL 4
Total/NA	Analysis	245.1		1			291164	12/21/22 14:59	C0YH	EET CAL 4
	Instrument ID: HG8									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

Client Sample ID: EVBMP0003S034

Date Collected: 12/11/22 10:14
Date Received: 12/12/22 17:34

Lab Sample ID: 570-120399-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	200 mL	1000 mL	289102	12/14/22 18:39	UWCT	EET CAL 4
Total/NA	Analysis	D4464		1			289052	12/14/22 12:21	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc.
Job ID: 570-120399-1
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8		Water	Cadmium
200.8		Water	Copper
200.8		Water	Lead
200.8	200.8	Water	Cadmium
200.8	200.8	Water	Copper
200.8	200.8	Water	Lead
245.1	245.1	Water	Mercury
D4464		Water	Clay (less than 0.00391 mm)
D4464		Water	Coarse Sand (0.5mm to 1mm)
D4464		Water	Fine Sand (0.125 to 0.25mm)
D4464		Water	Gravel (greater than 2 mm)
D4464		Water	Medium Sand (0.25 to 0.5 mm)
D4464		Water	Silt (0.00391 to 0.0625mm)
D4464		Water	Total Silt and Clay (0 to 0.0626mm)
D4464		Water	Very Coarse Sand (1 to 2mm)
D4464		Water	Very Fine Sand (0.0625 to 0.125 mm)
SM 2130B		Water	Turbidity

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2897	01-31-24

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

Method	Method Description	Protocol	Laboratory
8290	Dioxins and Furans (HRGC/HRMS)	SW846	EET SAC
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
8290	Separatory Funnel (Liquid-Liquid) Extraction of Dioxins and Furans	SW846	EET SAC
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-120399-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-120399-1	A2BMP0012S011	Water	12/11/22 10:25	12/12/22 17:34
570-120399-2	EVBMP0003S034	Water	12/11/22 10:14	12/12/22 17:34

Chain of Custody Record

COC Number: CALS12122201

JACOBS

12/12/2022 9:16:22 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180.1/2130B	200.8/245.1	200.8/245.1F	ASTMD4464	SM2540	SW8290/1613B
A2BMP0012S011	11-Dec-22 10:25	N	Water									
Dioxins-17 congeners				4°C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4°C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4°C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4°C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4°C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
EVBMP0003S034	11-Dec-22 10.14	N	Water									
Dioxins-17 congeners				4°C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4°C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4°C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4°C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4°C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

570-120399 Chain of Custody

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN BENSON	12/11/22
Relinquished by	BRYAN BENSON	12/12/22
Received by	[signature]	12.12.22/1115
Relinquished by	[signature]	12.12 22/1330
Received by	[signature] EC	12/12/22 1330
Relinquished by:	[signature] - EC	12/12/22 1710

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** 1.4/1.2 5c11

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-202723.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State California		Job #: 570-120399-1
Address: 880 Riverside Parkway	Due Date Requested: 12/22/2022			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Analysis Requested

Preservation Codes

A HCL, B NaOH, C Zn Acetate, D Nitric Acid, E NaHSO4, F MeOH, G Amchlor, H Ascorbic Acid, I Ice, J DI Water, K EDTA, L EDA, M Hexane, N None, O AsNaO2, P Na2O4S, Q Na2SO3, R Na2S2O3, S H2SO4, T TSP Dodecahydrate, U Acetone, V MCAA, W pH 4-5, Y Trizma, Z other (specify)

Other:

Sample Identification Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
A2BMP0012S011 (570-120399-1)	12/11/22	10:25 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I II III, IV Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	12/28/22 1432	FC			
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

ICOC No
570 202723

Containers

Count	Container Type	Preservative

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-201042.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-120399-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 12/22/2022			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
A2BMP0012S011 (570-120399-1)	12/11/22	10:25 Pacific		Water			X	1	
EVBMP0003S034 (570-120399-2)	12/11/22	10:14 Pacific		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		12/13/22	EC			
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks. B. Lee

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-202723.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-120399-1
Address: 880 Riverside Parkway,	Due Date Requested: 12/22/2022			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
A2BMP0012S011 (570-120399-1)	12/11/22	10:25 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by:	Date/Time: 12/28/22 14:32	Company EC	Received by:	Date/Time: 12/29/22 1100	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.8c

Ver: 06/08/2021

1/11/2023

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc. Job Number: 570-120399-1

Login Number: 120399 **List Source: Eurofins Calscience**
List Number: 1
Creator: Thompson, Lori

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc. Job Number: 570-120399-1

Login Number: 120399
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 12/14/22 12:34 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.6c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc. Job Number: 570-120399-1

Login Number: 120399 **List Source: Eurofins Sacramento**
List Number: 3
Creator: Simmons, Jason C

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.8c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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1 2 3 4 5 6 7 8 9 10 11 12 13 14

ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

Generated 1/16/2023 10:19:38 AM

JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-122824-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

myEOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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Authorized for release by
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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-1

Qualifiers

Metals

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-1

Job ID: 570-122824-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122824-1

Comments
No additional comments.

Receipt
The samples were received on 1/5/2023 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2º C and 1.6º C.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: A2BMP0006S014 (570-122824-1), A2BMP0007S022 (570-122824-2), A2BMP0012S012 (570-122824-3), EVBMP0007S014 (570-122824-4), EVBMP0008S017 (570-122824-5), EVBMP0009S015 (570-122824-6), (570-122824-D-6 MS) and (570-122824-D-6 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-1

Client Sample ID: A2BMP0006S014 — Lab Sample ID: 570-122824-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2.54		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.488	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	2.17	H	2.00	0.318	ug/L	1		200.8	Dissolved
Total Suspended Solids	1.80		1.00	0.829	mg/L	1		SM 2540D	Total/NA

Client Sample ID: A2BMP0007S022 — Lab Sample ID: 570-122824-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2.34		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	1.08		1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.87	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.204	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Mercury	0.000216		0.000200	0.000124	mg/L	1		245.1	Total/NA
Total Suspended Solids	9.50		1.00	0.829	mg/L	1		SM 2540D	Total/NA

Client Sample ID: A2BMP0012S012 — Lab Sample ID: 570-122824-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.83	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	2.11		1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.23	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.265	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Mercury	0.000207		0.000200	0.000124	mg/L	1		245.1	Total/NA
Turbidity	15		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	10.2		2.00	1.66	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0007S014 — Lab Sample ID: 570-122824-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	8.60		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	1.78		1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	4.66	H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.459	J H	1.00	0.118	ug/L	1		200.8	Dissolved

Client Sample ID: EVBMP0008S017 — Lab Sample ID: 570-122824-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.87	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.587	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.92	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.184	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Turbidity	4.4		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	2.30		1.00	0.829	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-1

Client Sample ID: EVBMP0009S015

Lab Sample ID: 570-122824-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.81	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.523	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.68	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.183	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Turbidity	3.7		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	1.00		1.00	0.829	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: A2BMP0006S014
Date Collected: 01/05/23 07:30
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/10/23 06:36	01/10/23 11:16	1
Copper	**2.54**		2.00	0.318	ug/L		01/10/23 06:36	01/10/23 11:16	1
Lead	**0.488**	**J**	1.00	0.118	ug/L		01/10/23 06:36	01/10/23 11:16	1

Client Sample ID: A2BMP0007S022
Date Collected: 01/05/23 12:12
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/10/23 06:36	01/10/23 11:18	1
Copper	**2.34**		2.00	0.318	ug/L		01/10/23 06:36	01/10/23 11:18	1
Lead	**1.08**		1.00	0.118	ug/L		01/10/23 06:36	01/10/23 11:18	1

Client Sample ID: A2BMP0012S012
Date Collected: 01/05/23 11:20
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/10/23 06:36	01/10/23 11:26	1
Copper	**1.83**	**J**	2.00	0.318	ug/L		01/10/23 06:36	01/10/23 11:26	1
Lead	**2.11**		1.00	0.118	ug/L		01/10/23 06:36	01/10/23 11:26	1

Client Sample ID: EVBMP0007S014
Date Collected: 01/05/23 07:02
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/10/23 06:36	01/10/23 11:28	1
Copper	**8.60**		2.00	0.318	ug/L		01/10/23 06:36	01/10/23 11:28	1
Lead	**1.78**		1.00	0.118	ug/L		01/10/23 06:36	01/10/23 11:28	1

Client Sample ID: EVBMP0008S017
Date Collected: 01/05/23 07:20
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/10/23 09:17	01/10/23 14:22	1
Copper	**1.87**	**J**	2.00	0.318	ug/L		01/10/23 09:17	01/10/23 14:22	1
Lead	**0.587**	**J**	1.00	0.118	ug/L		01/10/23 09:17	01/10/23 14:22	1

Client Sample ID: EVBMP0009S015
Date Collected: 01/05/23 07:07
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/10/23 09:17	01/10/23 14:24	1
Copper	**1.81**	**J**	2.00	0.318	ug/L		01/10/23 09:17	01/10/23 14:24	1
Lead	**0.523**	**J**	1.00	0.118	ug/L		01/10/23 09:17	01/10/23 14:24	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: A2BMP0006S014 **Lab Sample ID: 570-122824-1**
Date Collected: 01/05/23 07:30 **Matrix: Water**
Date Received: 01/05/23 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/06/23 18:05	1
Copper	**2.17**	**H**	2.00	0.318	ug/L			01/06/23 18:05	1
Lead	ND	H	1.00	0.118	ug/L			01/06/23 18:05	1

Client Sample ID: A2BMP0007S022 **Lab Sample ID: 570-122824-2**
Date Collected: 01/05/23 12:12 **Matrix: Water**
Date Received: 01/05/23 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/06/23 18:07	1
Copper	**1.87**	**J H**	2.00	0.318	ug/L			01/06/23 18:07	1
Lead	**0.204**	**J H**	1.00	0.118	ug/L			01/06/23 18:07	1

Client Sample ID: A2BMP0012S012 **Lab Sample ID: 570-122824-3**
Date Collected: 01/05/23 11:20 **Matrix: Water**
Date Received: 01/05/23 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/06/23 18:10	1
Copper	**1.23**	**J H**	2.00	0.318	ug/L			01/06/23 18:10	1
Lead	**0.265**	**J H**	1.00	0.118	ug/L			01/06/23 18:10	1

Client Sample ID: EVBMP0007S014 **Lab Sample ID: 570-122824-4**
Date Collected: 01/05/23 07:02 **Matrix: Water**
Date Received: 01/05/23 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/06/23 18:16	1
Copper	**4.66**	**H**	2.00	0.318	ug/L			01/06/23 18:16	1
Lead	**0.459**	**J H**	1.00	0.118	ug/L			01/06/23 18:16	1

Client Sample ID: EVBMP0008S017 **Lab Sample ID: 570-122824-5**
Date Collected: 01/05/23 07:20 **Matrix: Water**
Date Received: 01/05/23 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/06/23 18:18	1
Copper	**1.92**	**J H**	2.00	0.318	ug/L			01/06/23 18:18	1
Lead	**0.184**	**J H**	1.00	0.118	ug/L			01/06/23 18:18	1

Client Sample ID: EVBMP0009S015 **Lab Sample ID: 570-122824-6**
Date Collected: 01/05/23 07:07 **Matrix: Water**
Date Received: 01/05/23 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/06/23 18:21	1
Copper	**1.68**	**J H**	2.00	0.318	ug/L			01/06/23 18:21	1
Lead	**0.183**	**J H**	1.00	0.118	ug/L			01/06/23 18:21	1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: A2BMP0006S014
Date Collected: 01/05/23 07:30
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/09/23 20:20	01/10/23 12:19	1

Client Sample ID: A2BMP0007S022
Date Collected: 01/05/23 12:12
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000216**		0.000200	0.000124	mg/L		01/09/23 20:20	01/10/23 12:25	1

Client Sample ID: A2BMP0012S012
Date Collected: 01/05/23 11:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.000207**		0.000200	0.000124	mg/L		01/09/23 20:20	01/10/23 12:27	1

Client Sample ID: EVBMP0007S014
Date Collected: 01/05/23 07:02
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/09/23 20:20	01/10/23 12:29	1

Client Sample ID: EVBMP0008S017
Date Collected: 01/05/23 07:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/09/23 20:20	01/10/23 12:30	1

Client Sample ID: EVBMP0009S015
Date Collected: 01/05/23 07:07
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/09/23 20:20	01/10/23 12:32	1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: A2BMP0006S014
Date Collected: 01/05/23 07:30
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		01/06/23 13:39	01/09/23 17:12	1

Client Sample ID: A2BMP0007S022
Date Collected: 01/05/23 12:12
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		01/06/23 13:39	01/09/23 17:14	1

Client Sample ID: A2BMP0012S012
Date Collected: 01/05/23 11:20
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		01/06/23 13:39	01/09/23 17:16	1

Client Sample ID: EVBMP0007S014
Date Collected: 01/05/23 07:02
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		01/06/23 13:39	01/09/23 17:18	1

Client Sample ID: EVBMP0008S017
Date Collected: 01/05/23 07:20
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		01/06/23 13:39	01/09/23 17:28	1

Client Sample ID: EVBMP0009S015
Date Collected: 01/05/23 07:07
Date Received: 01/05/23 16:00
Lab Sample ID: 570-122824-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		01/06/23 13:39	01/09/23 17:07	1

General Chemistry

Client Sample ID: A2BMP0006S014
Date Collected: 01/05/23 07:30
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	1.80		1.00	0.829	mg/L			01/09/23 16:49	1

Client Sample ID: A2BMP0007S022
Date Collected: 01/05/23 12:12
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	9.50		1.00	0.829	mg/L			01/09/23 15:03	1

Client Sample ID: A2BMP0012S012
Date Collected: 01/05/23 11:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	15		0.05	0.05	NTU			01/05/23 21:09	1
Total Suspended Solids (SM 2540D)	10.2		2.00	1.66	mg/L			01/09/23 16:49	1

Client Sample ID: EVBMP0007S014
Date Collected: 01/05/23 07:02
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	ND		1.00	0.829	mg/L			01/09/23 15:03	1

Client Sample ID: EVBMP0008S017
Date Collected: 01/05/23 07:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	4.4		0.05	0.05	NTU			01/05/23 21:14	1
Total Suspended Solids (SM 2540D)	2.30		1.00	0.829	mg/L			01/09/23 15:03	1

Client Sample ID: EVBMP0009S015
Date Collected: 01/05/23 07:07
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-6
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	3.7		0.05	0.05	NTU			01/05/23 21:16	1
Total Suspended Solids (SM 2540D)	1.00		1.00	0.829	mg/L			01/09/23 15:03	1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-294673/1-B
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 294673

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/10/23 06:36	01/10/23 10:51	1
Copper	ND		2.00	0.318	ug/L		01/10/23 06:36	01/10/23 10:51	1
Lead	ND		1.00	0.118	ug/L		01/10/23 06:36	01/10/23 10:51	1

Lab Sample ID: LCS 570-294673/2-B
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 294673

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	85.44		ug/L		107	85 - 115
Copper	80.0	84.73		ug/L		106	85 - 115
Lead	80.0	85.21		ug/L		107	85 - 115

Lab Sample ID: LCSD 570-294673/3-B
Matrix: Water
Analysis Batch: 294822

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 294673

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	83.63		ug/L		105	85 - 115	2	20
Copper	80.0	84.76		ug/L		106	85 - 115	0	20
Lead	80.0	84.64		ug/L		106	85 - 115	1	20

Lab Sample ID: MB 570-294718/1-A
Matrix: Water
Analysis Batch: 294864

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 294718

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/10/23 09:17	01/10/23 13:08	1
Copper	ND		2.00	0.318	ug/L		01/10/23 09:17	01/10/23 13:08	1
Lead	ND		1.00	0.118	ug/L		01/10/23 09:17	01/10/23 13:08	1

Lab Sample ID: LCS 570-294718/2-A
Matrix: Water
Analysis Batch: 294864

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 294718

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	81.14		ug/L		101	85 - 115
Copper	80.0	81.19		ug/L		101	85 - 115
Lead	80.0	81.73		ug/L		102	85 - 115

Lab Sample ID: LCSD 570-294718/3-A
Matrix: Water
Analysis Batch: 294864

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 294718

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	78.37		ug/L		98	85 - 115	3	20
Copper	80.0	79.55		ug/L		99	85 - 115	2	20
Lead	80.0	80.35		ug/L		100	85 - 115	2	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-294131/1-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L			01/06/23 12:21	1
Copper	ND		2.00	0.318	ug/L			01/06/23 12:21	1
Lead	ND		1.00	0.118	ug/L			01/06/23 12:21	1

Lab Sample ID: LCS 570-294131/2-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium			80.0	74.23		ug/L		93	85 - 115		
Copper			80.0	73.78		ug/L		92	85 - 115		
Lead			80.0	75.06		ug/L		94	85 - 115		

Lab Sample ID: LCSD 570-294131/3-A
Matrix: Water
Analysis Batch: 294197

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	72.41		ug/L		91	85 - 115	2	20
Copper			80.0	74.04		ug/L		93	85 - 115	0	20
Lead			80.0	72.96		ug/L		91	85 - 115	3	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-294629/1-A
Matrix: Water
Analysis Batch: 294848

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294629

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/09/23 20:20	01/10/23 12:07	1

Lab Sample ID: LCS 570-294629/2-A
Matrix: Water
Analysis Batch: 294848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294629

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00800	0.007742		mg/L		97	85 - 115		

Lab Sample ID: LCSD 570-294629/3-A
Matrix: Water
Analysis Batch: 294848

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 294629

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00800	0.007799		mg/L		97	85 - 115	1	10

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: MB 570-294190/1-B
Matrix: Water
Analysis Batch: 294602

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 294195

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/06/23 13:39	01/09/23 17:01	1

Lab Sample ID: LCS 570-294190/2-B
Matrix: Water
Analysis Batch: 294602

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 294195

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.008134		mg/L		102	85 - 115

Lab Sample ID: LCSD 570-294190/3-B
Matrix: Water
Analysis Batch: 294602

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 294195

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.008108		mg/L		101	85 - 115	0	10

Lab Sample ID: 570-122824-6 MS
Matrix: Water
Analysis Batch: 294602

Client Sample ID: EVBMP0009S015
Prep Type: Dissolved
Prep Batch: 294195

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND	H	0.00800	0.008071		mg/L		101	85 - 115

Lab Sample ID: 570-122824-6 MSD
Matrix: Water
Analysis Batch: 294602

Client Sample ID: EVBMP0009S015
Prep Type: Dissolved
Prep Batch: 294195

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	H	0.00800	0.008186		mg/L		102	85 - 115	1	10

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-294024/1
Matrix: Water
Analysis Batch: 294024

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		100.2	99.0 - 101.0

Lab Sample ID: LCSSRM 570-294024/2
Matrix: Water
Analysis Batch: 294024

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: LCSSRM 570-294024/3
Matrix: Water
Analysis Batch: 294024

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-294564/1
Matrix: Water
Analysis Batch: 294564

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			01/09/23 15:03	1

Lab Sample ID: LCS 570-294564/2
Matrix: Water
Analysis Batch: 294564

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	111.0		mg/L		111	77 - 116

Lab Sample ID: LCSD 570-294564/3
Matrix: Water
Analysis Batch: 294564

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	111.0		mg/L		111	77 - 116	0	10

Lab Sample ID: MB 570-294589/1
Matrix: Water
Analysis Batch: 294589

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			01/09/23 16:49	1

Lab Sample ID: LCS 570-294589/2
Matrix: Water
Analysis Batch: 294589

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	105.0		mg/L		105	77 - 116

Lab Sample ID: LCSD 570-294589/3
Matrix: Water
Analysis Batch: 294589

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	104.0		mg/L		104	77 - 116	1	10

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: 570-122824-3 DU
Matrix: Water
Analysis Batch: 294589

Client Sample ID: A2BMP0012S012
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	10.2			11.00		mg/L				8	10

Metals

Filtration Batch: 294131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Dissolved	Water	Filtration	
570-122824-2	A2BMP0007S022	Dissolved	Water	Filtration	
570-122824-3	A2BMP0012S012	Dissolved	Water	Filtration	
570-122824-4	EVBMP0007S014	Dissolved	Water	Filtration	
570-122824-5	EVBMP0008S017	Dissolved	Water	Filtration	
570-122824-6	EVBMP0009S015	Dissolved	Water	Filtration	
MB 570-294131/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-294131/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294131/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Filtration Batch: 294190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Dissolved	Water	Filtration	
570-122824-2	A2BMP0007S022	Dissolved	Water	Filtration	
570-122824-3	A2BMP0012S012	Dissolved	Water	Filtration	
570-122824-4	EVBMP0007S014	Dissolved	Water	Filtration	
570-122824-5	EVBMP0008S017	Dissolved	Water	Filtration	
570-122824-6	EVBMP0009S015	Dissolved	Water	Filtration	
MB 570-294190/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-294190/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-294190/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-122824-6 MS	EVBMP0009S015	Dissolved	Water	Filtration	
570-122824-6 MSD	EVBMP0009S015	Dissolved	Water	Filtration	

Prep Batch: 294195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Dissolved	Water	245.1	294190
570-122824-2	A2BMP0007S022	Dissolved	Water	245.1	294190
570-122824-3	A2BMP0012S012	Dissolved	Water	245.1	294190
570-122824-4	EVBMP0007S014	Dissolved	Water	245.1	294190
570-122824-5	EVBMP0008S017	Dissolved	Water	245.1	294190
570-122824-6	EVBMP0009S015	Dissolved	Water	245.1	294190
MB 570-294190/1-B	Method Blank	Dissolved	Water	245.1	294190
LCS 570-294190/2-B	Lab Control Sample	Dissolved	Water	245.1	294190
LCSD 570-294190/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	294190
570-122824-6 MS	EVBMP0009S015	Dissolved	Water	245.1	294190
570-122824-6 MSD	EVBMP0009S015	Dissolved	Water	245.1	294190

Analysis Batch: 294197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-294131/1-A	Method Blank	Dissolved	Water	200.8	294131
LCS 570-294131/2-A	Lab Control Sample	Dissolved	Water	200.8	294131
LCSD 570-294131/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	294131

Analysis Batch: 294380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Dissolved	Water	200.8	294131
570-122824-2	A2BMP0007S022	Dissolved	Water	200.8	294131
570-122824-3	A2BMP0012S012	Dissolved	Water	200.8	294131
570-122824-4	EVBMP0007S014	Dissolved	Water	200.8	294131
570-122824-5	EVBMP0008S017	Dissolved	Water	200.8	294131

Metals (Continued)

Analysis Batch: 294380 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-6	EVBMP0009S015	Dissolved	Water	200.8	294131

Analysis Batch: 294602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Dissolved	Water	245.1	294195
570-122824-2	A2BMP0007S022	Dissolved	Water	245.1	294195
570-122824-3	A2BMP0012S012	Dissolved	Water	245.1	294195
570-122824-4	EVBMP0007S014	Dissolved	Water	245.1	294195
570-122824-5	EVBMP0008S017	Dissolved	Water	245.1	294195
570-122824-6	EVBMP0009S015	Dissolved	Water	245.1	294195
MB 570-294190/1-B	Method Blank	Dissolved	Water	245.1	294195
LCS 570-294190/2-B	Lab Control Sample	Dissolved	Water	245.1	294195
LCSD 570-294190/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	294195
570-122824-6 MS	EVBMP0009S015	Dissolved	Water	245.1	294195
570-122824-6 MSD	EVBMP0009S015	Dissolved	Water	245.1	294195

Prep Batch: 294629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Total/NA	Water	245.1	
570-122824-2	A2BMP0007S022	Total/NA	Water	245.1	
570-122824-3	A2BMP0012S012	Total/NA	Water	245.1	
570-122824-4	EVBMP0007S014	Total/NA	Water	245.1	
570-122824-5	EVBMP0008S017	Total/NA	Water	245.1	
570-122824-6	EVBMP0009S015	Total/NA	Water	245.1	
MB 570-294629/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-294629/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-294629/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Prep Batch: 294673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Total Recoverable	Water	200.8	
570-122824-2	A2BMP0007S022	Total Recoverable	Water	200.8	
570-122824-3	A2BMP0012S012	Total Recoverable	Water	200.8	
570-122824-4	EVBMP0007S014	Total Recoverable	Water	200.8	
MB 570-294673/1-B	Method Blank	Total Recoverable	Water	200.8	
LCS 570-294673/2-B	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-294673/3-B	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Prep Batch: 294718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-5	EVBMP0008S017	Total Recoverable	Water	200.8	
570-122824-6	EVBMP0009S015	Total Recoverable	Water	200.8	
MB 570-294718/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-294718/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-294718/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Analysis Batch: 294799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Total Recoverable	Water	200.8	294673
570-122824-2	A2BMP0007S022	Total Recoverable	Water	200.8	294673
570-122824-3	A2BMP0012S012	Total Recoverable	Water	200.8	294673

Metals (Continued)

Analysis Batch: 294799 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-4	EVBMP0007S014	Total Recoverable	Water	200.8	294673

Analysis Batch: 294822

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-294673/1-B	Method Blank	Total Recoverable	Water	200.8	294673
LCS 570-294673/2-B	Lab Control Sample	Total Recoverable	Water	200.8	294673
LCSD 570-294673/3-B	Lab Control Sample Dup	Total Recoverable	Water	200.8	294673

Analysis Batch: 294848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Total/NA	Water	245.1	294629
570-122824-2	A2BMP0007S022	Total/NA	Water	245.1	294629
570-122824-3	A2BMP0012S012	Total/NA	Water	245.1	294629
570-122824-4	EVBMP0007S014	Total/NA	Water	245.1	294629
570-122824-5	EVBMP0008S017	Total/NA	Water	245.1	294629
570-122824-6	EVBMP0009S015	Total/NA	Water	245.1	294629
MB 570-294629/1-A	Method Blank	Total/NA	Water	245.1	294629
LCS 570-294629/2-A	Lab Control Sample	Total/NA	Water	245.1	294629
LCSD 570-294629/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	294629

Analysis Batch: 294864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-294718/1-A	Method Blank	Total Recoverable	Water	200.8	294718
LCS 570-294718/2-A	Lab Control Sample	Total Recoverable	Water	200.8	294718
LCSD 570-294718/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	294718

Analysis Batch: 294874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-5	EVBMP0008S017	Total Recoverable	Water	200.8	294718
570-122824-6	EVBMP0009S015	Total Recoverable	Water	200.8	294718

General Chemistry

Analysis Batch: 294024

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-3	A2BMP0012S012	Total/NA	Water	SM 2130B	
570-122824-5	EVBMP0008S017	Total/NA	Water	SM 2130B	
570-122824-6	EVBMP0009S015	Total/NA	Water	SM 2130B	
LCSSRM 570-294024/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-294024/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-294024/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 294564

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-2	A2BMP0007S022	Total/NA	Water	SM 2540D	
570-122824-4	EVBMP0007S014	Total/NA	Water	SM 2540D	
570-122824-5	EVBMP0008S017	Total/NA	Water	SM 2540D	
570-122824-6	EVBMP0009S015	Total/NA	Water	SM 2540D	
MB 570-294564/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-294564/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-294564/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

General Chemistry

Analysis Batch: 294589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Total/NA	Water	SM 2540D	
570-122824-3	A2BMP0012S012	Total/NA	Water	SM 2540D	
MB 570-294589/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-294589/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-294589/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	
570-122824-3 DU	A2BMP0012S012	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-1

Client Sample ID: A2BMP0006S014

Date Collected: 01/05/23 07:30
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 18:05	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	294673	01/10/23 06:36	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294799	01/10/23 11:16	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	294190	01/06/23 13:37	JP8N	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	294195	01/06/23 13:39	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			294602	01/09/23 17:12	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	294629	01/09/23 20:20	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			294848	01/10/23 12:19	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	294589	01/09/23 16:49	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: A2BMP0007S022

Date Collected: 01/05/23 12:12
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 18:07	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	294673	01/10/23 06:36	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294799	01/10/23 11:18	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	294190	01/06/23 13:37	JP8N	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	294195	01/06/23 13:39	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			294602	01/09/23 17:14	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	294629	01/09/23 20:20	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			294848	01/10/23 12:25	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	294564	01/09/23 15:03	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: A2BMP0012S012

Date Collected: 01/05/23 11:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 18:10	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-1

Client Sample ID: A2BMP0012S012

Date Collected: 01/05/23 11:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			50 mL	50 mL	294673	01/10/23 06:36	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294799	01/10/23 11:26	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	294190	01/06/23 13:37	JP8N	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	294195	01/06/23 13:39	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			294602	01/09/23 17:16	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	294629	01/09/23 20:20	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			294848	01/10/23 12:27	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			294024	01/05/23 21:09	ZVB7	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	294589	01/09/23 16:49	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0007S014

Date Collected: 01/05/23 07:02
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 18:16	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	294673	01/10/23 06:36	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294799	01/10/23 11:28	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	294190	01/06/23 13:37	JP8N	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	294195	01/06/23 13:39	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			294602	01/09/23 17:18	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	294629	01/09/23 20:20	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			294848	01/10/23 12:29	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	294564	01/09/23 15:03	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0008S017

Date Collected: 01/05/23 07:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 18:18	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-1

Client Sample ID: EVBMP0008S017

Lab Sample ID: 570-122824-5

Date Collected: 01/05/23 07:20

Matrix: Water

Date Received: 01/05/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			50 mL	50 mL	294718	01/10/23 09:17	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294874	01/10/23 14:22	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	294190	01/06/23 13:37	JP8N	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	294195	01/06/23 13:39	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			294602	01/09/23 17:28	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	294629	01/09/23 20:20	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			294848	01/10/23 12:30	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			294024	01/05/23 21:14	ZVB7	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	294564	01/09/23 15:03	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0009S015

Lab Sample ID: 570-122824-6

Date Collected: 01/05/23 07:07

Matrix: Water

Date Received: 01/05/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	294131	01/06/23 10:00	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			294380	01/06/23 18:21	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	294718	01/10/23 09:17	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			294874	01/10/23 14:24	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	294190	01/06/23 13:37	JP8N	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	294195	01/06/23 13:39	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			294602	01/09/23 17:07	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	294629	01/09/23 20:20	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			294848	01/10/23 12:32	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			294024	01/05/23 21:16	ZVB7	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	294564	01/09/23 15:03	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc.
Job ID: 570-122824-1
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8		Water	Cadmium
200.8		Water	Copper
200.8		Water	Lead
200.8	200.8	Water	Cadmium
200.8	200.8	Water	Copper
200.8	200.8	Water	Lead
245.1	245.1	Water	Mercury
SM 2130B		Water	Turbidity

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-1

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122824-1	A2BMP0006S014	Water	01/05/23 07:30	01/05/23 16:00
570-122824-2	A2BMP0007S022	Water	01/05/23 12:12	01/05/23 16:00
570-122824-3	A2BMP0012S012	Water	01/05/23 11:20	01/05/23 16:00
570-122824-4	EVBMP0007S014	Water	01/05/23 07:02	01/05/23 16:00
570-122824-5	EVBMP0008S017	Water	01/05/23 07:20	01/05/23 16:00
570-122824-6	EVBMP0009S015	Water	01/05/23 07:07	01/05/23 16:00

122824

Chain of Custody Record

COC Number: CALS01052301

JACOBS

1/5/2023 8 34 59 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

570-122824 Chain of Custody

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B
A2BMP0006S014	05-Jan-23 7 30	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4'C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb, Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
A2BMP0007S022	04-Jan-23 12 12	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN DENSON	1/5/23 1000
Relinquished by	BRYAN DENSON	1/5/23 1000
Received by		1.5.23/1000
Relinquished by		1-5-23 /1300
Received by	EC	1/5/23 1300
Relinquished by	EC	1/5/23 1600

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

1.6/1.6 1.2/1.2 SCII

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

122824

Chain of Custody Record

COC Number: CALS01052301

JACOBS

1/5/2023 8 34 59 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B
A2BMP0012S012	04-Jan-23 11 20	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4 C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
EVBMP0007S014	05-Jan-23 7 02	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu, Pb Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN BENSON	1/5/23 1000
Relinquished by	BRYAN BENSON	1/5/23 1000
Received by		1.5.23/100
Relinquished by		1-5-23/1300
Received by	EC	1/5/23 1306
Relinquished by	EC	1/5/23 1600

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

Chain of Custody Record

COC Number: CALS01052301

JACOBS

1/5/2023 8 34.59 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PQ 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0008S017	05-Jan-23 7 20	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4 C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu, Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		**6**						
EVBMP0009S015	05-Jan-23 7 07	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4 C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		**6**						

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	BRYAN DENSON	1/5/23 1000
Relinquished by	BRYAN DENSON	1/5/23 1000
Received by		1.5.23/1000
Relinquished by		1.5 23/1320
Received by	EC	1/5/23 1300
Relinquished by	EC	1/5/23 1600

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-122824-1

Login Number: 122824
List Number: 1
Creator: Patel, Jayesh

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

Generated 2/8/2023 5:15:32 PM

JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-122824-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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2/8/2023 5:15:32 PM

Authorized for release by
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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-122824-2

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-122824-2

Comments
No additional comments.

Receipt
The samples were received on 1/5/2023 4:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2º C and 1.6º C.

Dioxin
Methods 8290, 8290A: The bracketing continuing calibration verification (CCV) associated with batch 320-652363 has the isotope dilution analyte (IDA) 13C-OCDF with a percent difference value between the method criteria of 30% to 35% deviation from the initial calibration curve. Per method guidelines, an average relative response factor (RRF) is calculated from the bracketing CCV and is used to quantitate the Isotope Dilution Analyte (IDA) recovery in the associated samples.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method D4464: The sample duplicate precision for the following sample associated with analytical batch 570-301048 was outside control limits: (570-123671-K-1 DU). The associated Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) precision met acceptance criteria.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-2

Client Sample ID: A2BMP0006S014 — Lab Sample ID: 570-122824-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	1.5	J q B	48	0.033	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.1	J B	48	0.087	pg/L	1		8290	Total/NA
OCDD	15	J q B	96	0.092	pg/L	1		8290	Total/NA
OCDF	1.9	J q B	96	0.12	pg/L	1		8290	Total/NA

Client Sample ID: A2BMP0007S022 — Lab Sample ID: 570-122824-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	2.3	J q B	49	0.092	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	2.6	J B	49	0.092	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	2.1	J q B	49	0.084	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	56	B	49	0.41	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	6.9	J B	49	0.13	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	0.57	J q B	49	0.15	pg/L	1		8290	Total/NA
OCDD	810	B	98	1.3	pg/L	1		8290	Total/NA
OCDF	22	J B	98	0.30	pg/L	1		8290	Total/NA
Clay (less than 0.00391 mm)	14.35		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	82.80		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	97.15		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	2.85		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: A2BMP0012S012 — Lab Sample ID: 570-122824-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	1.9	J q B	49	0.18	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	4.5	J q B	49	0.16	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	2.9	J q B	49	0.16	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	92	B	49	0.46	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	18	J B	49	0.26	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	1.2	J B	49	0.29	pg/L	1		8290	Total/NA
OCDD	800	B	98	1.2	pg/L	1		8290	Total/NA
OCDF	41	J B	98	0.36	pg/L	1		8290	Total/NA
Clay (less than 0.00391 mm)	9.13		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	2.02		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	69.48		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	78.61		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	19.36		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EVBMP0007S014 — Lab Sample ID: 570-122824-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	1.3	J q B	50	0.032	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	12	J B	50	0.15	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	2.7	J q B	50	0.066	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	0.38	J q B	50	0.082	pg/L	1		8290	Total/NA
OCDD	180	B	100	0.32	pg/L	1		8290	Total/NA
OCDF	11	J B	100	0.21	pg/L	1		8290	Total/NA

Client Sample ID: EVBMP0008S017 — Lab Sample ID: 570-122824-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDD	0.29	J q	51	0.071	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDD	2.0	J B	51	0.059	pg/L	1		8290	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EVBMP0008S017 (Continued)

Lab Sample ID: 570-122824-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,6,7,8-HxCDD	0.86	J B q	51	0.058	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	0.49	J B q	51	0.053	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.43	J B q	51	0.042	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	16	J B	51	0.14	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	4.9	J B	51	0.12	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	0.32	J B q	51	0.11	pg/L	1		8290	Total/NA
OCDD	190	B	100	0.30	pg/L	1		8290	Total/NA
OCDF	16	J B	100	0.12	pg/L	1		8290	Total/NA
Clay (less than 0.00391 mm)	11.23		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	85.11		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	96.34		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	3.66		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EVBMP0009S015

Lab Sample ID: 570-122824-6

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	1.7	J B q	51	0.072	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	0.96	J B q	51	0.070	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	0.95	J B	51	0.065	pg/L	1		8290	Total/NA
2,3,4,6,7,8-HxCDF	0.20	J B	51	0.035	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	21	J B	51	0.22	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	5.2	J B	51	0.12	pg/L	1		8290	Total/NA
OCDD	270	B	100	0.25	pg/L	1		8290	Total/NA
OCDF	18	J B	100	0.14	pg/L	1		8290	Total/NA
Clay (less than 0.00391 mm)	6.26		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	70.64		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	76.90		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	23.10		0.01	0.01	%	1		D4464	Total/NA

This Detection Summary does not include radiochemical test results.

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: A2BMP0006S014
Date Collected: 01/05/23 07:30
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.6	0.21	pg/L		01/23/23 05:37	02/06/23 00:34	1
2,3,7,8-TCDF	ND		9.6	0.025	pg/L		01/23/23 05:37	02/06/23 00:34	1
1,2,3,7,8-PeCDD	ND		48	0.15	pg/L		01/23/23 05:37	02/06/23 00:34	1
1,2,3,7,8-PeCDF	ND		48	0.066	pg/L		01/23/23 05:37	02/06/23 00:34	1
2,3,4,7,8-PeCDF	ND		48	0.072	pg/L		01/23/23 05:37	02/06/23 00:34	1
1,2,3,4,7,8-HxCDD	ND		48	0.049	pg/L		01/23/23 05:37	02/06/23 00:34	1
1,2,3,6,7,8-HxCDD	ND		48	0.050	pg/L		01/23/23 05:37	02/06/23 00:34	1
1,2,3,7,8,9-HxCDD	ND		48	0.045	pg/L		01/23/23 05:37	02/06/23 00:34	1
1,2,3,4,7,8-HxCDF	ND		48	0.036	pg/L		01/23/23 05:37	02/06/23 00:34	1
1,2,3,6,7,8-HxCDF	ND		48	0.036	pg/L		01/23/23 05:37	02/06/23 00:34	1
2,3,4,6,7,8-HxCDF	ND		48	0.034	pg/L		01/23/23 05:37	02/06/23 00:34	1
1,2,3,7,8,9-HxCDF	ND		48	0.038	pg/L		01/23/23 05:37	02/06/23 00:34	1
1,2,3,4,6,7,8-HpCDD	**1.5**	**J q B**	48	0.033	pg/L		01/23/23 05:37	02/06/23 00:34	1
1,2,3,4,6,7,8-HpCDF	**1.1**	**J B**	48	0.087	pg/L		01/23/23 05:37	02/06/23 00:34	1
1,2,3,4,7,8,9-HpCDF	ND		48	0.10	pg/L		01/23/23 05:37	02/06/23 00:34	1
OCDD	**15**	**J q B**	96	0.092	pg/L		01/23/23 05:37	02/06/23 00:34	1
OCDF	**1.9**	**J q B**	96	0.12	pg/L		01/23/23 05:37	02/06/23 00:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-2,3,7,8-TCDF	*79*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-1,2,3,7,8-PeCDD	*101*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-1,2,3,7,8-PeCDF	*97*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-1,2,3,6,7,8-HxCDD	*83*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-2,3,4,7,8-PeCDF	*97*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-1,2,3,4,7,8-HxCDD	*78*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-1,2,3,4,7,8-HxCDF	*82*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*75*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*76*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-1,2,3,6,7,8-HxCDF	*78*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-OCDD	*65*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-1,2,3,7,8,9-HxCDF	*75*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-2,3,4,6,7,8-HxCDF	*83*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*74*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*
13C-OCDF	*63*		*40 - 135*	*01/23/23 05:37*	*02/06/23 00:34*	*1*

Client Sample ID: A2BMP0007S022
Date Collected: 01/05/23 12:12
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.8	0.26	pg/L		01/23/23 05:37	02/06/23 01:22	1
2,3,7,8-TCDF	ND		9.8	0.024	pg/L		01/23/23 05:37	02/06/23 01:22	1
1,2,3,7,8-PeCDD	ND		49	0.11	pg/L		01/23/23 05:37	02/06/23 01:22	1
1,2,3,7,8-PeCDF	ND		49	0.058	pg/L		01/23/23 05:37	02/06/23 01:22	1
2,3,4,7,8-PeCDF	ND		49	0.065	pg/L		01/23/23 05:37	02/06/23 01:22	1
1,2,3,4,7,8-HxCDD	**2.3**	**J q B**	49	0.092	pg/L		01/23/23 05:37	02/06/23 01:22	1
1,2,3,6,7,8-HxCDD	**2.6**	**J B**	49	0.092	pg/L		01/23/23 05:37	02/06/23 01:22	1
1,2,3,7,8,9-HxCDD	**2.1**	**J q B**	49	0.084	pg/L		01/23/23 05:37	02/06/23 01:22	1
1,2,3,4,7,8-HxCDF	ND		49	0.073	pg/L		01/23/23 05:37	02/06/23 01:22	1
1,2,3,6,7,8-HxCDF	ND		49	0.073	pg/L		01/23/23 05:37	02/06/23 01:22	1

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: A2BMP0007S022
Date Collected: 01/05/23 12:12
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,6,7,8-HxCDF	ND		49	0.067	pg/L		01/23/23 05:37	02/06/23 01:22	1
1,2,3,7,8,9-HxCDF	ND		49	0.082	pg/L		01/23/23 05:37	02/06/23 01:22	1
1,2,3,4,6,7,8-HpCDD	**56**	**B**	49	0.41	pg/L		01/23/23 05:37	02/06/23 01:22	1
1,2,3,4,6,7,8-HpCDF	**6.9**	**J B**	49	0.13	pg/L		01/23/23 05:37	02/06/23 01:22	1
1,2,3,4,7,8,9-HpCDF	**0.57**	**J q B**	49	0.15	pg/L		01/23/23 05:37	02/06/23 01:22	1
OCDD	**810**	**B**	98	1.3	pg/L		01/23/23 05:37	02/06/23 01:22	1
OCDF	**22**	**J B**	98	0.30	pg/L		01/23/23 05:37	02/06/23 01:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-2,3,7,8-TCDF	*82*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-1,2,3,7,8-PeCDD	*88*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-1,2,3,7,8-PeCDF	*85*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-1,2,3,6,7,8-HxCDD	*86*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-2,3,4,7,8-PeCDF	*79*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-1,2,3,4,7,8-HxCDD	*82*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-1,2,3,4,7,8-HxCDF	*92*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*89*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*91*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-1,2,3,6,7,8-HxCDF	*91*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-OCDD	*85*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-1,2,3,7,8,9-HxCDF	*80*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-2,3,4,6,7,8-HxCDF	*91*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*87*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*
13C-OCDF	*81*		*40 - 135*	*01/23/23 05:37*	*02/06/23 01:22*	*1*

Client Sample ID: A2BMP0012S012
Date Collected: 01/05/23 11:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.8	0.36	pg/L		01/23/23 05:37	02/06/23 02:11	1
2,3,7,8-TCDF	ND		9.8	0.055	pg/L		01/23/23 05:37	02/06/23 02:11	1
1,2,3,7,8-PeCDD	ND		49	0.16	pg/L		01/23/23 05:37	02/06/23 02:11	1
1,2,3,7,8-PeCDF	ND		49	0.055	pg/L		01/23/23 05:37	02/06/23 02:11	1
2,3,4,7,8-PeCDF	ND		49	0.070	pg/L		01/23/23 05:37	02/06/23 02:11	1
1,2,3,4,7,8-HxCDD	**1.9**	**J q B**	49	0.18	pg/L		01/23/23 05:37	02/06/23 02:11	1
1,2,3,6,7,8-HxCDD	**4.5**	**J q B**	49	0.16	pg/L		01/23/23 05:37	02/06/23 02:11	1
1,2,3,7,8,9-HxCDD	**2.9**	**J q B**	49	0.16	pg/L		01/23/23 05:37	02/06/23 02:11	1
1,2,3,4,7,8-HxCDF	ND		49	0.19	pg/L		01/23/23 05:37	02/06/23 02:11	1
1,2,3,6,7,8-HxCDF	ND		49	0.19	pg/L		01/23/23 05:37	02/06/23 02:11	1
2,3,4,6,7,8-HxCDF	ND		49	0.17	pg/L		01/23/23 05:37	02/06/23 02:11	1
1,2,3,7,8,9-HxCDF	ND		49	0.21	pg/L		01/23/23 05:37	02/06/23 02:11	1
1,2,3,4,6,7,8-HpCDD	**92**	**B**	49	0.46	pg/L		01/23/23 05:37	02/06/23 02:11	1
1,2,3,4,6,7,8-HpCDF	**18**	**J B**	49	0.26	pg/L		01/23/23 05:37	02/06/23 02:11	1
1,2,3,4,7,8,9-HpCDF	**1.2**	**J B**	49	0.29	pg/L		01/23/23 05:37	02/06/23 02:11	1
OCDD	**800**	**B**	98	1.2	pg/L		01/23/23 05:37	02/06/23 02:11	1
OCDF	**41**	**J B**	98	0.36	pg/L		01/23/23 05:37	02/06/23 02:11	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-2,3,7,8-TCDF	*78*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: A2BMP0012S012
Date Collected: 01/05/23 11:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-3
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDD	*73*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-1,2,3,7,8-PeCDF	*76*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-1,2,3,6,7,8-HxCDD	*79*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-2,3,4,7,8-PeCDF	*63*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-1,2,3,4,7,8-HxCDD	*70*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-1,2,3,4,7,8-HxCDF	*80*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*77*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*76*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-1,2,3,6,7,8-HxCDF	*83*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-OCDD	*72*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-1,2,3,7,8,9-HxCDF	*78*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-2,3,4,6,7,8-HxCDF	*89*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*79*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*
13C-OCDF	*70*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:11*	*1*

Client Sample ID: EVBMP0007S014
Date Collected: 01/05/23 07:02
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-4
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.28	pg/L		01/23/23 05:37	02/06/23 02:59	1
2,3,7,8-TCDF	ND		10	0.038	pg/L		01/23/23 05:37	02/06/23 02:59	1
1,2,3,7,8-PeCDD	ND		50	0.13	pg/L		01/23/23 05:37	02/06/23 02:59	1
1,2,3,7,8-PeCDF	ND		50	0.041	pg/L		01/23/23 05:37	02/06/23 02:59	1
2,3,4,7,8-PeCDF	ND		50	0.048	pg/L		01/23/23 05:37	02/06/23 02:59	1
1,2,3,4,7,8-HxCDD	**1.3**	**J q B**	50	0.032	pg/L		01/23/23 05:37	02/06/23 02:59	1
1,2,3,6,7,8-HxCDD	ND		50	0.031	pg/L		01/23/23 05:37	02/06/23 02:59	1
1,2,3,7,8,9-HxCDD	ND		50	0.029	pg/L		01/23/23 05:37	02/06/23 02:59	1
1,2,3,4,7,8-HxCDF	ND		50	0.053	pg/L		01/23/23 05:37	02/06/23 02:59	1
1,2,3,6,7,8-HxCDF	ND		50	0.049	pg/L		01/23/23 05:37	02/06/23 02:59	1
2,3,4,6,7,8-HxCDF	ND		50	0.044	pg/L		01/23/23 05:37	02/06/23 02:59	1
1,2,3,7,8,9-HxCDF	ND		50	0.050	pg/L		01/23/23 05:37	02/06/23 02:59	1
1,2,3,4,6,7,8-HpCDD	**12**	**J B**	50	0.15	pg/L		01/23/23 05:37	02/06/23 02:59	1
1,2,3,4,6,7,8-HpCDF	**2.7**	**J q B**	50	0.066	pg/L		01/23/23 05:37	02/06/23 02:59	1
1,2,3,4,7,8,9-HpCDF	**0.38**	**J q B**	50	0.082	pg/L		01/23/23 05:37	02/06/23 02:59	1
OCDD	**180**	**B**	100	0.32	pg/L		01/23/23 05:37	02/06/23 02:59	1
OCDF	**11**	**J B**	100	0.21	pg/L		01/23/23 05:37	02/06/23 02:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*70*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-2,3,7,8-TCDF	*75*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-1,2,3,7,8-PeCDF	*75*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-1,2,3,6,7,8-HxCDD	*76*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-2,3,4,7,8-PeCDF	*69*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-1,2,3,4,7,8-HxCDD	*71*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-1,2,3,4,7,8-HxCDF	*76*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*74*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*78*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-1,2,3,6,7,8-HxCDF	*79*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-OCDD	*74*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0007S014
Date Collected: 01/05/23 07:02
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-4
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8,9-HxCDF	*78*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-2,3,4,6,7,8-HxCDF	*86*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*73*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*
13C-OCDF	*71*		*40 - 135*	*01/23/23 05:37*	*02/06/23 02:59*	*1*

Client Sample ID: EVBMP0008S017
Date Collected: 01/05/23 07:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-5
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.11	pg/L		01/24/23 06:24	02/07/23 21:26	1
2,3,7,8-TCDF	ND		10	0.0078	pg/L		01/24/23 06:24	02/07/23 21:26	1
1,2,3,7,8-PeCDD	**0.29**	**J q**	51	0.071	pg/L		01/24/23 06:24	02/07/23 21:26	1
1,2,3,7,8-PeCDF	ND		51	0.022	pg/L		01/24/23 06:24	02/07/23 21:26	1
2,3,4,7,8-PeCDF	ND		51	0.026	pg/L		01/24/23 06:24	02/07/23 21:26	1
1,2,3,4,7,8-HxCDD	**2.0**	**J B**	51	0.059	pg/L		01/24/23 06:24	02/07/23 21:26	1
1,2,3,6,7,8-HxCDD	**0.86**	**J B q**	51	0.058	pg/L		01/24/23 06:24	02/07/23 21:26	1
1,2,3,7,8,9-HxCDD	**0.49**	**J B q**	51	0.053	pg/L		01/24/23 06:24	02/07/23 21:26	1
1,2,3,4,7,8-HxCDF	ND		51	0.055	pg/L		01/24/23 06:24	02/07/23 21:26	1
1,2,3,6,7,8-HxCDF	ND		51	0.052	pg/L		01/24/23 06:24	02/07/23 21:26	1
2,3,4,6,7,8-HxCDF	ND		51	0.041	pg/L		01/24/23 06:24	02/07/23 21:26	1
1,2,3,7,8,9-HxCDF	**0.43**	**J B q**	51	0.042	pg/L		01/24/23 06:24	02/07/23 21:26	1
1,2,3,4,6,7,8-HpCDD	**16**	**J B**	51	0.14	pg/L		01/24/23 06:24	02/07/23 21:26	1
1,2,3,4,6,7,8-HpCDF	**4.9**	**J B**	51	0.12	pg/L		01/24/23 06:24	02/07/23 21:26	1
1,2,3,4,7,8,9-HpCDF	**0.32**	**J B q**	51	0.11	pg/L		01/24/23 06:24	02/07/23 21:26	1
OCDD	**190**	**B**	100	0.30	pg/L		01/24/23 06:24	02/07/23 21:26	1
OCDF	**16**	**J B**	100	0.12	pg/L		01/24/23 06:24	02/07/23 21:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*84*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-2,3,7,8-TCDF	*69*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-1,2,3,7,8-PeCDD	*91*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-1,2,3,7,8-PeCDF	*79*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-1,2,3,6,7,8-HxCDD	*70*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-2,3,4,7,8-PeCDF	*72*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-1,2,3,4,7,8-HxCDD	*67*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-1,2,3,4,7,8-HxCDF	*53*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*87*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*58*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-1,2,3,6,7,8-HxCDF	*55*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-OCDD	*82*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-1,2,3,7,8,9-HxCDF	*68*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-2,3,4,6,7,8-HxCDF	*68*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*72*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*
13C-OCDF	*87*		*40 - 135*	*01/24/23 06:24*	*02/07/23 21:26*	*1*

Client Sample ID: EVBMP0009S015
Date Collected: 01/05/23 07:07
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-6
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.10	pg/L		01/24/23 06:24	02/07/23 22:14	1
2,3,7,8-TCDF	ND		10	0.0084	pg/L		01/24/23 06:24	02/07/23 22:14	1

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0009S015
Date Collected: 01/05/23 07:07
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-6
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3,7,8-PeCDD	ND		51	0.057	pg/L		01/24/23 06:24	02/07/23 22:14	1
1,2,3,7,8-PeCDF	ND		51	0.019	pg/L		01/24/23 06:24	02/07/23 22:14	1
2,3,4,7,8-PeCDF	ND		51	0.021	pg/L		01/24/23 06:24	02/07/23 22:14	1
1,2,3,4,7,8-HxCDD	**1.7**	**J B q**	51	0.072	pg/L		01/24/23 06:24	02/07/23 22:14	1
1,2,3,6,7,8-HxCDD	**0.96**	**J B q**	51	0.070	pg/L		01/24/23 06:24	02/07/23 22:14	1
1,2,3,7,8,9-HxCDD	**0.95**	**J B**	51	0.065	pg/L		01/24/23 06:24	02/07/23 22:14	1
1,2,3,4,7,8-HxCDF	ND		51	0.041	pg/L		01/24/23 06:24	02/07/23 22:14	1
1,2,3,6,7,8-HxCDF	ND		51	0.040	pg/L		01/24/23 06:24	02/07/23 22:14	1
2,3,4,6,7,8-HxCDF	**0.20**	**J B**	51	0.035	pg/L		01/24/23 06:24	02/07/23 22:14	1
1,2,3,7,8,9-HxCDF	ND		51	0.036	pg/L		01/24/23 06:24	02/07/23 22:14	1
1,2,3,4,6,7,8-HpCDD	**21**	**J B**	51	0.22	pg/L		01/24/23 06:24	02/07/23 22:14	1
1,2,3,4,6,7,8-HpCDF	**5.2**	**J B**	51	0.12	pg/L		01/24/23 06:24	02/07/23 22:14	1
1,2,3,4,7,8,9-HpCDF	ND		51	0.13	pg/L		01/24/23 06:24	02/07/23 22:14	1
OCDD	**270**	**B**	100	0.25	pg/L		01/24/23 06:24	02/07/23 22:14	1
OCDF	**18**	**J B**	100	0.14	pg/L		01/24/23 06:24	02/07/23 22:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*84*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-2,3,7,8-TCDF	*65*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-1,2,3,7,8-PeCDD	*102*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-1,2,3,7,8-PeCDF	*81*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-1,2,3,6,7,8-HxCDD	*82*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-2,3,4,7,8-PeCDF	*77*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-1,2,3,4,7,8-HxCDD	*82*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-1,2,3,4,7,8-HxCDF	*64*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*91*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*68*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-1,2,3,6,7,8-HxCDF	*63*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-OCDD	*83*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-1,2,3,7,8,9-HxCDF	*69*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-2,3,4,6,7,8-HxCDF	*69*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*74*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*
13C-OCDF	*91*		*40 - 135*	*01/24/23 06:24*	*02/07/23 22:14*	*1*

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: A2BMP0006S014
Date Collected: 01/05/23 07:30
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/02/23 17:58	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 17:58	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/02/23 17:58	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 17:58	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/02/23 17:58	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/02/23 17:58	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/02/23 17:58	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 17:58	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/02/23 17:58	1

Client Sample ID: A2BMP0007S022
Date Collected: 01/05/23 12:12
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**14.35**		0.01	0.01	%			02/02/23 17:59	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 17:59	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/02/23 17:59	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 17:59	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/02/23 17:59	1
Silt (0.00391 to 0.0625mm)	**82.80**		0.01	0.01	%			02/02/23 17:59	1
Total Silt and Clay (0 to 0.0626mm)	**97.15**		0.01	0.01	%			02/02/23 17:59	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 17:59	1
Very Fine Sand (0.0625 to 0.125 mm)	**2.85**		0.01	0.01	%			02/02/23 17:59	1

Client Sample ID: A2BMP0012S012
Date Collected: 01/05/23 11:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**9.13**		0.01	0.01	%			02/02/23 18:05	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 18:05	1
Fine Sand (0.125 to 0.25mm)	**2.02**		0.01	0.01	%			02/02/23 18:05	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 18:05	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/02/23 18:05	1
Silt (0.00391 to 0.0625mm)	**69.48**		0.01	0.01	%			02/02/23 18:05	1
Total Silt and Clay (0 to 0.0626mm)	**78.61**		0.01	0.01	%			02/02/23 18:05	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 18:05	1
Very Fine Sand (0.0625 to 0.125 mm)	**19.36**		0.01	0.01	%			02/02/23 18:05	1

Client Sample ID: EVBMP0007S014
Date Collected: 01/05/23 07:02
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/02/23 18:12	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 18:12	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/02/23 18:12	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 18:12	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/02/23 18:12	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/02/23 18:12	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/02/23 18:12	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Client Sample ID: EVBMP0007S014 **Lab Sample ID: 570-122824-4**
Date Collected: 01/05/23 07:02 **Matrix: Water**
Date Received: 01/05/23 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 18:12	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/02/23 18:12	1

Client Sample ID: EVBMP0008S017 **Lab Sample ID: 570-122824-5**
Date Collected: 01/05/23 07:20 **Matrix: Water**
Date Received: 01/05/23 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**11.23**		0.01	0.01	%			02/02/23 18:25	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 18:25	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/02/23 18:25	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 18:25	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/02/23 18:25	1
Silt (0.00391 to 0.0625mm)	**85.11**		0.01	0.01	%			02/02/23 18:25	1
Total Silt and Clay (0 to 0.0626mm)	**96.34**		0.01	0.01	%			02/02/23 18:25	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 18:25	1
Very Fine Sand (0.0625 to 0.125 mm)	**3.66**		0.01	0.01	%			02/02/23 18:25	1

Client Sample ID: EVBMP0009S015 **Lab Sample ID: 570-122824-6**
Date Collected: 01/05/23 07:07 **Matrix: Water**
Date Received: 01/05/23 16:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**6.26**		0.01	0.01	%			02/02/23 18:31	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 18:31	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/02/23 18:31	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 18:31	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/02/23 18:31	1
Silt (0.00391 to 0.0625mm)	**70.64**		0.01	0.01	%			02/02/23 18:31	1
Total Silt and Clay (0 to 0.0626mm)	**76.90**		0.01	0.01	%			02/02/23 18:31	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 18:31	1
Very Fine Sand (0.0625 to 0.125 mm)	**23.10**		0.01	0.01	%			02/02/23 18:31	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

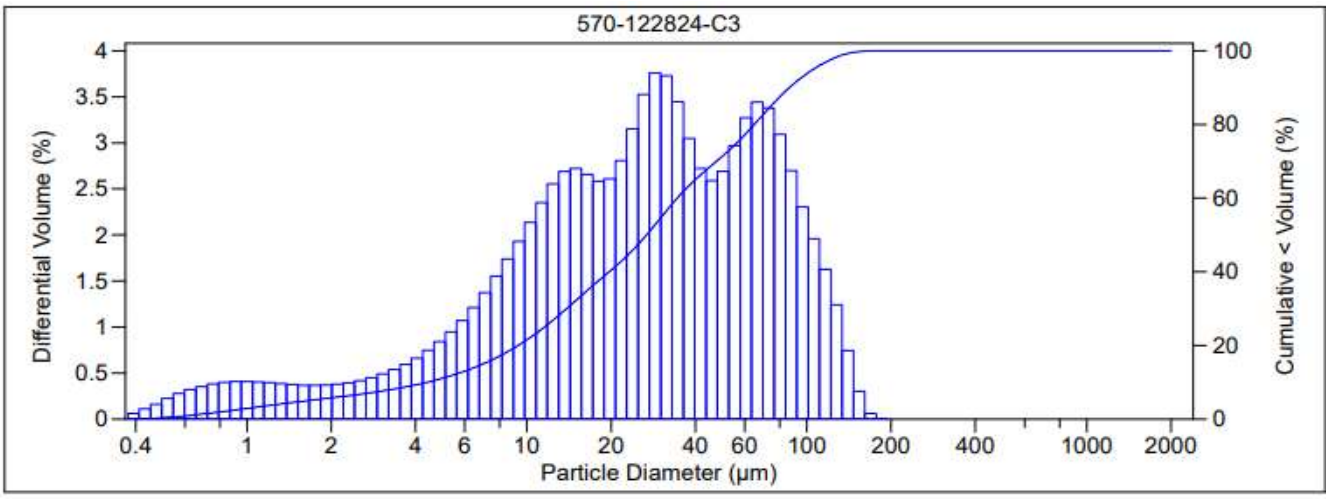
Jacobs Engineering Group, Inc.

Date Sampled:	01/05/23
Date Received:	01/05/23
Work Order No:	570-122824
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
A2BMP0012S012		Silt	0.037

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	2.02	19.36	69.48	9.13	78.61



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	01/05/23
Date Received:	01/05/23
Work Order No:	570-122824
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
A2BMP0006S014		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

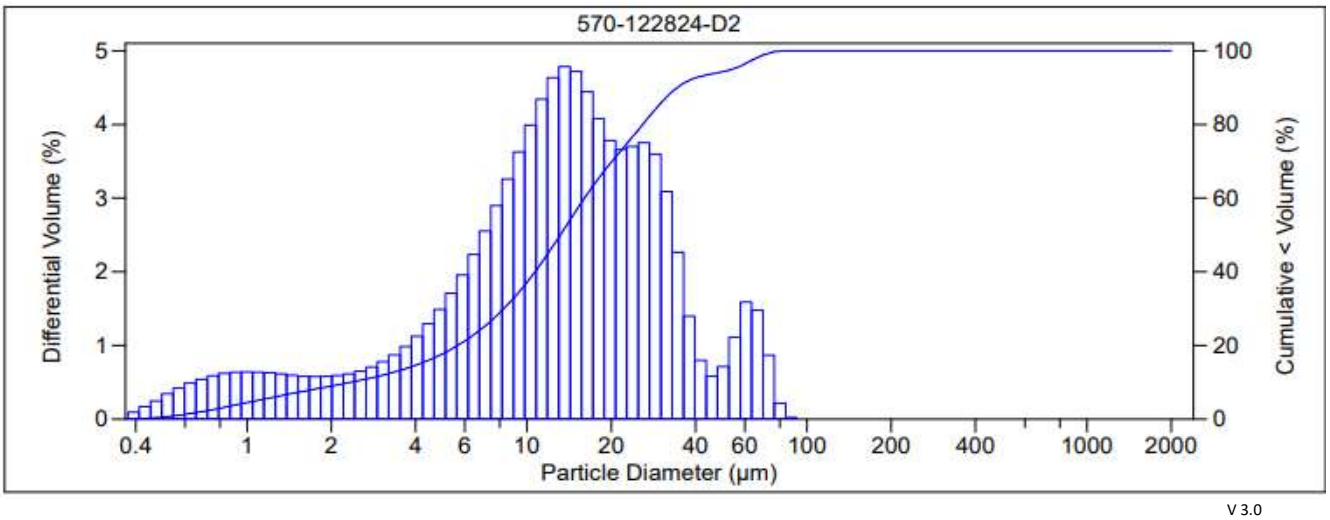
Jacobs Engineering Group, Inc.

Date Sampled:	01/05/23
Date Received:	01/05/23
Work Order No:	570-122824
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
A2BMP0007S022		Silt	0.017

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	2.85	82.80	14.35	97.15



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	01/05/23
Date Received:	01/05/23
Work Order No:	570-122824
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0007S014		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

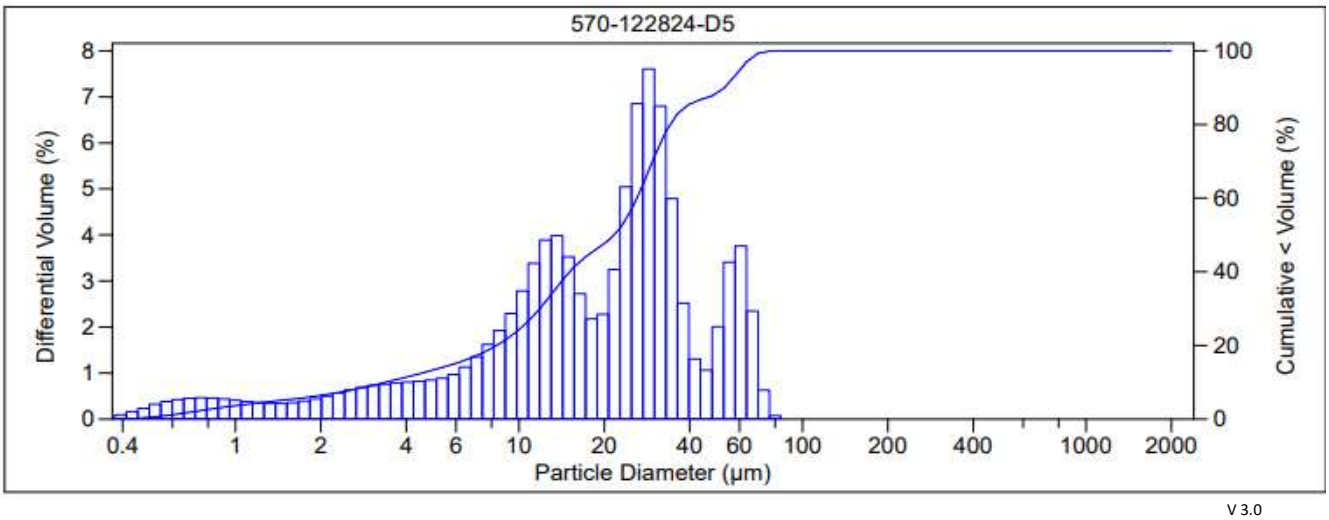
Jacobs Engineering Group, Inc.

Date Sampled:	01/05/23
Date Received:	01/05/23
Work Order No:	570-122824
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0008S017		Silt	0.024

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	3.66	85.11	11.23	96.34



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

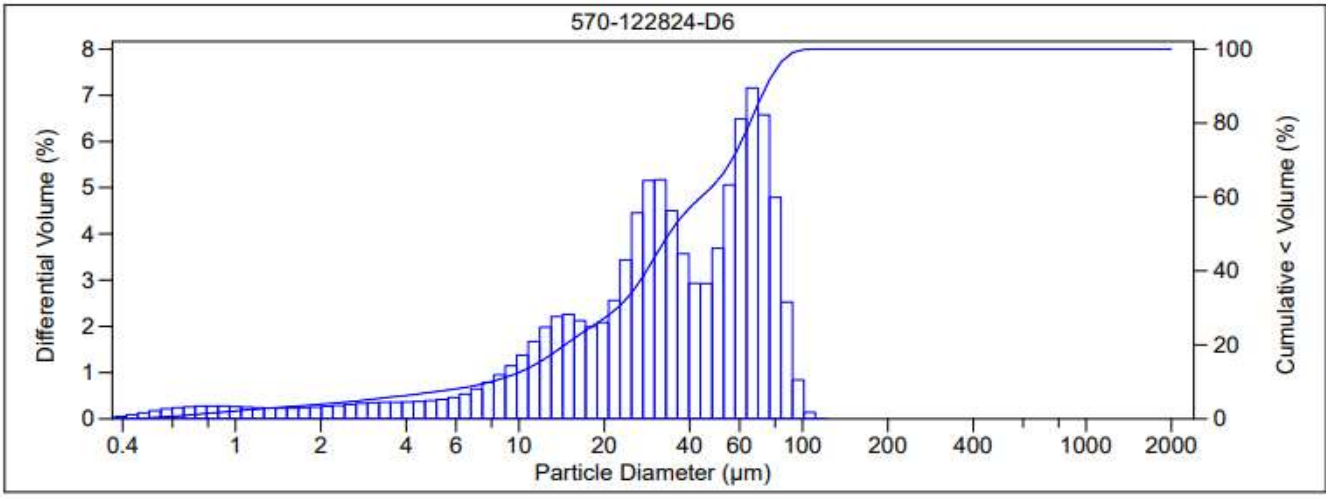
Jacobs Engineering Group, Inc.

Date Sampled:	01/05/23
Date Received:	01/05/23
Work Order No:	570-122824
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0009S015		Silt	0.039

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	23.10	70.64	6.26	76.90



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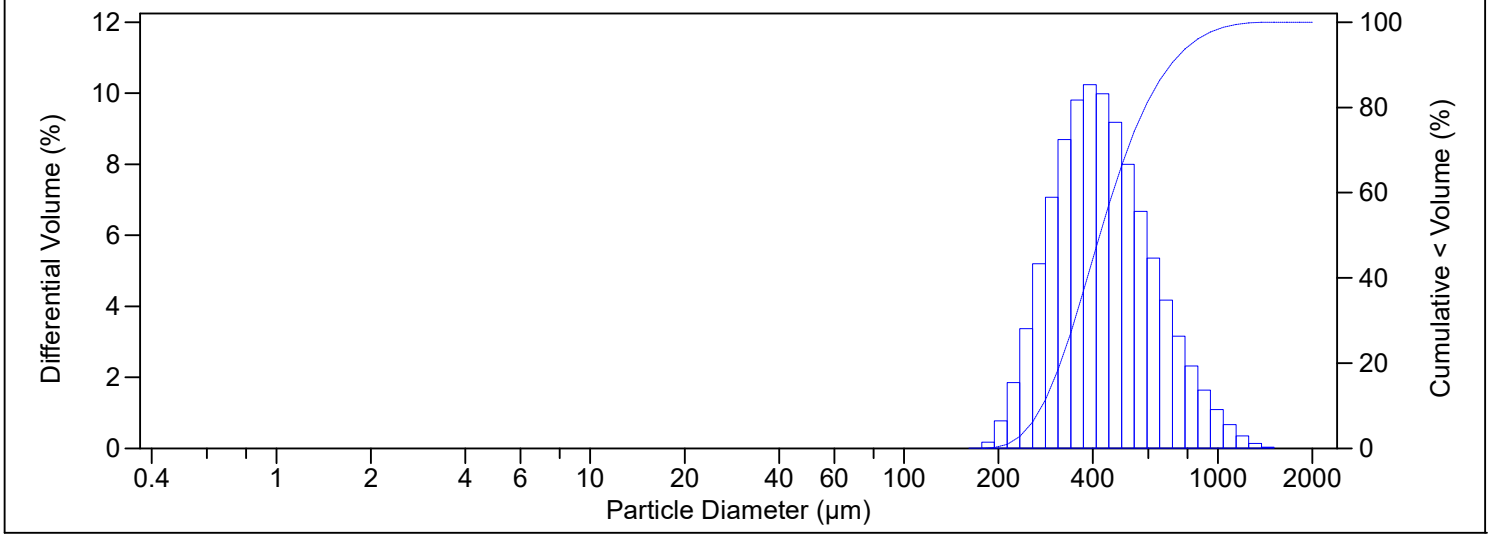
	STD SAND_ 2 Feb 2023_20.55.25.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	SP9M		
Run number:	16		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.68%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:54 2 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	8%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 2 Feb 2023_20.55.25.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	462.3 µm	S.D.:	181.7 µm
Median:	420.8 µm	Variance:	33001 µm^2
Mean/Median ratio:	1.099	Skewness:	1.360 Right skewed
Mode:	391.0 µm	Kurtosis:	2.335 Leptokurtic

d_{10}: 275.4 µm d_{50}: 420.8 µm d_{90}: 708.0 µm

Folk and Ward Statistics (Phi)

Mean:	1.22	Median:	1.25	Deviation:	0.53
Skewness:	-0.10	Kurtosis:	0.99		

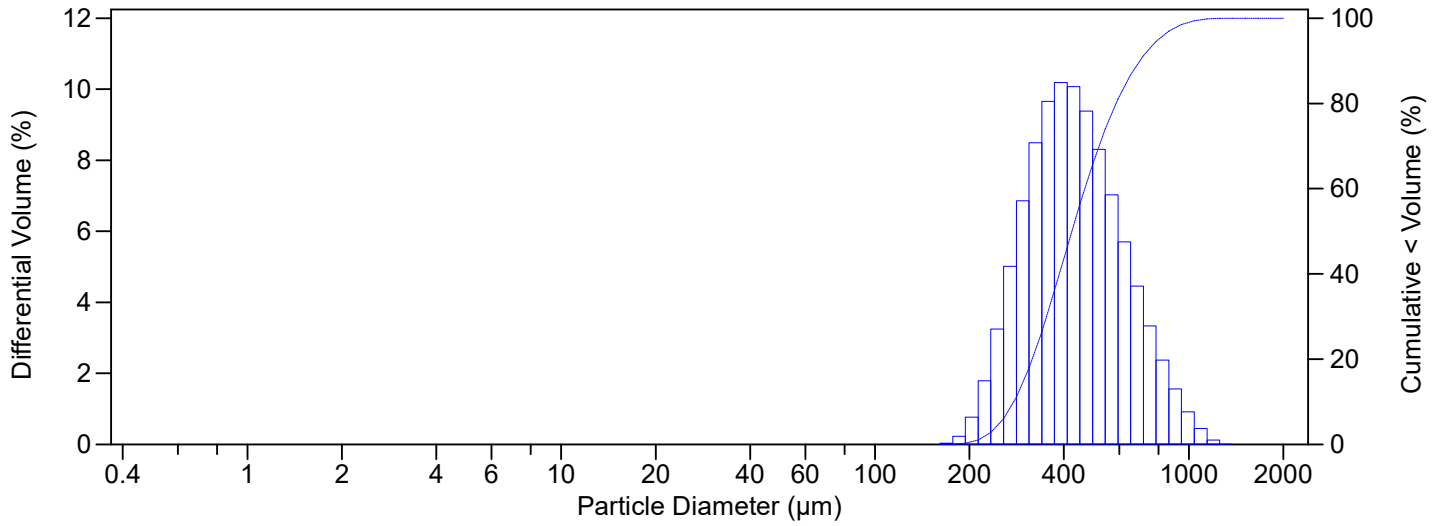
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
248.9 µm	300.0 µm	332.4 µm	384.0 µm	420.8 µm	546.9 µm	626.9 µm	828.9 µm

Particle Diameter µm	STD SAND_ 2 Feb 2023 _20.55.25 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	5.17
250	62.3
500	30.9
1000	1.69
2000	

STD SAND_ 2 Feb 2023_20.55.25.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.36
0.412	0	22.73	0	1255	0.14
0.452	0	24.95	0	1377	0.033
0.496	0	27.39	0	1512	0.0020
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.010		
3.206	0	176.9	0.18		
3.519	0	194.2	0.78		
3.863	0	213.2	1.85		
4.241	0	234.1	3.37		
4.656	0	256.9	5.20		
5.111	0	282.1	7.08		
5.611	0	309.6	8.70		
6.159	0	339.9	9.80		
6.761	0	373.1	10.2		
7.422	0	409.6	9.99		
8.148	0	449.7	9.18		
8.944	0	493.6	8.00		
9.819	0	541.9	6.67		
10.78	0	594.9	5.36		
11.83	0	653.0	4.17		
12.99	0	716.9	3.16		
14.26	0	786.9	2.32		
15.65	0	863.9	1.64		
17.18	0	948.3	1.10		
18.86	0	1041	0.67		

File name:	C:\LS13320\STD SAND_ 2 Feb 2023_21.29.21.$ls		
	STD SAND_ 2 Feb 2023_21.29.21.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	SP9M		
Run number:	18		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.91%		
LS 13 320	Aqueous Liquid Module		
Start time:	21:28 2 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	8%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 2 Feb 2023_21.29.21.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	460.3 µm	S.D.:	170.7 µm
Median:	424.4 µm	Variance:	29150 µm^2
Mean/Median ratio:	1.084	Skewness:	1.106 Right skewed
Mode:	391.0 µm	Kurtosis:	1.278 Leptokurtic

d_{10}: 276.6 µm d_{50}: 424.4 µm d_{90}: 699.3 µm

Folk and Ward Statistics (Phi)

Mean:	1.21	Median:	1.24	Deviation:	0.52
Skewness:	-0.08	Kurtosis:	0.97		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
249.4 µm	301.8 µm	334.8 µm	387.1 µm	424.4 µm	549.1 µm	624.8 µm	800.9 µm

Particle Diameter µm	STD SAND_ 2 Feb 2023 _21.29.21 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	5.08
250	61.7
500	32.2
1000	0.99
2000	

STD SAND_ 2 Feb 2023_21.29.21.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.13
0.412	0	22.73	0	1255	0.0089
0.452	0	24.95	0	1377	0
0.496	0	27.39	0	1512	0
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0.0020		
2.920	0	161.2	0.038		
3.206	0	176.9	0.23		
3.519	0	194.2	0.77		
3.863	0	213.2	1.79		
4.241	0	234.1	3.24		
4.656	0	256.9	5.02		
5.111	0	282.1	6.86		
5.611	0	309.6	8.49		
6.159	0	339.9	9.66		
6.761	0	373.1	10.2		
7.422	0	409.6	10.1		
8.148	0	449.7	9.38		
8.944	0	493.6	8.31		
9.819	0	541.9	7.03		
10.78	0	594.9	5.71		
11.83	0	653.0	4.46		
12.99	0	716.9	3.34		
14.26	0	786.9	2.37		
15.65	0	863.9	1.56		
17.18	0	948.3	0.92		
18.86	0	1041	0.45		

Isotope Dilution Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-2

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (40-135)	TCDF (40-135)	PeCDD (40-135)	PeCDF (40-135)	HxDD (40-135)	PeCF (40-135)	HxCDD (40-135)	HxCDF (40-135)
570-122824-1	A2BMP0006S014	77	79	101	97	83	97	78	82
570-122824-2	A2BMP0007S022	79	82	88	85	86	79	82	92
570-122824-3	A2BMP0012S012	76	78	73	76	79	63	70	80
570-122824-4	EVBMP0007S014	70	75	76	75	76	69	71	76
570-122824-5	EVBMP0008S017	84	69	91	79	70	72	67	53
570-122824-6	EVBMP0009S015	84	65	102	81	82	77	82	64
LCS 320-648634/2-A	Lab Control Sample	81	87	98	86	80	89	80	83
LCS 320-648859/2-A	Lab Control Sample	87	68	98	80	76	75	72	58
LCSD 320-648634/3-A	Lab Control Sample Dup	82	80	85	79	73	70	73	81
LCSD 320-648859/3-A	Lab Control Sample Dup	86	70	98	82	82	79	78	62
MB 320-648634/1-A	Method Blank	83	83	78	86	76	79	77	80
MB 320-648859/1-A	Method Blank	77	67	85	73	73	67	71	56

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (40-135)	HpCDF (40-135)	HxDF (40-135)	OCDD (40-135)	HxCF (40-135)	13CHxCF (40-135)	HpCDF2 (40-135)	OCDF (40-135)
570-122824-1	A2BMP0006S014	75	76	78	65	75	83	74	63
570-122824-2	A2BMP0007S022	89	91	91	85	80	91	87	81
570-122824-3	A2BMP0012S012	77	76	83	72	78	89	79	70
570-122824-4	EVBMP0007S014	74	78	79	74	78	86	73	71
570-122824-5	EVBMP0008S017	87	58	55	82	68	68	72	87
570-122824-6	EVBMP0009S015	91	68	63	83	69	69	74	91
LCS 320-648634/2-A	Lab Control Sample	84	80	80	89	83	84	88	87
LCS 320-648859/2-A	Lab Control Sample	93	68	59	88	71	73	80	95
LCSD 320-648634/3-A	Lab Control Sample Dup	85	77	80	84	86	86	83	82
LCSD 320-648859/3-A	Lab Control Sample Dup	91	68	64	83	67	73	74	91
MB 320-648634/1-A	Method Blank	85	79	78	84	81	83	87	82
MB 320-648859/1-A	Method Blank	78	58	56	69	60	68	65	73

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
OCDD = 13C-OCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDF = 13C-OCDF

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-648634/1-A
Matrix: Water
Analysis Batch: 651869

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 648634

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.17	pg/L		01/23/23 05:37	02/05/23 19:46	1
2,3,7,8-TCDF	ND		10	0.035	pg/L		01/23/23 05:37	02/05/23 19:46	1
1,2,3,7,8-PeCDD	ND		50	0.085	pg/L		01/23/23 05:37	02/05/23 19:46	1
1,2,3,7,8-PeCDF	ND		50	0.053	pg/L		01/23/23 05:37	02/05/23 19:46	1
2,3,4,7,8-PeCDF	ND		50	0.063	pg/L		01/23/23 05:37	02/05/23 19:46	1
1,2,3,4,7,8-HxCDD	2.653	J q	50	0.069	pg/L		01/23/23 05:37	02/05/23 19:46	1
1,2,3,6,7,8-HxCDD	2.023	J	50	0.072	pg/L		01/23/23 05:37	02/05/23 19:46	1
1,2,3,7,8,9-HxCDD	1.992	J	50	0.064	pg/L		01/23/23 05:37	02/05/23 19:46	1
1,2,3,4,7,8-HxCDF	1.058	J	50	0.061	pg/L		01/23/23 05:37	02/05/23 19:46	1
1,2,3,6,7,8-HxCDF	0.8304	J q	50	0.062	pg/L		01/23/23 05:37	02/05/23 19:46	1
2,3,4,6,7,8-HxCDF	ND		50	0.054	pg/L		01/23/23 05:37	02/05/23 19:46	1
1,2,3,7,8,9-HxCDF	1.060	J q	50	0.058	pg/L		01/23/23 05:37	02/05/23 19:46	1
1,2,3,4,6,7,8-HpCDD	2.204	J q	50	0.019	pg/L		01/23/23 05:37	02/05/23 19:46	1
1,2,3,4,6,7,8-HpCDF	1.814	J q	50	0.066	pg/L		01/23/23 05:37	02/05/23 19:46	1
1,2,3,4,7,8,9-HpCDF	1.801	J q	50	0.067	pg/L		01/23/23 05:37	02/05/23 19:46	1
OCDD	12.66	J	100	0.034	pg/L		01/23/23 05:37	02/05/23 19:46	1
OCDF	3.779	J	100	0.18	pg/L		01/23/23 05:37	02/05/23 19:46	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*83*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-2,3,7,8-TCDF	*83*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-1,2,3,7,8-PeCDD	*78*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-1,2,3,7,8-PeCDF	*86*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-1,2,3,6,7,8-HxCDD	*76*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-2,3,4,7,8-PeCDF	*79*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-1,2,3,4,7,8-HxCDF	*80*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*85*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*79*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-1,2,3,6,7,8-HxCDF	*78*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-OCDD	*84*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-1,2,3,7,8,9-HxCDF	*81*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-2,3,4,6,7,8-HxCDF	*83*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*87*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*
13C-OCDF	*82*		*40 - 135*	*01/23/23 05:37*	*02/05/23 19:46*	*1*

Lab Sample ID: LCS 320-648634/2-A
Matrix: Water
Analysis Batch: 651869

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 648634

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	200	189.2		pg/L		95	72 - 128
2,3,7,8-TCDF	200	186.4		pg/L		93	67 - 135
1,2,3,7,8-PeCDD	1000	901.1		pg/L		90	71 - 135
1,2,3,7,8-PeCDF	1000	919.6		pg/L		92	70 - 133
2,3,4,7,8-PeCDF	1000	917.0		pg/L		92	69 - 135
1,2,3,4,7,8-HxCDD	1000	896.2		pg/L		90	67 - 130
1,2,3,6,7,8-HxCDD	1000	899.0		pg/L		90	61 - 144
1,2,3,7,8,9-HxCDD	1000	907.5		pg/L		91	61 - 140

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-648634/2-A
Matrix: Water
Analysis Batch: 651869

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 648634

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3,4,7,8-HxCDF			1000	910.2		pg/L		91	69 - 140		
1,2,3,6,7,8-HxCDF			1000	903.0		pg/L		90	62 - 155		
2,3,4,6,7,8-HxCDF			1000	896.3		pg/L		90	70 - 146		
1,2,3,7,8,9-HxCDF			1000	889.5		pg/L		89	71 - 142		
1,2,3,4,6,7,8-HpCDD			1000	887.2		pg/L		89	71 - 134		
1,2,3,4,6,7,8-HpCDF			1000	914.8		pg/L		91	68 - 137		
1,2,3,4,7,8,9-HpCDF			1000	881.2		pg/L		88	74 - 134		
OCDD			2000	1735		pg/L		87	72 - 134		
OCDF			2000	1809		pg/L		90	65 - 143		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*81*		*40 - 135*
13C-2,3,7,8-TCDF	*87*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*98*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*86*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*80*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*89*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*80*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*83*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*84*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*80*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*80*		*40 - 135*
13C-OCDD	*89*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*83*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*84*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*88*		*40 - 135*
13C-OCDF	*87*		*40 - 135*

Lab Sample ID: LCSD 320-648634/3-A
Matrix: Water
Analysis Batch: 651869

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 648634

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			200	194.0		pg/L		97	72 - 128	3	20
2,3,7,8-TCDF			200	201.6		pg/L		101	67 - 135	8	20
1,2,3,7,8-PeCDD			1000	915.8		pg/L		92	71 - 135	2	20
1,2,3,7,8-PeCDF			1000	961.2		pg/L		96	70 - 133	4	20
2,3,4,7,8-PeCDF			1000	985.3		pg/L		99	69 - 135	7	20
1,2,3,4,7,8-HxCDD			1000	913.0		pg/L		91	67 - 130	2	20
1,2,3,6,7,8-HxCDD			1000	976.5		pg/L		98	61 - 144	8	20
1,2,3,7,8,9-HxCDD			1000	1072		pg/L		107	61 - 140	17	20
1,2,3,4,7,8-HxCDF			1000	925.1		pg/L		93	69 - 140	2	20
1,2,3,6,7,8-HxCDF			1000	937.3		pg/L		94	62 - 155	4	20
2,3,4,6,7,8-HxCDF			1000	936.7		pg/L		94	70 - 146	4	20
1,2,3,7,8,9-HxCDF			1000	913.1		pg/L		91	71 - 142	3	20
1,2,3,4,6,7,8-HpCDD			1000	900.3		pg/L		90	71 - 134	1	20
1,2,3,4,6,7,8-HpCDF			1000	930.1		pg/L		93	68 - 137	2	20
1,2,3,4,7,8,9-HpCDF			1000	933.3		pg/L		93	74 - 134	6	20
OCDD			2000	1826		pg/L		91	72 - 134	5	20

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-648634/3-A
Matrix: Water
Analysis Batch: 651869

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 648634

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
OCDF			2000	1916		pg/L		96	65 - 143	6	20

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*82*		*40 - 135*
13C-2,3,7,8-TCDF	*80*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*85*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*79*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*73*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*70*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*73*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*81*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*85*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*77*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*80*		*40 - 135*
13C-OCDD	*84*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*86*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*86*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*83*		*40 - 135*
13C-OCDF	*82*		*40 - 135*

Lab Sample ID: MB 320-648859/1-A
Matrix: Water
Analysis Batch: 652363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 648859

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.16	pg/L		01/24/23 06:24	02/07/23 15:49	1
2,3,7,8-TCDF	0.7002	J	10	0.0078	pg/L		01/24/23 06:24	02/07/23 15:49	1
1,2,3,7,8-PeCDD	ND		50	0.056	pg/L		01/24/23 06:24	02/07/23 15:49	1
1,2,3,7,8-PeCDF	ND		50	0.041	pg/L		01/24/23 06:24	02/07/23 15:49	1
2,3,4,7,8-PeCDF	ND		50	0.050	pg/L		01/24/23 06:24	02/07/23 15:49	1
1,2,3,4,7,8-HxCDD	2.520	J	50	0.060	pg/L		01/24/23 06:24	02/07/23 15:49	1
1,2,3,6,7,8-HxCDD	1.410	J	50	0.057	pg/L		01/24/23 06:24	02/07/23 15:49	1
1,2,3,7,8,9-HxCDD	1.854	J	50	0.053	pg/L		01/24/23 06:24	02/07/23 15:49	1
1,2,3,4,7,8-HxCDF	0.5844	J q	50	0.055	pg/L		01/24/23 06:24	02/07/23 15:49	1
1,2,3,6,7,8-HxCDF	0.5536	J q	50	0.053	pg/L		01/24/23 06:24	02/07/23 15:49	1
2,3,4,6,7,8-HxCDF	1.011	J q	50	0.041	pg/L		01/24/23 06:24	02/07/23 15:49	1
1,2,3,7,8,9-HxCDF	1.580	J	50	0.050	pg/L		01/24/23 06:24	02/07/23 15:49	1
1,2,3,4,6,7,8-HpCDD	2.555	J	50	0.050	pg/L		01/24/23 06:24	02/07/23 15:49	1
1,2,3,4,6,7,8-HpCDF	2.029	J	50	0.053	pg/L		01/24/23 06:24	02/07/23 15:49	1
1,2,3,4,7,8,9-HpCDF	1.880	J	50	0.052	pg/L		01/24/23 06:24	02/07/23 15:49	1
OCDD	7.272	J	100	0.038	pg/L		01/24/23 06:24	02/07/23 15:49	1
OCDF	3.334	J q	100	0.094	pg/L		01/24/23 06:24	02/07/23 15:49	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*77*		*40 - 135*	*01/24/23 06:24*	*02/07/23 15:49*	*1*
13C-2,3,7,8-TCDF	*67*		*40 - 135*	*01/24/23 06:24*	*02/07/23 15:49*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*40 - 135*	*01/24/23 06:24*	*02/07/23 15:49*	*1*
13C-1,2,3,7,8-PeCDF	*73*		*40 - 135*	*01/24/23 06:24*	*02/07/23 15:49*	*1*
13C-1,2,3,6,7,8-HxCDD	*73*		*40 - 135*	*01/24/23 06:24*	*02/07/23 15:49*	*1*

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-648859/1-A
Matrix: Water
Analysis Batch: 652363

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 648859

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	67		40 - 135	01/24/23 06:24	02/07/23 15:49	1
13C-1,2,3,4,7,8-HxCDD	71		40 - 135	01/24/23 06:24	02/07/23 15:49	1
13C-1,2,3,4,7,8-HxCDF	56		40 - 135	01/24/23 06:24	02/07/23 15:49	1
13C-1,2,3,4,6,7,8-HpCDD	78		40 - 135	01/24/23 06:24	02/07/23 15:49	1
13C-1,2,3,4,6,7,8-HpCDF	58		40 - 135	01/24/23 06:24	02/07/23 15:49	1
13C-1,2,3,6,7,8-HxCDF	56		40 - 135	01/24/23 06:24	02/07/23 15:49	1
13C-OCDD	69		40 - 135	01/24/23 06:24	02/07/23 15:49	1
13C-1,2,3,7,8,9-HxCDF	60		40 - 135	01/24/23 06:24	02/07/23 15:49	1
13C-2,3,4,6,7,8-HxCDF	68		40 - 135	01/24/23 06:24	02/07/23 15:49	1
13C-1,2,3,4,7,8,9-HpCDF	65		40 - 135	01/24/23 06:24	02/07/23 15:49	1
13C-OCDF	73		40 - 135	01/24/23 06:24	02/07/23 15:49	1

Lab Sample ID: LCS 320-648859/2-A
Matrix: Water
Analysis Batch: 652363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 648859

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	200	164.1		pg/L		82	72 - 128
2,3,7,8-TCDF	200	168.3		pg/L		84	67 - 135
1,2,3,7,8-PeCDD	1000	875.7		pg/L		88	71 - 135
1,2,3,7,8-PeCDF	1000	847.5		pg/L		85	70 - 133
2,3,4,7,8-PeCDF	1000	807.0		pg/L		81	69 - 135
1,2,3,4,7,8-HxCDD	1000	820.4		pg/L		82	67 - 130
1,2,3,6,7,8-HxCDD	1000	845.1		pg/L		85	61 - 144
1,2,3,7,8,9-HxCDD	1000	980.8		pg/L		98	61 - 140
1,2,3,4,7,8-HxCDF	1000	831.8		pg/L		83	69 - 140
1,2,3,6,7,8-HxCDF	1000	849.8		pg/L		85	62 - 155
2,3,4,6,7,8-HxCDF	1000	816.9		pg/L		82	70 - 146
1,2,3,7,8,9-HxCDF	1000	828.1		pg/L		83	71 - 142
1,2,3,4,6,7,8-HpCDD	1000	828.3		pg/L		83	71 - 134
1,2,3,4,6,7,8-HpCDF	1000	860.2		pg/L		86	68 - 137
1,2,3,4,7,8,9-HpCDF	1000	859.6		pg/L		86	74 - 134
OCDD	2000	1628		pg/L		81	72 - 134
OCDF	2000	1689		pg/L		84	65 - 143

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	87		40 - 135
13C-2,3,7,8-TCDF	68		40 - 135
13C-1,2,3,7,8-PeCDD	98		40 - 135
13C-1,2,3,7,8-PeCDF	80		40 - 135
13C-1,2,3,6,7,8-HxCDD	76		40 - 135
13C-2,3,4,7,8-PeCDF	75		40 - 135
13C-1,2,3,4,7,8-HxCDD	72		40 - 135
13C-1,2,3,4,7,8-HxCDF	58		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	93		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	68		40 - 135
13C-1,2,3,6,7,8-HxCDF	59		40 - 135
13C-OCDD	88		40 - 135
13C-1,2,3,7,8,9-HxCDF	71		40 - 135

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-648859/2-A
Matrix: Water
Analysis Batch: 652363

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 648859

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,4,6,7,8-HxCDF	*73*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*40 - 135*
13C-OCDF	*95*		*40 - 135*

Lab Sample ID: LCSD 320-648859/3-A
Matrix: Water
Analysis Batch: 652363

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 648859

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			200	169.1		pg/L		85	72 - 128	3	20
2,3,7,8-TCDF			200	167.3		pg/L		84	67 - 135	1	20
1,2,3,7,8-PeCDD			1000	923.7		pg/L		92	71 - 135	5	20
1,2,3,7,8-PeCDF			1000	856.8		pg/L		86	70 - 133	1	20
2,3,4,7,8-PeCDF			1000	835.7		pg/L		84	69 - 135	3	20
1,2,3,4,7,8-HxCDD			1000	835.1		pg/L		84	67 - 130	2	20
1,2,3,6,7,8-HxCDD			1000	852.0		pg/L		85	61 - 144	1	20
1,2,3,7,8,9-HxCDD			1000	910.7		pg/L		91	61 - 140	7	20
1,2,3,4,7,8-HxCDF			1000	865.1		pg/L		87	69 - 140	4	20
1,2,3,6,7,8-HxCDF			1000	851.6		pg/L		85	62 - 155	0	20
2,3,4,6,7,8-HxCDF			1000	838.6		pg/L		84	70 - 146	3	20
1,2,3,7,8,9-HxCDF			1000	839.0		pg/L		84	71 - 142	1	20
1,2,3,4,6,7,8-HpCDD			1000	837.6		pg/L		84	71 - 134	1	20
1,2,3,4,6,7,8-HpCDF			1000	864.8		pg/L		86	68 - 137	1	20
1,2,3,4,7,8,9-HpCDF			1000	842.4		pg/L		84	74 - 134	2	20
OCDD			2000	1721		pg/L		86	72 - 134	6	20
OCDF			2000	1754		pg/L		88	65 - 143	4	20

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*86*		*40 - 135*
13C-2,3,7,8-TCDF	*70*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*98*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*82*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*82*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*79*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*78*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*62*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*91*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*68*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*64*		*40 - 135*
13C-OCDD	*83*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*67*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*73*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*74*		*40 - 135*
13C-OCDF	*91*		*40 - 135*

Specialty Organics

Prep Batch: 648634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Total/NA	Water	8290	
570-122824-2	A2BMP0007S022	Total/NA	Water	8290	
570-122824-3	A2BMP0012S012	Total/NA	Water	8290	
570-122824-4	EVBMP0007S014	Total/NA	Water	8290	
MB 320-648634/1-A	Method Blank	Total/NA	Water	8290	
LCS 320-648634/2-A	Lab Control Sample	Total/NA	Water	8290	
LCSD 320-648634/3-A	Lab Control Sample Dup	Total/NA	Water	8290	

Prep Batch: 648859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-5	EVBMP0008S017	Total/NA	Water	8290	
570-122824-6	EVBMP0009S015	Total/NA	Water	8290	
MB 320-648859/1-A	Method Blank	Total/NA	Water	8290	
LCS 320-648859/2-A	Lab Control Sample	Total/NA	Water	8290	
LCSD 320-648859/3-A	Lab Control Sample Dup	Total/NA	Water	8290	

Analysis Batch: 651869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Total/NA	Water	8290	648634
570-122824-2	A2BMP0007S022	Total/NA	Water	8290	648634
570-122824-3	A2BMP0012S012	Total/NA	Water	8290	648634
570-122824-4	EVBMP0007S014	Total/NA	Water	8290	648634
MB 320-648634/1-A	Method Blank	Total/NA	Water	8290	648634
LCS 320-648634/2-A	Lab Control Sample	Total/NA	Water	8290	648634
LCSD 320-648634/3-A	Lab Control Sample Dup	Total/NA	Water	8290	648634

Analysis Batch: 652363

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-5	EVBMP0008S017	Total/NA	Water	8290	648859
570-122824-6	EVBMP0009S015	Total/NA	Water	8290	648859
MB 320-648859/1-A	Method Blank	Total/NA	Water	8290	648859
LCS 320-648859/2-A	Lab Control Sample	Total/NA	Water	8290	648859
LCSD 320-648859/3-A	Lab Control Sample Dup	Total/NA	Water	8290	648859

Geotechnical

Analysis Batch: 301048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-122824-1	A2BMP0006S014	Total/NA	Water	D4464	
570-122824-2	A2BMP0007S022	Total/NA	Water	D4464	
570-122824-3	A2BMP0012S012	Total/NA	Water	D4464	
570-122824-4	EVBMP0007S014	Total/NA	Water	D4464	
570-122824-5	EVBMP0008S017	Total/NA	Water	D4464	
570-122824-6	EVBMP0009S015	Total/NA	Water	D4464	
LCS 570-301048/16	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-301048/18	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-2

Client Sample ID: A2BMP0006S014

Lab Sample ID: 570-122824-1

Date Collected: 01/05/23 07:30
Matrix: Water
Date Received: 01/05/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1040.4 mL	20.0 uL	648634	01/23/23 05:37	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	651869	02/06/23 00:34	GRB	EET SAC
	Instrument ID: DFS 1									
Total/NA	Analysis	D4464		1			301048	02/02/23 17:58	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: A2BMP0007S022

Lab Sample ID: 570-122824-2

Date Collected: 01/05/23 12:12
Matrix: Water
Date Received: 01/05/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1017.8 mL	20.0 uL	648634	01/23/23 05:37	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	651869	02/06/23 01:22	GRB	EET SAC
	Instrument ID: DFS 1									
Total/NA	Analysis	D4464		1			301048	02/02/23 17:59	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: A2BMP0012S012

Lab Sample ID: 570-122824-3

Date Collected: 01/05/23 11:20
Matrix: Water
Date Received: 01/05/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1018.4 mL	20.0 uL	648634	01/23/23 05:37	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	651869	02/06/23 02:11	GRB	EET SAC
	Instrument ID: DFS 1									
Total/NA	Analysis	D4464		1			301048	02/02/23 18:05	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0007S014

Lab Sample ID: 570-122824-4

Date Collected: 01/05/23 07:02
Matrix: Water
Date Received: 01/05/23 16:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			995.6 mL	20.0 uL	648634	01/23/23 05:37	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	651869	02/06/23 02:59	GRB	EET SAC
	Instrument ID: DFS 1									
Total/NA	Analysis	D4464		1			301048	02/02/23 18:12	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-2

Client Sample ID: EVBMP0008S017

Date Collected: 01/05/23 07:20
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			974 mL	20.0 uL	648859	01/24/23 06:24	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	652363	02/07/23 21:26	KSS	EET SAC
	Instrument ID: DFS 1									
Total/NA	Analysis	D4464		1			301048	02/02/23 18:25	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0009S015

Date Collected: 01/05/23 07:07
Date Received: 01/05/23 16:00

Lab Sample ID: 570-122824-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			987.1 mL	20.0 uL	648859	01/24/23 06:24	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	652363	02/07/23 22:14	KSS	EET SAC
	Instrument ID: DFS 1									
Total/NA	Analysis	D4464		1			301048	02/02/23 18:31	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc.
Job ID: 570-122824-2
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
D4464		Water	Clay (less than 0.00391 mm)
D4464		Water	Coarse Sand (0.5mm to 1mm)
D4464		Water	Fine Sand (0.125 to 0.25mm)
D4464		Water	Gravel (greater than 2 mm)
D4464		Water	Medium Sand (0.25 to 0.5 mm)
D4464		Water	Silt (0.00391 to 0.0625mm)
D4464		Water	Total Silt and Clay (0 to 0.0626mm)
D4464		Water	Very Coarse Sand (1 to 2mm)
D4464		Water	Very Fine Sand (0.0625 to 0.125 mm)

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2897	01-22-24

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-2

Method	Method Description	Protocol	Laboratory
8290	Dioxins and Furans (HRGC/HRMS)	SW846	EET SAC
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
8290	Separatory Funnel (Liquid-Liquid) Extraction of Dioxins and Furans	SW846	EET SAC

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-122824-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-122824-1	A2BMP0006S014	Water	01/05/23 07:30	01/05/23 16:00
570-122824-2	A2BMP0007S022	Water	01/05/23 12:12	01/05/23 16:00
570-122824-3	A2BMP0012S012	Water	01/05/23 11:20	01/05/23 16:00
570-122824-4	EVBMP0007S014	Water	01/05/23 07:02	01/05/23 16:00
570-122824-5	EVBMP0008S017	Water	01/05/23 07:20	01/05/23 16:00
570-122824-6	EVBMP0009S015	Water	01/05/23 07:07	01/05/23 16:00

122824

Chain of Custody Record

COC Number: CALS01052301

JACOBS

1/5/2023 8 34 59 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

570-122824 Chain of Custody

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B
A2BMP0006S014	05-Jan-23 7 30	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4'C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb, Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
A2BMP0007S022	04-Jan-23 12 12	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN DENSON	1/5/23 1000
Relinquished by	BRYAN DENSON	1/5/23 1000
Received by		1.5.23/1000
Relinquished by		1-5-23 /1300
Received by	EC	1/5/23 1300
Relinquished by	EC	1/5/23 1600

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

1.6/1.6 1.2/1.2 SCII

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

Chain of Custody Record

COC Number: CALS01052301

JACOBS

1/5/2023 8 34 59 AM

Project Name SSFL
Project CJ042 Stormwater PO 148015891
Location Santa Susana Field Lab
Project Number D3377900
Task Order 42
PO Number 148015891
Turnaround Time 10 Days

Project Manager Randy Dean
Sample Manager

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B
A2BMP0012S012	04-Jan-23 11 20	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4 C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
EVBMP0007S014	05-Jan-23 7 02	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu, Pb Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN BENSON	1/5/23 1000
Relinquished by	BRYAN BENSON	1/5/23 1000
Received by		1.5.23/100
Relinquished by		1-5-23/1300
Received by	EC	1/5/23 1306
Relinquished by	EC	1/5/23 1600

Shipping Details
Shipment Method: FedEx
Airbill No:
Lab Name: Eurofins/Calscience
Lab Phone: (714) 895-5494
On Ice: ***yes / no*** ***Cooler Temp*** _____

ATTN:
Sample Custody
and
Lori Thompson

Special Instructions:
See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

Chain of Custody Record

COC Number: CALS01052301

JACOBS

1/5/2023 8 34.59 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PQ 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0008S017	05-Jan-23 7 20	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4 C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu, Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		**6**						
EVBMP0009S015	05-Jan-23 7 07	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4 C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		**6**						

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	BRYAN DENSON	1/5/23 1000
Relinquished by	BRYAN DENSON	1/5/23 1000
Received by		1.5.23/1000
Relinquished by		1.5 23/1320
Received by	EC	1/5/23 1300
Relinquished by	EC	1/5/23 1600

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-203356.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-122824-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 1/25/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
A2BMP0006S014 (570-122824-1)	1/5/23	07:30 Pacific		Water			X	2	
A2BMP0007S022 (570-122824-2)	1/5/23	12:12 Pacific		Water			X	2	
A2BMP0012S012 (570-122824-3)	1/5/23	11:20 Pacific		Water			X	2	
EVBMP0007S014 (570-122824-4)	1/5/23	07:02 Pacific		Water			X	2	
EVBMP0008S017 (570-122824-5)	1/5/23	07:20 Pacific		Water			X	2	
EVBMP0009S015 (570-122824-6)	1/5/23	07:07 Pacific		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	01/06/23 12:42	EC	[signature]	1/7/23 - 905	EETSAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc. Job Number: 570-122824-2

Login Number: 122824 **List Source: Eurofins Calscience**
List Number: 1
Creator: Patel, Jayesh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-122824-2

Login Number: 122824
List Number: 2
Creator: Guzman, Juan

List Source: Eurofins Sacramento
List Creation: 01/07/23 11:24 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal present with no number.
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9 & 3.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

Generated 1/18/2023 5:37:43 PM

JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-123377-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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1/18/2023 5:37:43 PM

Authorized for release by
Lori Thompson, Project Manager I
Lori.Thompson@et.eurofinsus.com
(657)212-3035

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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-1

Qualifiers

Metals

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123377-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-123377-1

Comments
No additional comments.

Receipt
The samples were received on 1/10/2023 6:00 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7º C, 1.9º C and 2.2º C.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: A2BMP0006S015 (570-123377-1), A2BMP0007S023 (570-123377-2), EVBMP0007S015 (570-123377-3), EVBMP0008S018 (570-123377-4) and EVBMP0009S016 (570-123377-5). The samples were filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-1

Client Sample ID: A2BMP0006S015 — Lab Sample ID: 570-123377-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	4.21		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.907	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	4.88	H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.286	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Total Suspended Solids	2.30		1.00	0.829	mg/L	1		SM 2540D	Total/NA

Client Sample ID: A2BMP0007S023 — Lab Sample ID: 570-123377-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2.07		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.548	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.50	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.184	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Total Suspended Solids	3.10		1.00	0.829	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0007S015 — Lab Sample ID: 570-123377-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	4.01		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	1.47		1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.96	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Total Suspended Solids	80.0		2.00	1.66	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0008S018 — Lab Sample ID: 570-123377-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2.22		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.631	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.45	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Turbidity	20		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	13.7		1.00	0.829	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0009S016 — Lab Sample ID: 570-123377-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2.82		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.457	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.35	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.144	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Turbidity	1.8		0.05	0.05	NTU	1		SM 2130B	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: A2BMP0006S015
Date Collected: 01/09/23 09:33
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/13/23 09:29	01/13/23 16:53	1
Copper	**4.21**		2.00	0.318	ug/L		01/13/23 09:29	01/13/23 16:53	1
Lead	**0.907**	**J**	1.00	0.118	ug/L		01/13/23 09:29	01/13/23 16:53	1

Client Sample ID: A2BMP0007S023
Date Collected: 01/09/23 09:43
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/13/23 09:29	01/13/23 17:01	1
Copper	**2.07**		2.00	0.318	ug/L		01/13/23 09:29	01/13/23 17:01	1
Lead	**0.548**	**J**	1.00	0.118	ug/L		01/13/23 09:29	01/13/23 17:01	1

Client Sample ID: EVBMP0007S015
Date Collected: 01/09/23 09:00
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/13/23 09:29	01/13/23 17:03	1
Copper	**4.01**		2.00	0.318	ug/L		01/13/23 09:29	01/13/23 17:03	1
Lead	**1.47**		1.00	0.118	ug/L		01/13/23 09:29	01/13/23 17:03	1

Client Sample ID: EVBMP0008S018
Date Collected: 01/09/23 09:16
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/13/23 09:29	01/13/23 17:06	1
Copper	**2.22**		2.00	0.318	ug/L		01/13/23 09:29	01/13/23 17:06	1
Lead	**0.631**	**J**	1.00	0.118	ug/L		01/13/23 09:29	01/13/23 17:06	1

Client Sample ID: EVBMP0009S016
Date Collected: 01/09/23 09:10
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/13/23 09:29	01/13/23 17:08	1
Copper	**2.82**		2.00	0.318	ug/L		01/13/23 09:29	01/13/23 17:08	1
Lead	**0.457**	**J**	1.00	0.118	ug/L		01/13/23 09:29	01/13/23 17:08	1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: A2BMP0006S015
Lab Sample ID: 570-123377-1
Date Collected: 01/09/23 09:33
Matrix: Water
Date Received: 01/10/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/13/23 12:47	1
Copper	**4.88**	**H**	2.00	0.318	ug/L			01/13/23 12:47	1
Lead	**0.286**	**J H**	1.00	0.118	ug/L			01/13/23 12:47	1

Client Sample ID: A2BMP0007S023
Lab Sample ID: 570-123377-2
Date Collected: 01/09/23 09:43
Matrix: Water
Date Received: 01/10/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/13/23 12:50	1
Copper	**1.50**	**J H**	2.00	0.318	ug/L			01/13/23 12:50	1
Lead	**0.184**	**J H**	1.00	0.118	ug/L			01/13/23 12:50	1

Client Sample ID: EVBMP0007S015
Lab Sample ID: 570-123377-3
Date Collected: 01/09/23 09:00
Matrix: Water
Date Received: 01/10/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/13/23 12:52	1
Copper	**1.96**	**J H**	2.00	0.318	ug/L			01/13/23 12:52	1
Lead	ND	H	1.00	0.118	ug/L			01/13/23 12:52	1

Client Sample ID: EVBMP0008S018
Lab Sample ID: 570-123377-4
Date Collected: 01/09/23 09:16
Matrix: Water
Date Received: 01/10/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/13/23 12:54	1
Copper	**1.45**	**J H**	2.00	0.318	ug/L			01/13/23 12:54	1
Lead	ND	H	1.00	0.118	ug/L			01/13/23 12:54	1

Client Sample ID: EVBMP0009S016
Lab Sample ID: 570-123377-5
Date Collected: 01/09/23 09:10
Matrix: Water
Date Received: 01/10/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/13/23 12:57	1
Copper	**1.35**	**J H**	2.00	0.318	ug/L			01/13/23 12:57	1
Lead	**0.144**	**J H**	1.00	0.118	ug/L			01/13/23 12:57	1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: A2BMP0006S015
Date Collected: 01/09/23 09:33
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/13/23 16:10	01/16/23 19:13	1

Client Sample ID: A2BMP0007S023
Date Collected: 01/09/23 09:43
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/13/23 16:10	01/16/23 19:15	1

Client Sample ID: EVBMP0007S015
Date Collected: 01/09/23 09:00
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/13/23 16:10	01/16/23 19:17	1

Client Sample ID: EVBMP0008S018
Date Collected: 01/09/23 09:16
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/13/23 16:10	01/16/23 19:19	1

Client Sample ID: EVBMP0009S016
Date Collected: 01/09/23 09:10
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/13/23 16:10	01/16/23 19:25	1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: A2BMP0006S015
Date Collected: 01/09/23 09:33
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		01/11/23 18:15	01/16/23 17:35	1

Client Sample ID: A2BMP0007S023
Date Collected: 01/09/23 09:43
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		01/11/23 18:15	01/16/23 17:41	1

Client Sample ID: EVBMP0007S015
Date Collected: 01/09/23 09:00
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		01/11/23 18:15	01/16/23 17:43	1

Client Sample ID: EVBMP0008S018
Date Collected: 01/09/23 09:16
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		01/11/23 18:15	01/16/23 17:44	1

Client Sample ID: EVBMP0009S016
Date Collected: 01/09/23 09:10
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		01/11/23 18:15	01/16/23 17:46	1

General Chemistry

Client Sample ID: A2BMP0006S015
Date Collected: 01/09/23 09:33
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	2.30		1.00	0.829	mg/L			01/11/23 19:12	1

Client Sample ID: A2BMP0007S023
Date Collected: 01/09/23 09:43
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	3.10		1.00	0.829	mg/L			01/11/23 19:12	1

Client Sample ID: EVBMP0007S015
Date Collected: 01/09/23 09:00
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	80.0		2.00	1.66	mg/L			01/11/23 19:12	1

Client Sample ID: EVBMP0008S018
Date Collected: 01/09/23 09:16
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	20		0.05	0.05	NTU			01/10/23 21:38	1
Total Suspended Solids (SM 2540D)	13.7		1.00	0.829	mg/L			01/11/23 19:12	1

Client Sample ID: EVBMP0009S016
Date Collected: 01/09/23 09:10
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-5
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	1.8		0.05	0.05	NTU			01/10/23 21:42	1
Total Suspended Solids (SM 2540D)	ND		1.00	0.829	mg/L			01/11/23 19:12	1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-295654/1-A
Matrix: Water
Analysis Batch: 296070

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 295654

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/13/23 09:29	01/16/23 09:22	1
Copper	ND		2.00	0.318	ug/L		01/13/23 09:29	01/16/23 09:22	1
Lead	ND		1.00	0.118	ug/L		01/13/23 09:29	01/16/23 09:22	1

Lab Sample ID: LCS 570-295654/2-A
Matrix: Water
Analysis Batch: 295990

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 295654

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	100	100.6		ug/L		101	85 - 115
Copper	100	99.18		ug/L		99	85 - 115
Lead	100	101.3		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-295654/3-A
Matrix: Water
Analysis Batch: 295990

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 295654

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	100	102.0		ug/L		102	85 - 115	1	20
Copper	100	100.3		ug/L		100	85 - 115	1	20
Lead	100	103.8		ug/L		104	85 - 115	2	20

Lab Sample ID: MB 570-295397/1-A
Matrix: Water
Analysis Batch: 295771

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L			01/13/23 12:16	1
Copper	ND		2.00	0.318	ug/L			01/13/23 12:16	1
Lead	ND		1.00	0.118	ug/L			01/13/23 12:16	1

Lab Sample ID: LCS 570-295397/2-A
Matrix: Water
Analysis Batch: 295771

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	40.0	39.08		ug/L		98	85 - 115
Copper	40.0	38.22		ug/L		96	85 - 115
Lead	40.0	38.79		ug/L		97	85 - 115

Lab Sample ID: LCSD 570-295397/3-A
Matrix: Water
Analysis Batch: 295771

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	40.0	39.33		ug/L		98	85 - 115	1	20
Copper	40.0	37.76		ug/L		94	85 - 115	1	20
Lead	40.0	37.80		ug/L		95	85 - 115	3	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-295795/1-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 295795

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/13/23 16:10	01/16/23 18:50	1

Lab Sample ID: LCS 570-295795/2-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.008514		mg/L		106	85 - 115

Lab Sample ID: LCSD 570-295795/3-A
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 295795

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.008651		mg/L		108	85 - 115	2	10

Lab Sample ID: MB 570-295217/1-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 295283

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/11/23 18:15	01/16/23 17:29	1

Lab Sample ID: LCS 570-295217/2-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 295283

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.008645		mg/L		108	85 - 115

Lab Sample ID: LCSD 570-295217/3-B
Matrix: Water
Analysis Batch: 296261

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 295283

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.008537		mg/L		107	85 - 115	1	10

Lab Sample ID: 570-123377-1 MS
Matrix: Water
Analysis Batch: 296261

Client Sample ID: A2BMP0006S015
Prep Type: Dissolved
Prep Batch: 295283

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND	H	0.00800	0.008084		mg/L		101	85 - 115

Lab Sample ID: 570-123377-1 MSD
Matrix: Water
Analysis Batch: 296261

Client Sample ID: A2BMP0006S015
Prep Type: Dissolved
Prep Batch: 295283

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	H	0.00800	0.008449		mg/L		106	85 - 115	4	10

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-294959/1
Matrix: Water
Analysis Batch: 294959

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		99.1	99.0 - 101.0

Lab Sample ID: LCSSRM 570-294959/2
Matrix: Water
Analysis Batch: 294959

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-294959/3
Matrix: Water
Analysis Batch: 294959

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-295245/1
Matrix: Water
Analysis Batch: 295245

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			01/11/23 19:11	1

Lab Sample ID: LCS 570-295245/2
Matrix: Water
Analysis Batch: 295245

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	77 - 116

Lab Sample ID: LCSD 570-295245/3
Matrix: Water
Analysis Batch: 295245

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	98.00		mg/L		98	77 - 116	1	10

Metals

Filtration Batch: 295217

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Dissolved	Water	Filtration	
570-123377-2	A2BMP0007S023	Dissolved	Water	Filtration	
570-123377-3	EVBMP0007S015	Dissolved	Water	Filtration	
570-123377-4	EVBMP0008S018	Dissolved	Water	Filtration	
570-123377-5	EVBMP0009S016	Dissolved	Water	Filtration	
MB 570-295217/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-295217/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295217/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-123377-1 MS	A2BMP0006S015	Dissolved	Water	Filtration	
570-123377-1 MSD	A2BMP0006S015	Dissolved	Water	Filtration	

Prep Batch: 295283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Dissolved	Water	245.1	295217
570-123377-2	A2BMP0007S023	Dissolved	Water	245.1	295217
570-123377-3	EVBMP0007S015	Dissolved	Water	245.1	295217
570-123377-4	EVBMP0008S018	Dissolved	Water	245.1	295217
570-123377-5	EVBMP0009S016	Dissolved	Water	245.1	295217
MB 570-295217/1-B	Method Blank	Dissolved	Water	245.1	295217
LCS 570-295217/2-B	Lab Control Sample	Dissolved	Water	245.1	295217
LCSD 570-295217/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	295217
570-123377-1 MS	A2BMP0006S015	Dissolved	Water	245.1	295217
570-123377-1 MSD	A2BMP0006S015	Dissolved	Water	245.1	295217

Filtration Batch: 295397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Dissolved	Water	Filtration	
570-123377-2	A2BMP0007S023	Dissolved	Water	Filtration	
570-123377-3	EVBMP0007S015	Dissolved	Water	Filtration	
570-123377-4	EVBMP0008S018	Dissolved	Water	Filtration	
570-123377-5	EVBMP0009S016	Dissolved	Water	Filtration	
MB 570-295397/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-295397/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-295397/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 295654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Total Recoverable	Water	200.8	
570-123377-2	A2BMP0007S023	Total Recoverable	Water	200.8	
570-123377-3	EVBMP0007S015	Total Recoverable	Water	200.8	
570-123377-4	EVBMP0008S018	Total Recoverable	Water	200.8	
570-123377-5	EVBMP0009S016	Total Recoverable	Water	200.8	
MB 570-295654/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-295654/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-295654/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Analysis Batch: 295771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Dissolved	Water	200.8	295397
570-123377-2	A2BMP0007S023	Dissolved	Water	200.8	295397
570-123377-3	EVBMP0007S015	Dissolved	Water	200.8	295397

Metals (Continued)

Analysis Batch: 295771 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-4	EVBMP0008S018	Dissolved	Water	200.8	295397
570-123377-5	EVBMP0009S016	Dissolved	Water	200.8	295397
MB 570-295397/1-A	Method Blank	Dissolved	Water	200.8	295397
LCS 570-295397/2-A	Lab Control Sample	Dissolved	Water	200.8	295397
LCSD 570-295397/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	295397

Prep Batch: 295795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Total/NA	Water	245.1	
570-123377-2	A2BMP0007S023	Total/NA	Water	245.1	
570-123377-3	EVBMP0007S015	Total/NA	Water	245.1	
570-123377-4	EVBMP0008S018	Total/NA	Water	245.1	
570-123377-5	EVBMP0009S016	Total/NA	Water	245.1	
MB 570-295795/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-295795/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-295795/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Analysis Batch: 295990

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Total Recoverable	Water	200.8	295654
570-123377-2	A2BMP0007S023	Total Recoverable	Water	200.8	295654
570-123377-3	EVBMP0007S015	Total Recoverable	Water	200.8	295654
570-123377-4	EVBMP0008S018	Total Recoverable	Water	200.8	295654
570-123377-5	EVBMP0009S016	Total Recoverable	Water	200.8	295654
LCS 570-295654/2-A	Lab Control Sample	Total Recoverable	Water	200.8	295654
LCSD 570-295654/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	295654

Analysis Batch: 296070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-295654/1-A	Method Blank	Total Recoverable	Water	200.8	295654

Analysis Batch: 296261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Dissolved	Water	245.1	295283
570-123377-1	A2BMP0006S015	Total/NA	Water	245.1	295795
570-123377-2	A2BMP0007S023	Dissolved	Water	245.1	295283
570-123377-2	A2BMP0007S023	Total/NA	Water	245.1	295795
570-123377-3	EVBMP0007S015	Dissolved	Water	245.1	295283
570-123377-3	EVBMP0007S015	Total/NA	Water	245.1	295795
570-123377-4	EVBMP0008S018	Dissolved	Water	245.1	295283
570-123377-4	EVBMP0008S018	Total/NA	Water	245.1	295795
570-123377-5	EVBMP0009S016	Dissolved	Water	245.1	295283
570-123377-5	EVBMP0009S016	Total/NA	Water	245.1	295795
MB 570-295217/1-B	Method Blank	Dissolved	Water	245.1	295283
MB 570-295795/1-A	Method Blank	Total/NA	Water	245.1	295795
LCS 570-295217/2-B	Lab Control Sample	Dissolved	Water	245.1	295283
LCS 570-295795/2-A	Lab Control Sample	Total/NA	Water	245.1	295795
LCSD 570-295217/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	295283
LCSD 570-295795/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	295795
570-123377-1 MS	A2BMP0006S015	Dissolved	Water	245.1	295283
570-123377-1 MSD	A2BMP0006S015	Dissolved	Water	245.1	295283

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-1

General Chemistry

Analysis Batch: 294959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-4	EVBMP0008S018	Total/NA	Water	SM 2130B	
570-123377-5	EVBMP0009S016	Total/NA	Water	SM 2130B	
LCSSRM 570-294959/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-294959/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-294959/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 295245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Total/NA	Water	SM 2540D	
570-123377-2	A2BMP0007S023	Total/NA	Water	SM 2540D	
570-123377-3	EVBMP0007S015	Total/NA	Water	SM 2540D	
570-123377-4	EVBMP0008S018	Total/NA	Water	SM 2540D	
570-123377-5	EVBMP0009S016	Total/NA	Water	SM 2540D	
MB 570-295245/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-295245/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-295245/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-1

Client Sample ID: A2BMP0006S015

Date Collected: 01/09/23 09:33
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295397	01/12/23 11:53	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295771	01/13/23 12:47	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	295654	01/13/23 09:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295990	01/13/23 16:53	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	50 mL	295217	01/11/23 17:44	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	295283	01/11/23 18:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			296261	01/16/23 17:35	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	295795	01/13/23 16:10	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			296261	01/16/23 19:13	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	295245	01/11/23 19:12	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: A2BMP0007S023

Date Collected: 01/09/23 09:43
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295397	01/12/23 11:53	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295771	01/13/23 12:50	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	295654	01/13/23 09:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295990	01/13/23 17:01	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	50 mL	295217	01/11/23 17:44	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	295283	01/11/23 18:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			296261	01/16/23 17:41	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	295795	01/13/23 16:10	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			296261	01/16/23 19:15	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	295245	01/11/23 19:12	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0007S015

Date Collected: 01/09/23 09:00
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295397	01/12/23 11:53	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295771	01/13/23 12:52	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-1

Client Sample ID: EVBMP0007S015

Date Collected: 01/09/23 09:00
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			50 mL	50 mL	295654	01/13/23 09:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295990	01/13/23 17:03	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	50 mL	295217	01/11/23 17:44	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	295283	01/11/23 18:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			296261	01/16/23 17:43	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	295795	01/13/23 16:10	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			296261	01/16/23 19:17	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	295245	01/11/23 19:12	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0008S018

Date Collected: 01/09/23 09:16
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295397	01/12/23 11:53	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295771	01/13/23 12:54	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	295654	01/13/23 09:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295990	01/13/23 17:06	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	50 mL	295217	01/11/23 17:44	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	295283	01/11/23 18:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			296261	01/16/23 17:44	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	295795	01/13/23 16:10	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			296261	01/16/23 19:19	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			294959	01/10/23 21:38	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	295245	01/11/23 19:12	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0009S016

Date Collected: 01/09/23 09:10
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	295397	01/12/23 11:53	W1BQ	EET CAL 4
Dissolved	Analysis	200.8		1			295771	01/13/23 12:57	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-1

Client Sample ID: EVBMP0009S016

Date Collected: 01/09/23 09:10
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Prep	200.8			50 mL	50 mL	295654	01/13/23 09:29	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			295990	01/13/23 17:08	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	50 mL	295217	01/11/23 17:44	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	295283	01/11/23 18:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			296261	01/16/23 17:46	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	295795	01/13/23 16:10	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			296261	01/16/23 19:25	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			294959	01/10/23 21:42	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	295245	01/11/23 19:12	UWCT	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc.
Job ID: 570-123377-1
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8		Water	Cadmium
200.8		Water	Copper
200.8		Water	Lead
200.8	200.8	Water	Cadmium
200.8	200.8	Water	Copper
200.8	200.8	Water	Lead
245.1	245.1	Water	Mercury
SM 2130B		Water	Turbidity

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-1

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123377-1	A2BMP0006S015	Water	01/09/23 09:33	01/10/23 18:00
570-123377-2	A2BMP0007S023	Water	01/09/23 09:43	01/10/23 18:00
570-123377-3	EVBMP0007S015	Water	01/09/23 09:00	01/10/23 18:00
570-123377-4	EVBMP0008S018	Water	01/09/23 09:16	01/10/23 18:00
570-123377-5	EVBMP0009S016	Water	01/09/23 09:10	01/10/23 18:00

123377

Chain of Custody Record

COC Number: CALS01092301

JACOBS

1/9/2023 10 42 38 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1E	ASTMD4464	SM2540	SW8290/1613B
A2BMP0006S015	09-Jan-23 9 33	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu, Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4 C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
A2BMP0007S023	09-Jan-23 9 43	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

570-123377 Chain of Custody

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	Bryan Benson	01/09/23
Relinquished by		01/10/23 0940
Received by		1/10/23 0940
Relinquished by		1/10/23 1515
Received by	EC	1/10/23 1515
Relinquished by:	EC	1/10/23 1755

1/10/23 1755

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

2.2/2.2 1.7/1.7 1.9/1.9 SCII

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

123377

Chain of Custody Record

COC Number: CALS01092301

JACOBS

1/9/2023 10 42 39 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0007S015	09-Jan-23 9 00	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu, Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
EVBMP0008S018	09-Jan-23 9 16	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4 C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu, Pb, Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers.		6						

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	Bryan Benson	01/09/23 15-00
Relinquished by		01/10/23 0940
Received by		1/10/23 0940
Relinquished by		1/10/23 1515
Received by	EC	1/10/23 1515
Relinquished by:	EC	1/10/23 1755
		1/10/23 1755

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

123377

Chain of Custody Record

COC Number: CALS01092301

JACOBS

1/9/2023 10 42 39 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B																		
EVBMP0009S016	09-Jan-23 9 10	N	Water																											
Dioxins-17 congeners				4°C	☐	2	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Turbidity TSS				4°C	☐	1	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4°C	☐	1	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Cd Cu Pb Hg				HNO3 4°C	☐	1	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
				Total Containers:		6																								

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	Brian Benson	01/09/23 15:00
Relinquished by		01/10/23 09:47
Received by		1/10/23 0940
Relinquished by		1/10/23 1515
Received by	EC	1/10/23 1515
Relinquished by	EC	1/10/23 1755
		1/10/23 755

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-123377-1

Login Number: 123377
List Number: 1
Creator: Thompson, Lori

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

Generated 2/15/2023 3:53:57 PM

JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-123377-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
2/15/2023 3:53:57 PM

Authorized for release by
Lori Thompson, Project Manager I
Lori.Thompson@et.eurofinsus.com
(657)212-3035

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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-123377-2

Laboratory: Eurofins Calscience

Narrative

CASE NARRATIVE

Client: Jacobs Engineering Group, Inc.

Project: NASA SSFL CJ042 Stormwater

Report Number: 570-123377-2

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 01/10/2023 at 6:00 PM; the samples arrived in good condition, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7°C, 1.9°C and 2.2°C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2 degrees Celsius of the required temperature or method specified range. For samples with a specified temperature of 4 degrees Celsius, samples with a temperature ranging from just above freezing temperature of water to 6 degrees Celsius shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

DIOXINS AND FURANS
Samples A2BMP0006S015 (570-123377-1), A2BMP0007S023 (570-123377-2), EVBMP0007S015 (570-123377-3), EVBMP0008S018 (570-123377-4) and EVBMP0009S016 (570-123377-5) were analyzed for Dioxins and Furans in accordance with EPA SW-846 Method 8290. The samples were prepared on 01/26/2023 and 01/27/2023 and analyzed on 02/13/2023.

Several analytes were detected in method blank MB 320-649403/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Several analytes were detected in method blank MB 320-649887/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PARTICLE SIZE
Samples A2BMP0006S015 (570-123377-1), A2BMP0007S023 (570-123377-2), EVBMP0007S015 (570-123377-3), EVBMP0008S018 (570-123377-4) and EVBMP0009S016 (570-123377-5) were analyzed for Particle Size in accordance with ASTM D 4464. The samples were analyzed on 02/02/2023.

Job ID: 570-123377-2 (Continued)

Laboratory: Eurofins Calscience (Continued)

The sample duplicate precision for the following sample associated with analytical batch 570-301048 was outside control limits: (570-123671-K-1 DU). The associated Laboratory Control Sample / Laboratory Control Sample Duplicate (LCS/LCSD) precision met acceptance criteria.
No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-2

Client Sample ID: A2BMP0006S015 — Lab Sample ID: 570-123377-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	0.98	J B	50	0.042	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	2.1	J B	50	0.053	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	0.87	J q B	50	0.051	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	0.28	J q B	50	0.054	pg/L	1		8290	Total/NA
OCDD	34	J B	100	0.096	pg/L	1		8290	Total/NA
OCDF	2.1	J q B	100	0.032	pg/L	1		8290	Total/NA

Client Sample ID: A2BMP0007S023 — Lab Sample ID: 570-123377-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	1.3	J q B	49	0.056	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	0.45	J q B	49	0.053	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	0.30	J q B	49	0.050	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	9.4	J B	49	0.073	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.4	J q B	49	0.048	pg/L	1		8290	Total/NA
OCDD	140	B	97	0.18	pg/L	1		8290	Total/NA
OCDF	4.5	J q B	97	0.032	pg/L	1		8290	Total/NA
Clay (less than 0.00391 mm)	10.85		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	89.15		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	100.00		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EVBMP0007S015 — Lab Sample ID: 570-123377-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	1.8	J q B	51	0.049	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	0.40	J q B	51	0.043	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	8.6	J B	51	0.083	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.9	J B	51	0.10	pg/L	1		8290	Total/NA
OCDD	80	J B	100	0.12	pg/L	1		8290	Total/NA
OCDF	7.6	J q B	100	0.12	pg/L	1		8290	Total/NA
Clay (less than 0.00391 mm)	2.23		0.01	0.01	%	1		D4464	Total/NA
Fine Sand (0.125 to 0.25mm)	9.46		0.01	0.01	%	1		D4464	Total/NA
Medium Sand (0.25 to 0.5 mm)	57.47		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	19.21		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	21.45		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	11.63		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EVBMP0008S018 — Lab Sample ID: 570-123377-4

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	1.7	J B	51	0.041	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	5.1	J B	51	0.075	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.2	J q B	51	0.053	pg/L	1		8290	Total/NA
OCDD	77	J B	100	0.13	pg/L	1		8290	Total/NA
OCDF	4.9	J B	100	0.060	pg/L	1		8290	Total/NA
Clay (less than 0.00391 mm)	38.62		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	62.38		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	100.00		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EVBMP0009S016 — Lab Sample ID: 570-123377-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	2.0	J q B	49	0.42	pg/L	1		8290	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EVBMP0009S016 (Continued)

Lab Sample ID: 570-123377-5

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,6,7,8-HxCDD	1.8	J q B	49	0.40	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	0.95	J q B	49	0.36	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDF	0.81	J B	49	0.38	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDF	0.58	J q B	49	0.34	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.80	J B	49	0.38	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	44	J B	49	1.3	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	8.3	J B	49	0.60	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	1.5	J B	49	0.70	pg/L	1		8290	Total/NA
OCDD	700	B	99	5.9	pg/L	1		8290	Total/NA
OCDF	51	J B	99	2.1	pg/L	1		8290	Total/NA

This Detection Summary does not include radiochemical test results.

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: A2BMP0006S015
Date Collected: 01/09/23 09:33
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.094	pg/L		01/26/23 06:40	02/13/23 01:26	1
2,3,7,8-TCDF	ND		10	0.011	pg/L		01/26/23 06:40	02/13/23 01:26	1
1,2,3,7,8-PeCDD	ND		50	0.064	pg/L		01/26/23 06:40	02/13/23 01:26	1
1,2,3,7,8-PeCDF	ND		50	0.022	pg/L		01/26/23 06:40	02/13/23 01:26	1
2,3,4,7,8-PeCDF	ND		50	0.025	pg/L		01/26/23 06:40	02/13/23 01:26	1
1,2,3,4,7,8-HxCDD	**0.98**	**J B**	50	0.042	pg/L		01/26/23 06:40	02/13/23 01:26	1
1,2,3,6,7,8-HxCDD	ND		50	0.040	pg/L		01/26/23 06:40	02/13/23 01:26	1
1,2,3,7,8,9-HxCDD	ND		50	0.037	pg/L		01/26/23 06:40	02/13/23 01:26	1
1,2,3,4,7,8-HxCDF	ND		50	0.034	pg/L		01/26/23 06:40	02/13/23 01:26	1
1,2,3,6,7,8-HxCDF	ND		50	0.034	pg/L		01/26/23 06:40	02/13/23 01:26	1
2,3,4,6,7,8-HxCDF	ND		50	0.029	pg/L		01/26/23 06:40	02/13/23 01:26	1
1,2,3,7,8,9-HxCDF	ND		50	0.029	pg/L		01/26/23 06:40	02/13/23 01:26	1
1,2,3,4,6,7,8-HpCDD	**2.1**	**J B**	50	0.053	pg/L		01/26/23 06:40	02/13/23 01:26	1
1,2,3,4,6,7,8-HpCDF	**0.87**	**J q B**	50	0.051	pg/L		01/26/23 06:40	02/13/23 01:26	1
1,2,3,4,7,8,9-HpCDF	**0.28**	**J q B**	50	0.054	pg/L		01/26/23 06:40	02/13/23 01:26	1
OCDD	**34**	**J B**	100	0.096	pg/L		01/26/23 06:40	02/13/23 01:26	1
OCDF	**2.1**	**J q B**	100	0.032	pg/L		01/26/23 06:40	02/13/23 01:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*86*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-2,3,7,8-TCDF	*68*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-1,2,3,7,8-PeCDD	*99*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-1,2,3,7,8-PeCDF	*83*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-1,2,3,6,7,8-HxCDD	*76*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-2,3,4,7,8-PeCDF	*79*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-1,2,3,4,7,8-HxCDD	*74*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-1,2,3,4,7,8-HxCDF	*59*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*92*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*66*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-1,2,3,6,7,8-HxCDF	*58*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-OCDD	*80*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-1,2,3,7,8,9-HxCDF	*65*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-2,3,4,6,7,8-HxCDF	*65*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*73*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*
13C-OCDF	*92*		*40 - 135*	*01/26/23 06:40*	*02/13/23 01:26*	*1*

Client Sample ID: A2BMP0007S023
Date Collected: 01/09/23 09:43
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.7	0.11	pg/L		01/26/23 06:40	02/13/23 02:14	1
2,3,7,8-TCDF	ND		9.7	0.0094	pg/L		01/26/23 06:40	02/13/23 02:14	1
1,2,3,7,8-PeCDD	ND		49	0.081	pg/L		01/26/23 06:40	02/13/23 02:14	1
1,2,3,7,8-PeCDF	ND		49	0.037	pg/L		01/26/23 06:40	02/13/23 02:14	1
2,3,4,7,8-PeCDF	ND		49	0.044	pg/L		01/26/23 06:40	02/13/23 02:14	1
1,2,3,4,7,8-HxCDD	**1.3**	**J q B**	49	0.056	pg/L		01/26/23 06:40	02/13/23 02:14	1
1,2,3,6,7,8-HxCDD	**0.45**	**J q B**	49	0.053	pg/L		01/26/23 06:40	02/13/23 02:14	1
1,2,3,7,8,9-HxCDD	**0.30**	**J q B**	49	0.050	pg/L		01/26/23 06:40	02/13/23 02:14	1
1,2,3,4,7,8-HxCDF	ND		49	0.035	pg/L		01/26/23 06:40	02/13/23 02:14	1
1,2,3,6,7,8-HxCDF	ND		49	0.034	pg/L		01/26/23 06:40	02/13/23 02:14	1

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: A2BMP0007S023
Date Collected: 01/09/23 09:43
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,6,7,8-HxCDF	ND		49	0.033	pg/L		01/26/23 06:40	02/13/23 02:14	1
1,2,3,7,8,9-HxCDF	ND		49	0.033	pg/L		01/26/23 06:40	02/13/23 02:14	1
1,2,3,4,6,7,8-HpCDD	**9.4**	**J B**	49	0.073	pg/L		01/26/23 06:40	02/13/23 02:14	1
1,2,3,4,6,7,8-HpCDF	**1.4**	**J q B**	49	0.048	pg/L		01/26/23 06:40	02/13/23 02:14	1
1,2,3,4,7,8,9-HpCDF	ND		49	0.051	pg/L		01/26/23 06:40	02/13/23 02:14	1
OCDD	**140**	**B**	97	0.18	pg/L		01/26/23 06:40	02/13/23 02:14	1
OCDF	**4.5**	**J q B**	97	0.032	pg/L		01/26/23 06:40	02/13/23 02:14	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-2,3,7,8-TCDF	*59*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-1,2,3,7,8-PeCDD	*93*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-1,2,3,7,8-PeCDF	*77*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-1,2,3,6,7,8-HxCDD	*78*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-2,3,4,7,8-PeCDF	*75*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-1,2,3,4,7,8-HxCDD	*74*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-1,2,3,4,7,8-HxCDF	*62*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*86*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*65*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-1,2,3,6,7,8-HxCDF	*61*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-OCDD	*70*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-1,2,3,7,8,9-HxCDF	*63*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-2,3,4,6,7,8-HxCDF	*61*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*69*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*
13C-OCDF	*79*		*40 - 135*	*01/26/23 06:40*	*02/13/23 02:14*	*1*

Client Sample ID: EVBMP0007S015
Date Collected: 01/09/23 09:00
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.14	pg/L		01/26/23 06:40	02/13/23 03:03	1
2,3,7,8-TCDF	ND		10	0.0072	pg/L		01/26/23 06:40	02/13/23 03:03	1
1,2,3,7,8-PeCDD	ND		51	0.11	pg/L		01/26/23 06:40	02/13/23 03:03	1
1,2,3,7,8-PeCDF	ND		51	0.028	pg/L		01/26/23 06:40	02/13/23 03:03	1
2,3,4,7,8-PeCDF	ND		51	0.030	pg/L		01/26/23 06:40	02/13/23 03:03	1
1,2,3,4,7,8-HxCDD	**1.8**	**J q B**	51	0.049	pg/L		01/26/23 06:40	02/13/23 03:03	1
1,2,3,6,7,8-HxCDD	ND		51	0.046	pg/L		01/26/23 06:40	02/13/23 03:03	1
1,2,3,7,8,9-HxCDD	**0.40**	**J q B**	51	0.043	pg/L		01/26/23 06:40	02/13/23 03:03	1
1,2,3,4,7,8-HxCDF	ND		51	0.033	pg/L		01/26/23 06:40	02/13/23 03:03	1
1,2,3,6,7,8-HxCDF	ND		51	0.032	pg/L		01/26/23 06:40	02/13/23 03:03	1
2,3,4,6,7,8-HxCDF	ND		51	0.029	pg/L		01/26/23 06:40	02/13/23 03:03	1
1,2,3,7,8,9-HxCDF	ND		51	0.031	pg/L		01/26/23 06:40	02/13/23 03:03	1
1,2,3,4,6,7,8-HpCDD	**8.6**	**J B**	51	0.083	pg/L		01/26/23 06:40	02/13/23 03:03	1
1,2,3,4,6,7,8-HpCDF	**1.9**	**J B**	51	0.10	pg/L		01/26/23 06:40	02/13/23 03:03	1
1,2,3,4,7,8,9-HpCDF	ND		51	0.11	pg/L		01/26/23 06:40	02/13/23 03:03	1
OCDD	**80**	**J B**	100	0.12	pg/L		01/26/23 06:40	02/13/23 03:03	1
OCDF	**7.6**	**J q B**	100	0.12	pg/L		01/26/23 06:40	02/13/23 03:03	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-2,3,7,8-TCDF	*61*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0007S015
Date Collected: 01/09/23 09:00
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-3
Matrix: Water

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,7,8-PeCDD	*88*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-1,2,3,7,8-PeCDF	*78*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-1,2,3,6,7,8-HxCDD	*75*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-2,3,4,7,8-PeCDF	*74*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-1,2,3,4,7,8-HxCDD	*75*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-1,2,3,4,7,8-HxCDF	*69*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*85*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*74*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-1,2,3,6,7,8-HxCDF	*69*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-OCDD	*75*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-1,2,3,7,8,9-HxCDF	*71*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-2,3,4,6,7,8-HxCDF	*72*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*78*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*
13C-OCDF	*96*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:03*	*1*

Client Sample ID: EVBMP0008S018
Date Collected: 01/09/23 09:16
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-4
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.13	pg/L		01/26/23 06:40	02/13/23 03:51	1
2,3,7,8-TCDF	ND		10	0.013	pg/L		01/26/23 06:40	02/13/23 03:51	1
1,2,3,7,8-PeCDD	ND		51	0.065	pg/L		01/26/23 06:40	02/13/23 03:51	1
1,2,3,7,8-PeCDF	ND		51	0.031	pg/L		01/26/23 06:40	02/13/23 03:51	1
2,3,4,7,8-PeCDF	ND		51	0.035	pg/L		01/26/23 06:40	02/13/23 03:51	1
1,2,3,4,7,8-HxCDD	**1.7**	**J B**	51	0.041	pg/L		01/26/23 06:40	02/13/23 03:51	1
1,2,3,6,7,8-HxCDD	ND		51	0.041	pg/L		01/26/23 06:40	02/13/23 03:51	1
1,2,3,7,8,9-HxCDD	ND		51	0.037	pg/L		01/26/23 06:40	02/13/23 03:51	1
1,2,3,4,7,8-HxCDF	ND		51	0.027	pg/L		01/26/23 06:40	02/13/23 03:51	1
1,2,3,6,7,8-HxCDF	ND		51	0.027	pg/L		01/26/23 06:40	02/13/23 03:51	1
2,3,4,6,7,8-HxCDF	ND		51	0.025	pg/L		01/26/23 06:40	02/13/23 03:51	1
1,2,3,7,8,9-HxCDF	ND		51	0.025	pg/L		01/26/23 06:40	02/13/23 03:51	1
1,2,3,4,6,7,8-HpCDD	**5.1**	**J B**	51	0.075	pg/L		01/26/23 06:40	02/13/23 03:51	1
1,2,3,4,6,7,8-HpCDF	**1.2**	**J q B**	51	0.053	pg/L		01/26/23 06:40	02/13/23 03:51	1
1,2,3,4,7,8,9-HpCDF	ND		51	0.056	pg/L		01/26/23 06:40	02/13/23 03:51	1
OCDD	**77**	**J B**	100	0.13	pg/L		01/26/23 06:40	02/13/23 03:51	1
OCDF	**4.9**	**J B**	100	0.060	pg/L		01/26/23 06:40	02/13/23 03:51	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*76*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*
13C-2,3,7,8-TCDF	*63*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*
13C-1,2,3,7,8-PeCDD	*86*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*
13C-1,2,3,7,8-PeCDF	*77*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*
13C-1,2,3,6,7,8-HxCDD	*74*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*
13C-2,3,4,7,8-PeCDF	*75*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*
13C-1,2,3,4,7,8-HxCDD	*73*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*
13C-1,2,3,4,7,8-HxCDF	*68*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*78*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*68*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*
13C-1,2,3,6,7,8-HxCDF	*67*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*
13C-OCDD	*69*		*40 - 135*	*01/26/23 06:40*	*02/13/23 03:51*	*1*

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0008S018
Date Collected: 01/09/23 09:16
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-4
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8,9-HxCDF	68		40 - 135	01/26/23 06:40	02/13/23 03:51	1
13C-2,3,4,6,7,8-HxCDF	67		40 - 135	01/26/23 06:40	02/13/23 03:51	1
13C-1,2,3,4,7,8,9-HpCDF	72		40 - 135	01/26/23 06:40	02/13/23 03:51	1
13C-OCDF	90		40 - 135	01/26/23 06:40	02/13/23 03:51	1

Client Sample ID: EVBMP0009S016
Date Collected: 01/09/23 09:10
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-5
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.9	1.2	pg/L		01/27/23 09:36	02/13/23 17:14	1
2,3,7,8-TCDF	ND		9.9	0.58	pg/L		01/27/23 09:36	02/13/23 17:14	1
1,2,3,7,8-PeCDD	ND		49	0.60	pg/L		01/27/23 09:36	02/13/23 17:14	1
1,2,3,7,8-PeCDF	ND		49	0.39	pg/L		01/27/23 09:36	02/13/23 17:14	1
2,3,4,7,8-PeCDF	ND		49	0.44	pg/L		01/27/23 09:36	02/13/23 17:14	1
1,2,3,4,7,8-HxCDD	**2.0**	**J q B**	49	0.42	pg/L		01/27/23 09:36	02/13/23 17:14	1
1,2,3,6,7,8-HxCDD	**1.8**	**J q B**	49	0.40	pg/L		01/27/23 09:36	02/13/23 17:14	1
1,2,3,7,8,9-HxCDD	**0.95**	**J q B**	49	0.36	pg/L		01/27/23 09:36	02/13/23 17:14	1
1,2,3,4,7,8-HxCDF	**0.81**	**J B**	49	0.38	pg/L		01/27/23 09:36	02/13/23 17:14	1
1,2,3,6,7,8-HxCDF	**0.58**	**J q B**	49	0.34	pg/L		01/27/23 09:36	02/13/23 17:14	1
2,3,4,6,7,8-HxCDF	ND		49	0.33	pg/L		01/27/23 09:36	02/13/23 17:14	1
1,2,3,7,8,9-HxCDF	**0.80**	**J B**	49	0.38	pg/L		01/27/23 09:36	02/13/23 17:14	1
1,2,3,4,6,7,8-HpCDD	**44**	**J B**	49	1.3	pg/L		01/27/23 09:36	02/13/23 17:14	1
1,2,3,4,6,7,8-HpCDF	**8.3**	**J B**	49	0.60	pg/L		01/27/23 09:36	02/13/23 17:14	1
1,2,3,4,7,8,9-HpCDF	**1.5**	**J B**	49	0.70	pg/L		01/27/23 09:36	02/13/23 17:14	1
OCDD	**700**	**B**	99	5.9	pg/L		01/27/23 09:36	02/13/23 17:14	1
OCDF	**51**	**J B**	99	2.1	pg/L		01/27/23 09:36	02/13/23 17:14	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	72		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-2,3,7,8-TCDF	69		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-1,2,3,7,8-PeCDD	71		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-1,2,3,7,8-PeCDF	71		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-1,2,3,6,7,8-HxCDD	77		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-2,3,4,7,8-PeCDF	71		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-1,2,3,4,7,8-HxCDD	71		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-1,2,3,4,7,8-HxCDF	66		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-1,2,3,4,6,7,8-HpCDD	72		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-1,2,3,4,6,7,8-HpCDF	70		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-1,2,3,6,7,8-HxCDF	78		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-OCDD	71		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-1,2,3,7,8,9-HxCDF	78		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-2,3,4,6,7,8-HxCDF	79		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-1,2,3,4,7,8,9-HpCDF	74		40 - 135	01/27/23 09:36	02/13/23 17:14	1
13C-OCDF	69		40 - 135	01/27/23 09:36	02/13/23 17:14	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: A2BMP0006S015
Date Collected: 01/09/23 09:33
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/02/23 18:41	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 18:41	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/02/23 18:41	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 18:41	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/02/23 18:41	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/02/23 18:41	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/02/23 18:41	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 18:41	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/02/23 18:41	1

Client Sample ID: A2BMP0007S023
Date Collected: 01/09/23 09:43
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**10.85**		0.01	0.01	%			02/02/23 18:47	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 18:47	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/02/23 18:47	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 18:47	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/02/23 18:47	1
Silt (0.00391 to 0.0625mm)	**89.15**		0.01	0.01	%			02/02/23 18:47	1
Total Silt and Clay (0 to 0.0626mm)	**100.00**		0.01	0.01	%			02/02/23 18:47	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 18:47	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/02/23 18:47	1

Client Sample ID: EVBMP0007S015
Date Collected: 01/09/23 09:00
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**2.23**		0.01	0.01	%			02/02/23 18:56	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 18:56	1
Fine Sand (0.125 to 0.25mm)	**9.46**		0.01	0.01	%			02/02/23 18:56	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 18:56	1
Medium Sand (0.25 to 0.5 mm)	**57.47**		0.01	0.01	%			02/02/23 18:56	1
Silt (0.00391 to 0.0625mm)	**19.21**		0.01	0.01	%			02/02/23 18:56	1
Total Silt and Clay (0 to 0.0626mm)	**21.45**		0.01	0.01	%			02/02/23 18:56	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 18:56	1
Very Fine Sand (0.0625 to 0.125 mm)	**11.63**		0.01	0.01	%			02/02/23 18:56	1

Client Sample ID: EVBMP0008S018
Date Collected: 01/09/23 09:16
Date Received: 01/10/23 18:00
Lab Sample ID: 570-123377-4
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**38.62**		0.01	0.01	%			02/02/23 20:09	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 20:09	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/02/23 20:09	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 20:09	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/02/23 20:09	1
Silt (0.00391 to 0.0625mm)	**62.38**		0.01	0.01	%			02/02/23 20:09	1
Total Silt and Clay (0 to 0.0626mm)	**100.00**		0.01	0.01	%			02/02/23 20:09	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Client Sample ID: EVBMP0008S018 **Lab Sample ID: 570-123377-4**
Date Collected: 01/09/23 09:16 **Matrix: Water**
Date Received: 01/10/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 20:09	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/02/23 20:09	1

Client Sample ID: EVBMP0009S016 **Lab Sample ID: 570-123377-5**
Date Collected: 01/09/23 09:10 **Matrix: Water**
Date Received: 01/10/23 18:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/02/23 20:18	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/02/23 20:18	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/02/23 20:18	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/02/23 20:18	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/02/23 20:18	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/02/23 20:18	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/02/23 20:18	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/02/23 20:18	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/02/23 20:18	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

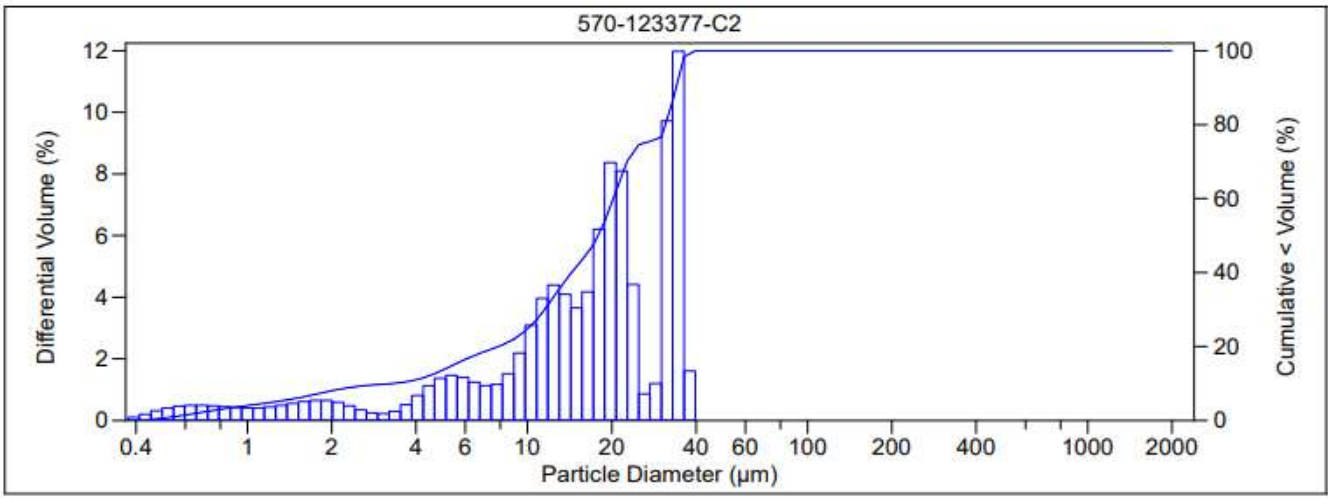
Jacobs Engineering Group, Inc.

Date Sampled:	01/09/23
Date Received:	01/10/23
Work Order No:	570-123377
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
A2BMP0007S023		Silt	0.018

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	89.15	10.85	100.00



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

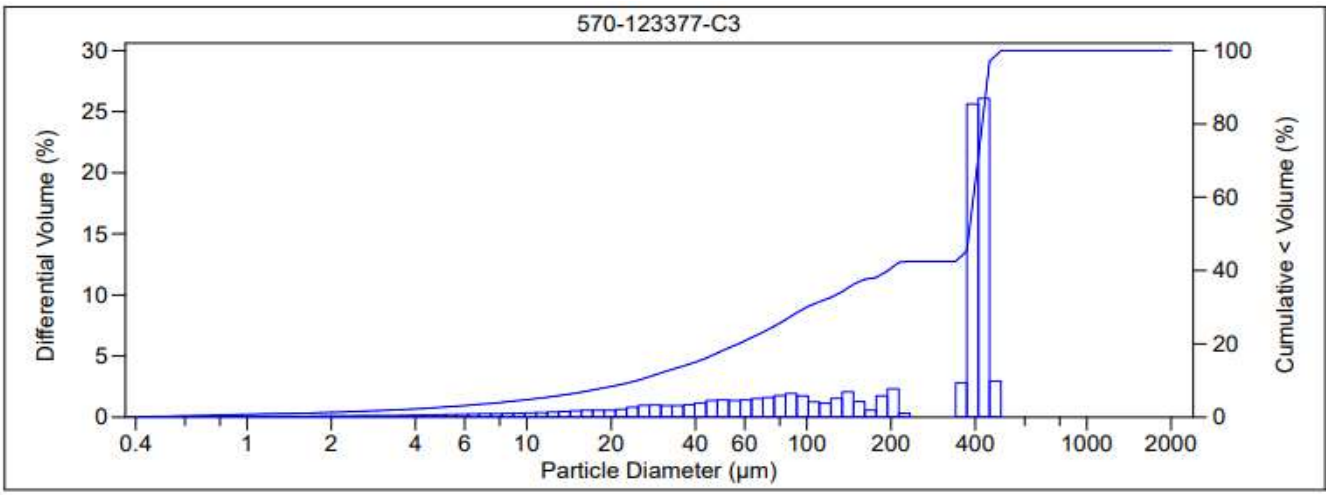
Jacobs Engineering Group, Inc.

Date Sampled:	01/09/23
Date Received:	01/10/23
Work Order No:	570-123377
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0007S015		Medium Sand	0.268

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	57.47	9.46	11.63	19.21	2.23	21.45



V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	01/09/23
Date Received:	01/10/23
Work Order No:	570-123377
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
A2BMP0006S015		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

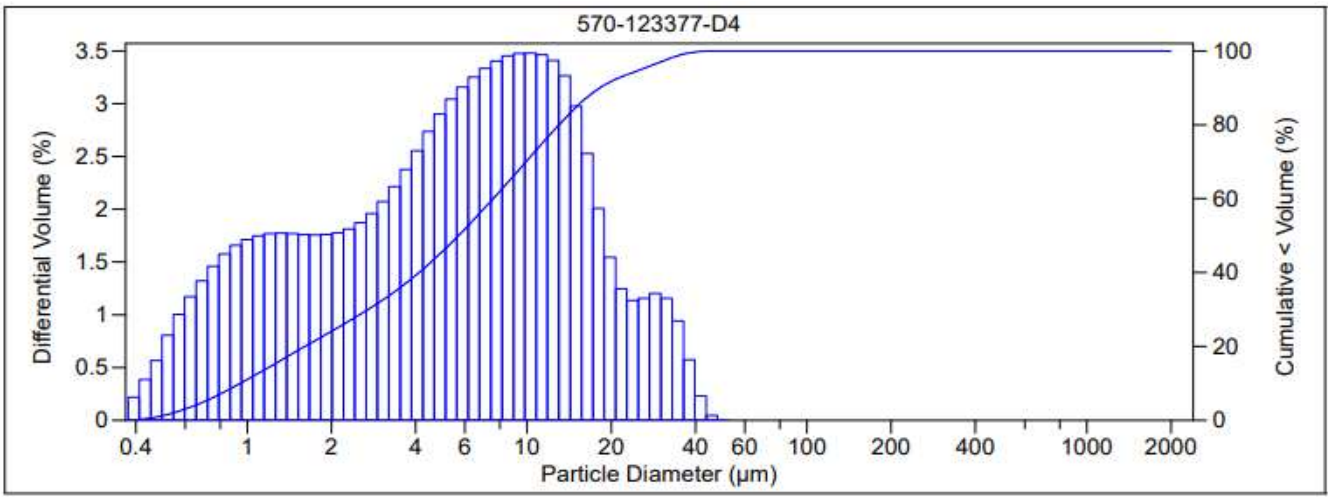
Jacobs Engineering Group, Inc.

Date Sampled:	01/09/23
Date Received:	01/10/23
Work Order No:	570-123377
Date Analyzed:	02/02/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0008S018		Silt	0.008

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	61.38	38.62	100.00



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	01/09/23
Date Received:	01/10/23
Work Order No:	570-123377
Date Analyzed:	02/02/23
Method:	ASTM D4464M

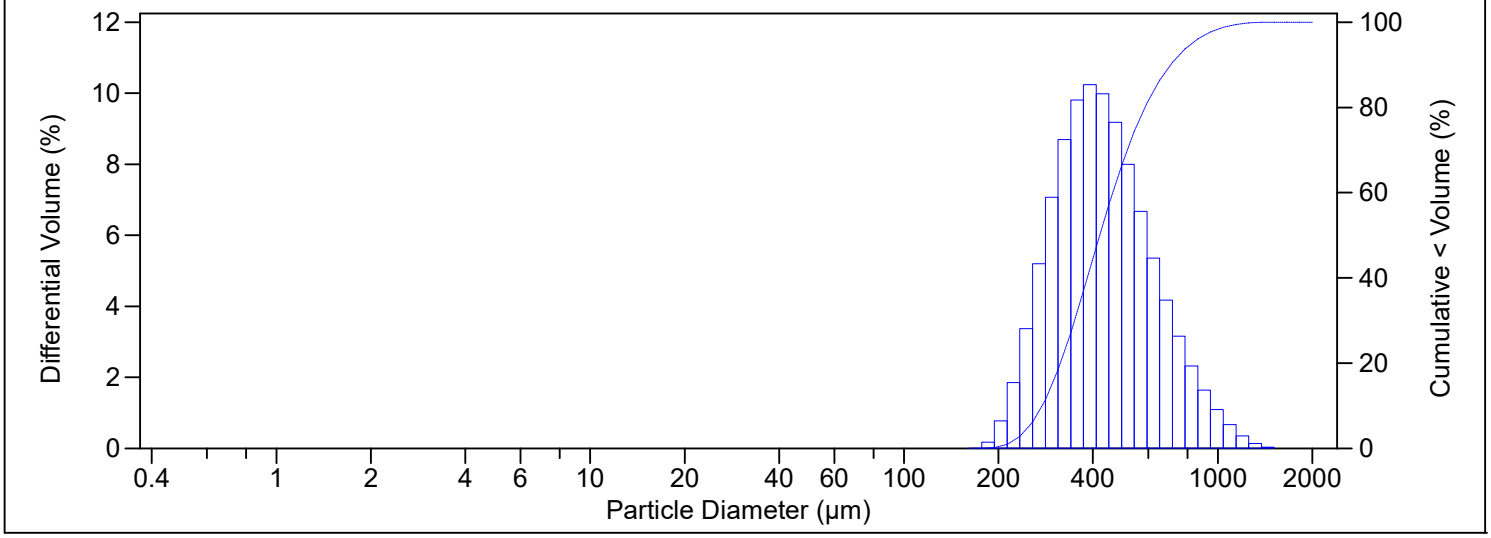
Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0009S016		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

File name:	C:\LS13320\STD SAND_ 2 Feb 2023_20.55.25.$ls		
	STD SAND_ 2 Feb 2023_20.55.25.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	SP9M		
Run number:	16		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.68%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:54 2 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	8%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 2 Feb 2023_20.55.25.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	462.3 µm	S.D.:	181.7 µm
Median:	420.8 µm	Variance:	33001 µm^2
Mean/Median ratio:	1.099	Skewness:	1.360 Right skewed
Mode:	391.0 µm	Kurtosis:	2.335 Leptokurtic

d_{10}: 275.4 µm d_{50}: 420.8 µm d_{90}: 708.0 µm

Folk and Ward Statistics (Phi)

Mean:	1.22	Median:	1.25	Deviation:	0.53
Skewness:	-0.10	Kurtosis:	0.99		

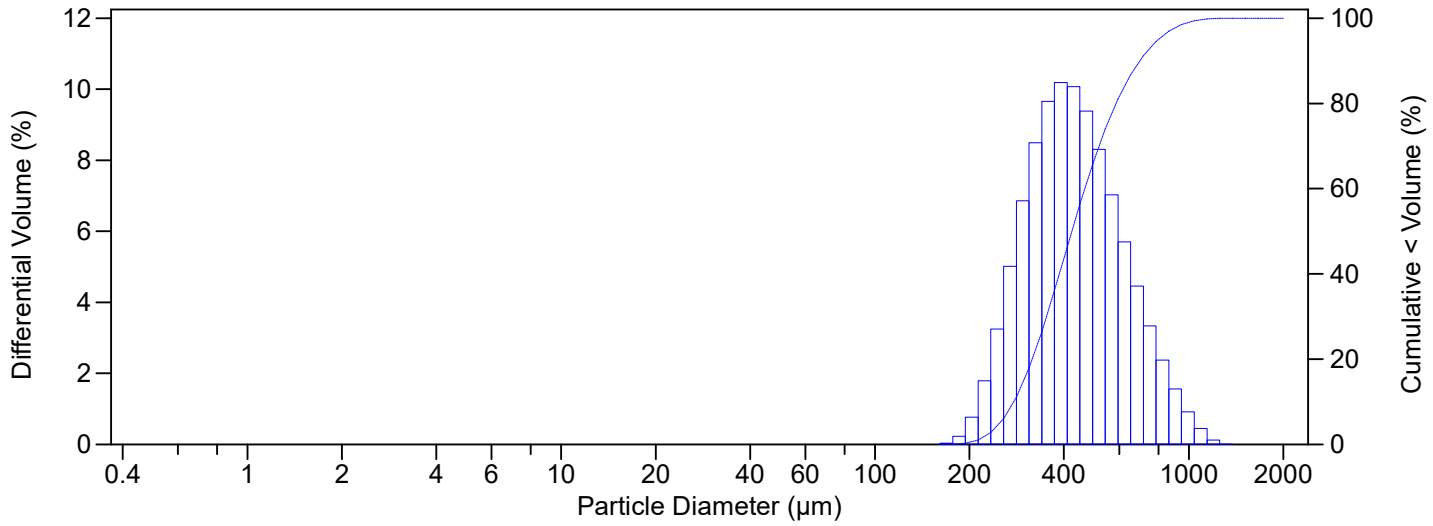
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
248.9 µm	300.0 µm	332.4 µm	384.0 µm	420.8 µm	546.9 µm	626.9 µm	828.9 µm

Particle Diameter µm	STD SAND_ 2 Feb 2023 _20.55.25 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	5.17
250	62.3
500	30.9
1000	1.69
2000	

STD SAND_ 2 Feb 2023_20.55.25.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.36
0.412	0	22.73	0	1255	0.14
0.452	0	24.95	0	1377	0.033
0.496	0	27.39	0	1512	0.0020
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.010		
3.206	0	176.9	0.18		
3.519	0	194.2	0.78		
3.863	0	213.2	1.85		
4.241	0	234.1	3.37		
4.656	0	256.9	5.20		
5.111	0	282.1	7.08		
5.611	0	309.6	8.70		
6.159	0	339.9	9.80		
6.761	0	373.1	10.2		
7.422	0	409.6	9.99		
8.148	0	449.7	9.18		
8.944	0	493.6	8.00		
9.819	0	541.9	6.67		
10.78	0	594.9	5.36		
11.83	0	653.0	4.17		
12.99	0	716.9	3.16		
14.26	0	786.9	2.32		
15.65	0	863.9	1.64		
17.18	0	948.3	1.10		
18.86	0	1041	0.67		

File name:	C:\LS13320\STD SAND_ 2 Feb 2023_21.29.21.$ls		
	STD SAND_ 2 Feb 2023_21.29.21.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	SP9M		
Run number:	18		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.91%		
LS 13 320	Aqueous Liquid Module		
Start time:	21:28 2 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	8%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 2 Feb 2023_21.29.21.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	460.3 µm	S.D.:	170.7 µm
Median:	424.4 µm	Variance:	29150 µm^2
Mean/Median ratio:	1.084	Skewness:	1.106 Right skewed
Mode:	391.0 µm	Kurtosis:	1.278 Leptokurtic

d_{10}: 276.6 µm d_{50}: 424.4 µm d_{90}: 699.3 µm

Folk and Ward Statistics (Phi)

Mean:	1.21	Median:	1.24	Deviation:	0.52
Skewness:	-0.08	Kurtosis:	0.97		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
249.4 µm	301.8 µm	334.8 µm	387.1 µm	424.4 µm	549.1 µm	624.8 µm	800.9 µm

Particle Diameter µm	STD SAND_ 2 Feb 2023 _21.29.21 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	5.08
250	61.7
500	32.2
1000	0.99
2000	

STD SAND_ 2 Feb 2023_21.29.21.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.13
0.412	0	22.73	0	1255	0.0089
0.452	0	24.95	0	1377	0
0.496	0	27.39	0	1512	0
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0.0020		
2.920	0	161.2	0.038		
3.206	0	176.9	0.23		
3.519	0	194.2	0.77		
3.863	0	213.2	1.79		
4.241	0	234.1	3.24		
4.656	0	256.9	5.02		
5.111	0	282.1	6.86		
5.611	0	309.6	8.49		
6.159	0	339.9	9.66		
6.761	0	373.1	10.2		
7.422	0	409.6	10.1		
8.148	0	449.7	9.38		
8.944	0	493.6	8.31		
9.819	0	541.9	7.03		
10.78	0	594.9	5.71		
11.83	0	653.0	4.46		
12.99	0	716.9	3.34		
14.26	0	786.9	2.37		
15.65	0	863.9	1.56		
17.18	0	948.3	0.92		
18.86	0	1041	0.45		

Isotope Dilution Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-2

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (40-135)	TCDF (40-135)	PeCDD (40-135)	PeCDF (40-135)	HxDD (40-135)	PeCF (40-135)	HxCDD (40-135)	HxCDF (40-135)
570-123377-1	A2BMP0006S015	86	68	99	83	76	79	74	59
570-123377-2	A2BMP0007S023	76	59	93	77	78	75	74	62
570-123377-3	EVBMP0007S015	79	61	88	78	75	74	75	69
570-123377-4	EVBMP0008S018	76	63	86	77	74	75	73	68
570-123377-5	EVBMP0009S016	72	69	71	71	77	71	71	66
LCS 320-649403/2-A	Lab Control Sample	79	58	95	78	71	70	69	61
LCS 320-649887/2-A	Lab Control Sample	75	72	75	77	84	74	70	70
LCSD 320-649403/3-A	Lab Control Sample Dup	83	64	90	80	81	81	79	73
LCSD 320-649887/3-A	Lab Control Sample Dup	75	73	75	76	84	77	76	74
MB 320-649403/1-A	Method Blank	79	62	92	79	82	73	77	66
MB 320-649887/1-A	Method Blank	69	66	68	69	75	68	65	65

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (40-135)	HpCDF (40-135)	HxDF (40-135)	OCDD (40-135)	HxCF (40-135)	13CHxCF (40-135)	HpCDF2 (40-135)	OCDF (40-135)
570-123377-1	A2BMP0006S015	92	66	58	80	65	65	73	92
570-123377-2	A2BMP0007S023	86	65	61	70	63	61	69	79
570-123377-3	EVBMP0007S015	85	74	69	75	71	72	78	96
570-123377-4	EVBMP0008S018	78	68	67	69	68	67	72	90
570-123377-5	EVBMP0009S016	72	70	78	71	78	79	74	69
LCS 320-649403/2-A	Lab Control Sample	87	64	61	73	69	67	72	88
LCS 320-649887/2-A	Lab Control Sample	75	74	82	74	81	85	77	74
LCSD 320-649403/3-A	Lab Control Sample Dup	89	77	74	82	77	77	83	106
LCSD 320-649887/3-A	Lab Control Sample Dup	74	75	86	75	81	84	76	75
MB 320-649403/1-A	Method Blank	86	72	67	74	64	66	73	89
MB 320-649887/1-A	Method Blank	67	67	76	42	74	77	70	55

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
OCDD = 13C-OCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDF = 13C-OCDF

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-649403/1-A
Matrix: Water
Analysis Batch: 653177

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649403

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.091	pg/L		01/26/23 06:40	02/12/23 21:26	1
2,3,7,8-TCDF	ND		10	0.018	pg/L		01/26/23 06:40	02/12/23 21:26	1
1,2,3,7,8-PeCDD	ND		50	0.066	pg/L		01/26/23 06:40	02/12/23 21:26	1
1,2,3,7,8-PeCDF	ND		50	0.039	pg/L		01/26/23 06:40	02/12/23 21:26	1
2,3,4,7,8-PeCDF	ND		50	0.046	pg/L		01/26/23 06:40	02/12/23 21:26	1
1,2,3,4,7,8-HxCDD	2.503	J	50	0.093	pg/L		01/26/23 06:40	02/12/23 21:26	1
1,2,3,6,7,8-HxCDD	1.699	J	50	0.092	pg/L		01/26/23 06:40	02/12/23 21:26	1
1,2,3,7,8,9-HxCDD	1.946	J q	50	0.084	pg/L		01/26/23 06:40	02/12/23 21:26	1
1,2,3,4,7,8-HxCDF	1.096	J q	50	0.096	pg/L		01/26/23 06:40	02/12/23 21:26	1
1,2,3,6,7,8-HxCDF	1.171	J q	50	0.090	pg/L		01/26/23 06:40	02/12/23 21:26	1
2,3,4,6,7,8-HxCDF	ND		50	0.086	pg/L		01/26/23 06:40	02/12/23 21:26	1
1,2,3,7,8,9-HxCDF	1.484	J	50	0.091	pg/L		01/26/23 06:40	02/12/23 21:26	1
1,2,3,4,6,7,8-HpCDD	2.866	J q	50	0.056	pg/L		01/26/23 06:40	02/12/23 21:26	1
1,2,3,4,6,7,8-HpCDF	2.196	J	50	0.048	pg/L		01/26/23 06:40	02/12/23 21:26	1
1,2,3,4,7,8,9-HpCDF	1.422	J q	50	0.053	pg/L		01/26/23 06:40	02/12/23 21:26	1
OCDD	26.06	J	100	0.12	pg/L		01/26/23 06:40	02/12/23 21:26	1
OCDF	4.891	J	100	0.052	pg/L		01/26/23 06:40	02/12/23 21:26	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-2,3,7,8-TCDF	*62*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-1,2,3,7,8-PeCDD	*92*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-1,2,3,7,8-PeCDF	*79*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-1,2,3,6,7,8-HxCDD	*82*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-2,3,4,7,8-PeCDF	*73*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-1,2,3,4,7,8-HxCDF	*66*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*86*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*72*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-1,2,3,6,7,8-HxCDF	*67*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-OCDD	*74*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-1,2,3,7,8,9-HxCDF	*64*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-2,3,4,6,7,8-HxCDF	*66*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*73*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*
13C-OCDF	*89*		*40 - 135*	*01/26/23 06:40*	*02/12/23 21:26*	*1*

Lab Sample ID: LCS 320-649403/2-A
Matrix: Water
Analysis Batch: 653177

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649403

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	200	167.4		pg/L		84	72 - 128
2,3,7,8-TCDF	200	162.2		pg/L		81	67 - 135
1,2,3,7,8-PeCDD	1000	828.8		pg/L		83	71 - 135
1,2,3,7,8-PeCDF	1000	798.5		pg/L		80	70 - 133
2,3,4,7,8-PeCDF	1000	805.8		pg/L		81	69 - 135
1,2,3,4,7,8-HxCDD	1000	873.1		pg/L		87	67 - 130
1,2,3,6,7,8-HxCDD	1000	874.8		pg/L		87	61 - 144
1,2,3,7,8,9-HxCDD	1000	967.1		pg/L		97	61 - 140

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-649403/2-A
Matrix: Water
Analysis Batch: 653177

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649403

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3,4,7,8-HxCDF			1000	864.7		pg/L		86	69 - 140		
1,2,3,6,7,8-HxCDF			1000	864.1		pg/L		86	62 - 155		
2,3,4,6,7,8-HxCDF			1000	881.6		pg/L		88	70 - 146		
1,2,3,7,8,9-HxCDF			1000	871.2		pg/L		87	71 - 142		
1,2,3,4,6,7,8-HpCDD			1000	824.4		pg/L		82	71 - 134		
1,2,3,4,6,7,8-HpCDF			1000	841.5		pg/L		84	68 - 137		
1,2,3,4,7,8,9-HpCDF			1000	831.7		pg/L		83	74 - 134		
OCDD			2000	1668		pg/L		83	72 - 134		
OCDF			2000	1715		pg/L		86	65 - 143		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*79*		*40 - 135*
13C-2,3,7,8-TCDF	*58*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*95*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*78*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*71*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*70*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*69*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*61*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*87*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*64*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*61*		*40 - 135*
13C-OCDD	*73*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*69*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*67*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*72*		*40 - 135*
13C-OCDF	*88*		*40 - 135*

Lab Sample ID: LCSD 320-649403/3-A
Matrix: Water
Analysis Batch: 653177

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649403

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			200	168.0		pg/L		84	72 - 128	0	20
2,3,7,8-TCDF			200	158.5		pg/L		79	67 - 135	2	20
1,2,3,7,8-PeCDD			1000	964.4		pg/L		96	71 - 135	15	20
1,2,3,7,8-PeCDF			1000	908.8		pg/L		91	70 - 133	13	20
2,3,4,7,8-PeCDF			1000	893.9		pg/L		89	69 - 135	10	20
1,2,3,4,7,8-HxCDD			1000	890.5		pg/L		89	67 - 130	2	20
1,2,3,6,7,8-HxCDD			1000	903.0		pg/L		90	61 - 144	3	20
1,2,3,7,8,9-HxCDD			1000	929.7		pg/L		93	61 - 140	4	20
1,2,3,4,7,8-HxCDF			1000	905.5		pg/L		91	69 - 140	5	20
1,2,3,6,7,8-HxCDF			1000	888.7		pg/L		89	62 - 155	3	20
2,3,4,6,7,8-HxCDF			1000	898.1		pg/L		90	70 - 146	2	20
1,2,3,7,8,9-HxCDF			1000	888.9		pg/L		89	71 - 142	2	20
1,2,3,4,6,7,8-HpCDD			1000	884.9		pg/L		88	71 - 134	7	20
1,2,3,4,6,7,8-HpCDF			1000	892.6		pg/L		89	68 - 137	6	20
1,2,3,4,7,8,9-HpCDF			1000	879.7		pg/L		88	74 - 134	6	20
OCDD			2000	1723		pg/L		86	72 - 134	3	20

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-649403/3-A
Matrix: Water
Analysis Batch: 653177

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649403

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
OCDF			2000	1792		pg/L		90	65 - 143	4	20

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*83*		*40 - 135*
13C-2,3,7,8-TCDF	*64*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*90*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*80*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*81*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*81*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*79*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*73*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*89*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*77*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*74*		*40 - 135*
13C-OCDD	*82*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*77*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*77*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*83*		*40 - 135*
13C-OCDF	*106*		*40 - 135*

Lab Sample ID: MB 320-649887/1-A
Matrix: Water
Analysis Batch: 653394

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649887

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.20	pg/L		01/27/23 09:36	02/13/23 14:10	1
2,3,7,8-TCDF	ND		10	0.14	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,7,8-PeCDD	ND		50	0.31	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,7,8-PeCDF	0.2420	J q	50	0.20	pg/L		01/27/23 09:36	02/13/23 14:10	1
2,3,4,7,8-PeCDF	0.3176	J q	50	0.23	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,4,7,8-HxCDD	2.269	J	50	0.29	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,6,7,8-HxCDD	0.4788	J q	50	0.28	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,7,8,9-HxCDD	0.8502	J	50	0.25	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,4,7,8-HxCDF	0.6275	J	50	0.20	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,6,7,8-HxCDF	0.5117	J	50	0.19	pg/L		01/27/23 09:36	02/13/23 14:10	1
2,3,4,6,7,8-HxCDF	0.5009	J	50	0.18	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,7,8,9-HxCDF	0.9081	J	50	0.21	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,4,6,7,8-HpCDD	2.369	J	50	0.30	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,4,6,7,8-HpCDF	1.167	J q	50	0.22	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,4,7,8,9-HpCDF	0.6639	J q	50	0.25	pg/L		01/27/23 09:36	02/13/23 14:10	1
OCDD	28.18	J	100	1.8	pg/L		01/27/23 09:36	02/13/23 14:10	1
OCDF	3.031	J	100	0.25	pg/L		01/27/23 09:36	02/13/23 14:10	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-2,3,7,8-TCDF	*66*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,7,8-PeCDD	*68*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,7,8-PeCDF	*69*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,6,7,8-HxCDD	*75*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-649887/1-A
Matrix: Water
Analysis Batch: 653394

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 649887

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,4,7,8-PeCDF	68		40 - 135	01/27/23 09:36	02/13/23 14:10	1
13C-1,2,3,4,7,8-HxCDD	65		40 - 135	01/27/23 09:36	02/13/23 14:10	1
13C-1,2,3,4,7,8-HxCDF	65		40 - 135	01/27/23 09:36	02/13/23 14:10	1
13C-1,2,3,4,6,7,8-HpCDD	67		40 - 135	01/27/23 09:36	02/13/23 14:10	1
13C-1,2,3,4,6,7,8-HpCDF	67		40 - 135	01/27/23 09:36	02/13/23 14:10	1
13C-1,2,3,6,7,8-HxCDF	76		40 - 135	01/27/23 09:36	02/13/23 14:10	1
13C-OCDD	42		40 - 135	01/27/23 09:36	02/13/23 14:10	1
13C-1,2,3,7,8,9-HxCDF	74		40 - 135	01/27/23 09:36	02/13/23 14:10	1
13C-2,3,4,6,7,8-HxCDF	77		40 - 135	01/27/23 09:36	02/13/23 14:10	1
13C-1,2,3,4,7,8,9-HpCDF	70		40 - 135	01/27/23 09:36	02/13/23 14:10	1
13C-OCDF	55		40 - 135	01/27/23 09:36	02/13/23 14:10	1

Lab Sample ID: LCS 320-649887/2-A
Matrix: Water
Analysis Batch: 653394

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649887

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2,3,7,8-TCDD			200	196.9		pg/L		98	72 - 128		
2,3,7,8-TCDF			200	213.4		pg/L		107	67 - 135		
1,2,3,7,8-PeCDD			1000	963.3		pg/L		96	71 - 135		
1,2,3,7,8-PeCDF			1000	949.8		pg/L		95	70 - 133		
2,3,4,7,8-PeCDF			1000	981.7		pg/L		98	69 - 135		
1,2,3,4,7,8-HxCDD			1000	1011		pg/L		101	67 - 130		
1,2,3,6,7,8-HxCDD			1000	946.6		pg/L		95	61 - 144		
1,2,3,7,8,9-HxCDD			1000	996.1		pg/L		100	61 - 140		
1,2,3,4,7,8-HxCDF			1000	960.4		pg/L		96	69 - 140		
1,2,3,6,7,8-HxCDF			1000	987.6		pg/L		99	62 - 155		
2,3,4,6,7,8-HxCDF			1000	977.3		pg/L		98	70 - 146		
1,2,3,7,8,9-HxCDF			1000	955.9		pg/L		96	71 - 142		
1,2,3,4,6,7,8-HpCDD			1000	970.6		pg/L		97	71 - 134		
1,2,3,4,6,7,8-HpCDF			1000	999.7		pg/L		100	68 - 137		
1,2,3,4,7,8,9-HpCDF			1000	971.7		pg/L		97	74 - 134		
OCDD			2000	1922		pg/L		96	72 - 134		
OCDF			2000	2019		pg/L		101	65 - 143		

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	75		40 - 135
13C-2,3,7,8-TCDF	72		40 - 135
13C-1,2,3,7,8-PeCDD	75		40 - 135
13C-1,2,3,7,8-PeCDF	77		40 - 135
13C-1,2,3,6,7,8-HxCDD	84		40 - 135
13C-2,3,4,7,8-PeCDF	74		40 - 135
13C-1,2,3,4,7,8-HxCDD	70		40 - 135
13C-1,2,3,4,7,8-HxCDF	70		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	75		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	74		40 - 135
13C-1,2,3,6,7,8-HxCDF	82		40 - 135
13C-OCDD	74		40 - 135
13C-1,2,3,7,8,9-HxCDF	81		40 - 135

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-649887/2-A
Matrix: Water
Analysis Batch: 653394

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649887

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,4,6,7,8-HxCDF	85		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	77		40 - 135
13C-OCDF	74		40 - 135

Lab Sample ID: LCSD 320-649887/3-A
Matrix: Water
Analysis Batch: 653394

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649887

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			200	202.8		pg/L		101	72 - 128	3	20
2,3,7,8-TCDF			200	217.9		pg/L		109	67 - 135	2	20
1,2,3,7,8-PeCDD			1000	982.9		pg/L		98	71 - 135	2	20
1,2,3,7,8-PeCDF			1000	1004		pg/L		100	70 - 133	6	20
2,3,4,7,8-PeCDF			1000	1018		pg/L		102	69 - 135	4	20
1,2,3,4,7,8-HxCDD			1000	984.1		pg/L		98	67 - 130	3	20
1,2,3,6,7,8-HxCDD			1000	989.2		pg/L		99	61 - 144	4	20
1,2,3,7,8,9-HxCDD			1000	974.0		pg/L		97	61 - 140	2	20
1,2,3,4,7,8-HxCDF			1000	970.9		pg/L		97	69 - 140	1	20
1,2,3,6,7,8-HxCDF			1000	998.9		pg/L		100	62 - 155	1	20
2,3,4,6,7,8-HxCDF			1000	1002		pg/L		100	70 - 146	2	20
1,2,3,7,8,9-HxCDF			1000	975.2		pg/L		98	71 - 142	2	20
1,2,3,4,6,7,8-HpCDD			1000	998.1		pg/L		100	71 - 134	3	20
1,2,3,4,6,7,8-HpCDF			1000	1015		pg/L		102	68 - 137	2	20
1,2,3,4,7,8,9-HpCDF			1000	994.9		pg/L		99	74 - 134	2	20
OCDD			2000	2023		pg/L		101	72 - 134	5	20
OCDF			2000	2059		pg/L		103	65 - 143	2	20

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C-2,3,7,8-TCDD	75		40 - 135
13C-2,3,7,8-TCDF	73		40 - 135
13C-1,2,3,7,8-PeCDD	75		40 - 135
13C-1,2,3,7,8-PeCDF	76		40 - 135
13C-1,2,3,6,7,8-HxCDD	84		40 - 135
13C-2,3,4,7,8-PeCDF	77		40 - 135
13C-1,2,3,4,7,8-HxCDD	76		40 - 135
13C-1,2,3,4,7,8-HxCDF	74		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	74		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	75		40 - 135
13C-1,2,3,6,7,8-HxCDF	86		40 - 135
13C-OCDD	75		40 - 135
13C-1,2,3,7,8,9-HxCDF	81		40 - 135
13C-2,3,4,6,7,8-HxCDF	84		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	76		40 - 135
13C-OCDF	75		40 - 135

QC Association Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-2

Specialty Organics

Prep Batch: 649403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Total/NA	Water	8290	
570-123377-2	A2BMP0007S023	Total/NA	Water	8290	
570-123377-3	EVBMP0007S015	Total/NA	Water	8290	
570-123377-4	EVBMP0008S018	Total/NA	Water	8290	
MB 320-649403/1-A	Method Blank	Total/NA	Water	8290	
LCS 320-649403/2-A	Lab Control Sample	Total/NA	Water	8290	
LCSD 320-649403/3-A	Lab Control Sample Dup	Total/NA	Water	8290	

Prep Batch: 649887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-5	EVBMP0009S016	Total/NA	Water	8290	
MB 320-649887/1-A	Method Blank	Total/NA	Water	8290	
LCS 320-649887/2-A	Lab Control Sample	Total/NA	Water	8290	
LCSD 320-649887/3-A	Lab Control Sample Dup	Total/NA	Water	8290	

Analysis Batch: 653177

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Total/NA	Water	8290	649403
570-123377-2	A2BMP0007S023	Total/NA	Water	8290	649403
570-123377-3	EVBMP0007S015	Total/NA	Water	8290	649403
570-123377-4	EVBMP0008S018	Total/NA	Water	8290	649403
MB 320-649403/1-A	Method Blank	Total/NA	Water	8290	649403
LCS 320-649403/2-A	Lab Control Sample	Total/NA	Water	8290	649403
LCSD 320-649403/3-A	Lab Control Sample Dup	Total/NA	Water	8290	649403

Analysis Batch: 653394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-5	EVBMP0009S016	Total/NA	Water	8290	649887
MB 320-649887/1-A	Method Blank	Total/NA	Water	8290	649887
LCS 320-649887/2-A	Lab Control Sample	Total/NA	Water	8290	649887
LCSD 320-649887/3-A	Lab Control Sample Dup	Total/NA	Water	8290	649887

Geotechnical

Analysis Batch: 301048

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-123377-1	A2BMP0006S015	Total/NA	Water	D4464	
570-123377-2	A2BMP0007S023	Total/NA	Water	D4464	
570-123377-3	EVBMP0007S015	Total/NA	Water	D4464	
570-123377-4	EVBMP0008S018	Total/NA	Water	D4464	
570-123377-5	EVBMP0009S016	Total/NA	Water	D4464	
LCS 570-301048/16	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-301048/18	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-2

Client Sample ID: A2BMP0006S015

Lab Sample ID: 570-123377-1

Date Collected: 01/09/23 09:33

Matrix: Water

Date Received: 01/10/23 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1002 mL	20.0 uL	649403	01/26/23 06:40	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	653177	02/13/23 01:26	KSS	EET SAC
	Instrument ID: DFS 1									
Total/NA	Analysis	D4464		1			301048	02/02/23 18:41	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: A2BMP0007S023

Lab Sample ID: 570-123377-2

Date Collected: 01/09/23 09:43

Matrix: Water

Date Received: 01/10/23 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1025.7 mL	20.0 uL	649403	01/26/23 06:40	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	653177	02/13/23 02:14	KSS	EET SAC
	Instrument ID: DFS 1									
Total/NA	Analysis	D4464		1			301048	02/02/23 18:47	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0007S015

Lab Sample ID: 570-123377-3

Date Collected: 01/09/23 09:00

Matrix: Water

Date Received: 01/10/23 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			976.4 mL	20.0 uL	649403	01/26/23 06:40	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	653177	02/13/23 03:03	KSS	EET SAC
	Instrument ID: DFS 1									
Total/NA	Analysis	D4464		1			301048	02/02/23 18:56	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0008S018

Lab Sample ID: 570-123377-4

Date Collected: 01/09/23 09:16

Matrix: Water

Date Received: 01/10/23 18:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			971.3 mL	20.0 uL	649403	01/26/23 06:40	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	653177	02/13/23 03:51	KSS	EET SAC
	Instrument ID: DFS 1									
Total/NA	Analysis	D4464		1			301048	02/02/23 20:09	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-2

Client Sample ID: EVBMP0009S016

Date Collected: 01/09/23 09:10
Date Received: 01/10/23 18:00

Lab Sample ID: 570-123377-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1013.6 mL	20.0 uL	649887	01/27/23 09:36	CGB	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	653394	02/13/23 17:14	DB	EET SAC
	Instrument ID: 12D5									
Total/NA	Analysis	D4464		1			301048	02/02/23 20:18	SP9M	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc. Job ID: 570-123377-2
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
D4464		Water	Clay (less than 0.00391 mm)
D4464		Water	Coarse Sand (0.5mm to 1mm)
D4464		Water	Fine Sand (0.125 to 0.25mm)
D4464		Water	Gravel (greater than 2 mm)
D4464		Water	Medium Sand (0.25 to 0.5 mm)
D4464		Water	Silt (0.00391 to 0.0625mm)
D4464		Water	Total Silt and Clay (0 to 0.0626mm)
D4464		Water	Very Coarse Sand (1 to 2mm)
D4464		Water	Very Fine Sand (0.0625 to 0.125 mm)

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2897	01-22-24

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-2

Method	Method Description	Protocol	Laboratory
8290	Dioxins and Furans (HRGC/HRMS)	SW846	EET SAC
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
8290	Separatory Funnel (Liquid-Liquid) Extraction of Dioxins and Furans	SW846	EET SAC

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-123377-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-123377-1	A2BMP0006S015	Water	01/09/23 09:33	01/10/23 18:00
570-123377-2	A2BMP0007S023	Water	01/09/23 09:43	01/10/23 18:00
570-123377-3	EVBMP0007S015	Water	01/09/23 09:00	01/10/23 18:00
570-123377-4	EVBMP0008S018	Water	01/09/23 09:16	01/10/23 18:00
570-123377-5	EVBMP0009S016	Water	01/09/23 09:10	01/10/23 18:00

123372

Chain of Custody Record

COC Number: CALS01092301

JACOBS

1/9/2023 10 42 38 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1E	ASTMD4464	SM2540	SW8290/1613B
A2BMP0006S015	09-Jan-23 9 33	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu, Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4 C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
A2BMP0007S023	09-Jan-23 9 43	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

570-123377 Chain of Custody

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	Bryan Benson	01/09/23
Relinquished by		01/10/23 0940
Received by		1/10/23 0940
Relinquished by		1/10/23 1515
Received by	EC	1/10/23 1515
Relinquished by:	EC	1/10/23 1755

1/10/23 1755

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

2.2/2.2 1.7/1.7 1.9/1.9 SCII

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

123377

Chain of Custody Record

COC Number: CALS01092301

JACOBS

1/9/2023 10 42 39 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0007S015	09-Jan-23 9 00	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu, Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
EVBMP0008S018	09-Jan-23 9 16	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4 C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu, Pb, Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers.		6						

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	Bryan Benson	01/09/23 15-00
Relinquished by		01/10/23 0940
Received by		1/10/23 0940
Relinquished by		1/10/23 1515
Received by	EC	1/10/23 1515
Relinquished by:	EC	1/10/23 1755
		1/10/23 1755

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

123377

Chain of Custody Record

COC Number: CALS01092301

JACOBS

1/9/2023 10 42 39 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B																		
EVBMP0009S016	09-Jan-23 9 10	N	Water																											
Dioxins-17 congeners				4°C	☐	2	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Turbidity TSS				4°C	☐	1	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4°C	☐	1	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Cd Cu Pb Hg				HNO3 4°C	☐	1	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
				Total Containers:		6																								

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	Brian Benson	01/09/23 15:00
Relinquished by		01/10/23 09:47
Received by		1/10/23 0940
Relinquished by		1/10/23 1515
Received by	EC	1/10/23 1515
Relinquished by	EC	1/10/23 1755
		1/10/23 755

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-203939.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-123377-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/2/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
A2BMP0006S015 (570-123377-1)	1/9/23	09:33 Pacific		Water			X	2	
A2BMP0007S023 (570-123377-2)	1/9/23	09:43 Pacific		Water			X	2	
EVBMP0007S015 (570-123377-3)	1/9/23	09:00 Pacific		Water			X	2	
EVBMP0008S018 (570-123377-4)	1/9/23	09:16 Pacific		Water			X	2	
EVBMP0009S016 (570-123377-5)	1/9/23	09:10 Pacific		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature]	Date/Time: 01/12/23 13:15	Company: EC	Received by: [signature]	Date/Time: 1.13.23 905	Company: BGSAC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal		Cooler Temperature(s) °C and Other Remarks: 2.4L		

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc. Job Number: 570-123377-2

Login Number: 123377 **List Source: Eurofins Calscience**
List Number: 1
Creator: Thompson, Lori

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-123377-2

Login Number: 123377
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/13/23 02:43 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.6c 2.5c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

Generated 1/25/2023 8:47:55 AM

JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-124425-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
1/25/2023 8:47:55 AM

Authorized for release by
Lori Thompson, Project Manager I
Lori.Thompson@et.eurofinsus.com
(657)212-3035

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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-1

Qualifiers

Metals

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
H3	Sample was received and analyzed past holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124425-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-124425-1

Comments
No additional comments.

Receipt
The samples were received on 1/17/2023 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.2º C.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EVBMP0007S016 (570-124425-1), EVBMP0008S019 (570-124425-2) and EVBMP0009S017 (570-124425-3). The samples wer filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2130B: The following samples were received outside of holding time: EVBMP0008S019 (570-124425-2) and EVBMP0009S017 (570-124425-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-1

Client Sample ID: EVBMP0007S016 — Lab Sample ID: 570-124425-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.76	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.977	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.34	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Mercury	0.000243		0.000200	0.000124	mg/L	1		245.1	Total/NA
Mercury	0.000553	H	0.000200	0.000124	mg/L	1		245.1	Dissolved
Total Suspended Solids	5.00		2.00	1.66	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0008S019 — Lab Sample ID: 570-124425-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	2.15		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.182	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.92	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Mercury	0.000224		0.000200	0.000124	mg/L	1		245.1	Total/NA
Mercury	0.000929	H	0.000200	0.000124	mg/L	1		245.1	Dissolved
Turbidity	5.2	H H3	0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	17.8		1.67	1.38	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0009S017 — Lab Sample ID: 570-124425-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	1.99	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.174	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.72	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Mercury	0.000154	J	0.000200	0.000124	mg/L	1		245.1	Total/NA
Mercury	0.000573	H	0.000200	0.000124	mg/L	1		245.1	Dissolved
Turbidity	1.3	H H3	0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	9.60		1.00	0.829	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EVBMP0007S016
Date Collected: 01/14/23 11:29
Date Received: 01/17/23 18:25
Lab Sample ID: 570-124425-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/20/23 08:34	01/20/23 13:54	1
Copper	**1.76**	**J**	2.00	0.318	ug/L		01/20/23 08:34	01/20/23 13:54	1
Lead	**0.977**	**J**	1.00	0.118	ug/L		01/20/23 08:34	01/20/23 13:54	1

Client Sample ID: EVBMP0008S019
Date Collected: 01/14/23 10:42
Date Received: 01/17/23 18:25
Lab Sample ID: 570-124425-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/20/23 08:34	01/20/23 13:52	1
Copper	**2.15**		2.00	0.318	ug/L		01/20/23 08:34	01/20/23 13:52	1
Lead	**0.182**	**J**	1.00	0.118	ug/L		01/20/23 08:34	01/20/23 13:52	1

Client Sample ID: EVBMP0009S017
Date Collected: 01/14/23 11:14
Date Received: 01/17/23 18:25
Lab Sample ID: 570-124425-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/20/23 08:34	01/20/23 13:49	1
Copper	**1.99**	**J**	2.00	0.318	ug/L		01/20/23 08:34	01/20/23 13:49	1
Lead	**0.174**	**J**	1.00	0.118	ug/L		01/20/23 08:34	01/20/23 13:49	1

Client Sample Results

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EVBMP0007S016
Date Collected: 01/14/23 11:29
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/19/23 10:47	1
Copper	**1.34**	**J H**	2.00	0.318	ug/L			01/19/23 10:47	1
Lead	ND	H	1.00	0.118	ug/L			01/19/23 10:47	1

Client Sample ID: EVBMP0008S019
Date Collected: 01/14/23 10:42
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/19/23 10:50	1
Copper	**1.92**	**J H**	2.00	0.318	ug/L			01/19/23 10:50	1
Lead	ND	H	1.00	0.118	ug/L			01/19/23 10:50	1

Client Sample ID: EVBMP0009S017
Date Collected: 01/14/23 11:14
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			01/19/23 10:52	1
Copper	**1.72**	**J H**	2.00	0.318	ug/L			01/19/23 10:52	1
Lead	ND	H	1.00	0.118	ug/L			01/19/23 10:52	1

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: EVBMP0007S016
Date Collected: 01/14/23 11:29
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000243		0.000200	0.000124	mg/L		01/20/23 17:01	01/23/23 13:54	1

Client Sample ID: EVBMP0008S019
Date Collected: 01/14/23 10:42
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000224		0.000200	0.000124	mg/L		01/20/23 17:01	01/23/23 13:56	1

Client Sample ID: EVBMP0009S017
Date Collected: 01/14/23 11:14
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000154	J	0.000200	0.000124	mg/L		01/20/23 17:01	01/23/23 13:58	1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: EVBMP0007S016
Lab Sample ID: 570-124425-1
Date Collected: 01/14/23 11:29
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000553	H	0.000200	0.000124	mg/L		01/20/23 19:15	01/23/23 14:07	1

Client Sample ID: EVBMP0008S019
Lab Sample ID: 570-124425-2
Date Collected: 01/14/23 10:42
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000929	H	0.000200	0.000124	mg/L		01/20/23 19:15	01/23/23 14:16	1

Client Sample ID: EVBMP0009S017
Lab Sample ID: 570-124425-3
Date Collected: 01/14/23 11:14
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000573	H	0.000200	0.000124	mg/L		01/20/23 19:15	01/23/23 14:18	1

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-1

General Chemistry

Client Sample ID: EVBMP0007S016
Date Collected: 01/14/23 11:29
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	5.00		2.00	1.66	mg/L			01/18/23 17:50	1

Client Sample ID: EVBMP0008S019
Date Collected: 01/14/23 10:42
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	5.2	H H3	0.05	0.05	NTU			01/18/23 15:00	1
Total Suspended Solids (SM 2540D)	17.8		1.67	1.38	mg/L			01/18/23 17:50	1

Client Sample ID: EVBMP0009S017
Date Collected: 01/14/23 11:14
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	1.3	H H3	0.05	0.05	NTU			01/18/23 15:08	1
Total Suspended Solids (SM 2540D)	9.60		1.00	0.829	mg/L			01/20/23 11:38	1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-297319/1-A
Matrix: Water
Analysis Batch: 297473

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		01/20/23 08:34	01/20/23 13:28	1
Copper	ND		2.00	0.318	ug/L		01/20/23 08:34	01/20/23 13:28	1
Lead	ND		1.00	0.118	ug/L		01/20/23 08:34	01/20/23 13:28	1

Lab Sample ID: LCS 570-297319/2-A
Matrix: Water
Analysis Batch: 297473

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	82.59		ug/L		103	85 - 115
Copper	80.0	85.63		ug/L		107	85 - 115
Lead	80.0	82.18		ug/L		103	85 - 115

Lab Sample ID: LCSD 570-297319/3-A
Matrix: Water
Analysis Batch: 297473

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 297319

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	82.04		ug/L		103	85 - 115	1	20
Copper	80.0	86.14		ug/L		108	85 - 115	1	20
Lead	80.0	83.99		ug/L		105	85 - 115	2	20

Lab Sample ID: MB 570-297012/1-A
Matrix: Water
Analysis Batch: 297072

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L			01/19/23 10:57	1
Copper	ND		2.00	0.318	ug/L			01/19/23 10:57	1
Lead	ND		1.00	0.118	ug/L			01/19/23 10:57	1

Lab Sample ID: LCS 570-297012/2-A
Matrix: Water
Analysis Batch: 297072

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	74.15		ug/L		93	85 - 115
Copper	80.0	74.93		ug/L		94	85 - 115
Lead	80.0	74.13		ug/L		93	85 - 115

Lab Sample ID: LCSD 570-297012/3-A
Matrix: Water
Analysis Batch: 297072

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	73.69		ug/L		92	85 - 115	1	20
Copper	80.0	73.89		ug/L		92	85 - 115	1	20
Lead	80.0	74.07		ug/L		93	85 - 115	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-297518/1-A
Matrix: Water
Analysis Batch: 297915

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 297518

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/20/23 17:01	01/23/23 14:22	1

Lab Sample ID: LCS 570-297518/2-A
Matrix: Water
Analysis Batch: 297915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 297518

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.008108		mg/L		101	85 - 115

Lab Sample ID: LCSD 570-297518/3-A
Matrix: Water
Analysis Batch: 297915

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 297518

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.007966		mg/L		100	85 - 115	2	10

Lab Sample ID: MB 570-297542/1-B
Matrix: Water
Analysis Batch: 297915

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 297543

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		01/20/23 19:15	01/23/23 14:01	1

Lab Sample ID: LCS 570-297542/2-B
Matrix: Water
Analysis Batch: 297915

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 297543

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.007731		mg/L		97	85 - 115

Lab Sample ID: LCSD 570-297542/3-B
Matrix: Water
Analysis Batch: 297915

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 297543

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.007791		mg/L		97	85 - 115	1	10

Lab Sample ID: 570-124425-1 MS
Matrix: Water
Analysis Batch: 297915

Client Sample ID: EVBMP0007S016
Prep Type: Dissolved
Prep Batch: 297543

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.000553	H	0.00800	0.008137		mg/L		95	85 - 115

Lab Sample ID: 570-124425-1 MSD
Matrix: Water
Analysis Batch: 297915

Client Sample ID: EVBMP0007S016
Prep Type: Dissolved
Prep Batch: 297543

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.000553	H	0.00800	0.008046		mg/L		94	85 - 115	1	10

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-296821/1
Matrix: Water
Analysis Batch: 296821

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-296821/2
Matrix: Water
Analysis Batch: 296821

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-296821/3
Matrix: Water
Analysis Batch: 296821

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-296880/1
Matrix: Water
Analysis Batch: 296880

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			01/18/23 17:50	1

Lab Sample ID: LCS 570-296880/2
Matrix: Water
Analysis Batch: 296880

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	88.00		mg/L		88	77 - 116

Lab Sample ID: LCSD 570-296880/3
Matrix: Water
Analysis Batch: 296880

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	88.00		mg/L		88	77 - 116	0	10

Lab Sample ID: MB 570-297389/1
Matrix: Water
Analysis Batch: 297389

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			01/20/23 11:38	1

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCS 570-297389/2
Matrix: Water
Analysis Batch: 297389

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	98.00		mg/L		98	77 - 116		

Lab Sample ID: LCSD 570-297389/3
Matrix: Water
Analysis Batch: 297389

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	99.00		mg/L		99	77 - 116	1	10

Metals

Filtration Batch: 297012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Dissolved	Water	Filtration	
570-124425-2	EVBMP0008S019	Dissolved	Water	Filtration	
570-124425-3	EVBMP0009S017	Dissolved	Water	Filtration	
MB 570-297012/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-297012/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-297012/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 297071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Dissolved	Water	200.8	297012
570-124425-2	EVBMP0008S019	Dissolved	Water	200.8	297012
570-124425-3	EVBMP0009S017	Dissolved	Water	200.8	297012

Analysis Batch: 297072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-297012/1-A	Method Blank	Dissolved	Water	200.8	297012
LCS 570-297012/2-A	Lab Control Sample	Dissolved	Water	200.8	297012
LCSD 570-297012/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	297012

Prep Batch: 297319

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Total Recoverable	Water	200.8	
570-124425-2	EVBMP0008S019	Total Recoverable	Water	200.8	
570-124425-3	EVBMP0009S017	Total Recoverable	Water	200.8	
MB 570-297319/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-297319/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-297319/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Analysis Batch: 297471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Total Recoverable	Water	200.8	297319
570-124425-2	EVBMP0008S019	Total Recoverable	Water	200.8	297319
570-124425-3	EVBMP0009S017	Total Recoverable	Water	200.8	297319

Analysis Batch: 297473

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-297319/1-A	Method Blank	Total Recoverable	Water	200.8	297319
LCS 570-297319/2-A	Lab Control Sample	Total Recoverable	Water	200.8	297319
LCSD 570-297319/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	297319

Prep Batch: 297518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Total/NA	Water	245.1	
570-124425-2	EVBMP0008S019	Total/NA	Water	245.1	
570-124425-3	EVBMP0009S017	Total/NA	Water	245.1	
MB 570-297518/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-297518/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-297518/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Metals

Filtration Batch: 297542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Dissolved	Water	Filtration	
570-124425-2	EVBMP0008S019	Dissolved	Water	Filtration	
570-124425-3	EVBMP0009S017	Dissolved	Water	Filtration	
MB 570-297542/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-297542/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-297542/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-124425-1 MS	EVBMP0007S016	Dissolved	Water	Filtration	
570-124425-1 MSD	EVBMP0007S016	Dissolved	Water	Filtration	

Prep Batch: 297543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Dissolved	Water	245.1	297542
570-124425-2	EVBMP0008S019	Dissolved	Water	245.1	297542
570-124425-3	EVBMP0009S017	Dissolved	Water	245.1	297542
MB 570-297542/1-B	Method Blank	Dissolved	Water	245.1	297542
LCS 570-297542/2-B	Lab Control Sample	Dissolved	Water	245.1	297542
LCSD 570-297542/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	297542
570-124425-1 MS	EVBMP0007S016	Dissolved	Water	245.1	297542
570-124425-1 MSD	EVBMP0007S016	Dissolved	Water	245.1	297542

Analysis Batch: 297915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Dissolved	Water	245.1	297543
570-124425-1	EVBMP0007S016	Total/NA	Water	245.1	297518
570-124425-2	EVBMP0008S019	Dissolved	Water	245.1	297543
570-124425-2	EVBMP0008S019	Total/NA	Water	245.1	297518
570-124425-3	EVBMP0009S017	Dissolved	Water	245.1	297543
570-124425-3	EVBMP0009S017	Total/NA	Water	245.1	297518
MB 570-297518/1-A	Method Blank	Total/NA	Water	245.1	297518
MB 570-297542/1-B	Method Blank	Dissolved	Water	245.1	297543
LCS 570-297518/2-A	Lab Control Sample	Total/NA	Water	245.1	297518
LCS 570-297542/2-B	Lab Control Sample	Dissolved	Water	245.1	297543
LCSD 570-297518/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	297518
LCSD 570-297542/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	297543
570-124425-1 MS	EVBMP0007S016	Dissolved	Water	245.1	297543
570-124425-1 MSD	EVBMP0007S016	Dissolved	Water	245.1	297543

General Chemistry

Analysis Batch: 296821

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-2	EVBMP0008S019	Total/NA	Water	SM 2130B	
570-124425-3	EVBMP0009S017	Total/NA	Water	SM 2130B	
LCSSRM 570-296821/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-296821/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-296821/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 296880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Total/NA	Water	SM 2540D	
570-124425-2	EVBMP0008S019	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 296880 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-296880/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-296880/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-296880/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 297389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-3	EVBMP0009S017	Total/NA	Water	SM 2540D	
MB 570-297389/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-297389/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-297389/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-1

Client Sample ID: EVBMP0007S016

Date Collected: 01/14/23 11:29
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	297012	01/19/23 09:39	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			297071	01/19/23 10:47	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	297319	01/20/23 08:34	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297471	01/20/23 13:54	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	297542	01/20/23 18:49	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	297543	01/20/23 19:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			297915	01/23/23 14:07	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	297518	01/20/23 17:01	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			297915	01/23/23 13:54	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2540D		1	500 mL	1000 mL	296880	01/18/23 17:50	BDH9	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0008S019

Date Collected: 01/14/23 10:42
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	297012	01/19/23 09:39	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			297071	01/19/23 10:50	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	297319	01/20/23 08:34	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297471	01/20/23 13:52	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	297542	01/20/23 18:49	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	297543	01/20/23 19:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			297915	01/23/23 14:16	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	297518	01/20/23 17:01	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			297915	01/23/23 13:56	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			296821	01/18/23 15:00	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	600 mL	1000 mL	296880	01/18/23 17:50	BDH9	EET CAL 4
	Instrument ID: NOEQUIP									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-1

Client Sample ID: EVBMP0009S017

Date Collected: 01/14/23 11:14
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	Filtration			50 mL	50 mL	297012	01/19/23 09:39	ECX6	EET CAL 4
Dissolved	Analysis	200.8		1			297071	01/19/23 10:52	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	297319	01/20/23 08:34	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			297471	01/20/23 13:49	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	297542	01/20/23 18:49	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	297543	01/20/23 19:15	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			297915	01/23/23 14:18	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	297518	01/20/23 17:01	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			297915	01/23/23 13:58	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			296821	01/18/23 15:08	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	297389	01/20/23 11:38	UWCT	EET CAL 4
	Instrument ID: BAL62									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc.
Job ID: 570-124425-1
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8		Water	Cadmium
200.8		Water	Copper
200.8		Water	Lead
200.8	200.8	Water	Cadmium
200.8	200.8	Water	Copper
200.8	200.8	Water	Lead
245.1	245.1	Water	Mercury
SM 2130B		Water	Turbidity

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-1

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124425-1	EVBMP0007S016	Water	01/14/23 11:29	01/17/23 18:25
570-124425-2	EVBMP0008S019	Water	01/14/23 10:42	01/17/23 18:25
570-124425-3	EVBMP0009S017	Water	01/14/23 11:14	01/17/23 18:25

124425

Chain of Custody Record

COC Number: CALS01142301

JACOBS

1/17/2023 10:33 45 AM

Project Name	SSFL
Project	CJ042 Stormwater PO 148015891
Location	Santa Susana Field Lab
Project Number	D3377900
Task Order	42
PO Number	148015891
Turnaround Time	10 Days

Project Manager
Randy Dean

Sample Manager

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0007S016	14-Jan-23 11 29	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb, Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
EVBMP0008S019	14-Jan-23 10 42	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4'C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu, Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

570-124425 Chain of Custody

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN BENSON	1/14/23 1130
Relinquished by	BRYA BENSON	1/17/23 1120
Received by		1/17/23 1510
Relinquished by	EL	1/17/23 1825
Received by	EL	1/17/23 1835

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** 1.2/1.2 Scli

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

Chain of Custody Record

COC Number: CALS01142301

JACOBS

1/17/2023 10 33 46 AM

Project Name SSFL
Project CJ042 Stormwater PO 148015891
Location Santa Susana Field Lab
Project Number D3377900
Task Order 42
PO Number 148015891
Turnaround Time 10 Days

Project Manager Randy Dean
Sample Manager

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B																		
EVBMP0009S017	14-Jan-23 11 14	N	Water																											
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Turbidity TSS				4'C	☐	1	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
LAB FILTER - Dissolved Cd Cu, Pb Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Cd Cu Pb, Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
				Total Containers:		6																								

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	BRYAN DENSON	1/19/23 1130
Relinquished by	BRYAN DENSON	1/17/23 1120
Received by	EC	1/17/23 1510
Relinquished by	EC	1/17/23 1825
Received by	EC	1/17/23 1825

Shipping Details
Shipment Method: FedEx
Airbill No:
Lab Name: Eurofins/Calscience
Lab Phone: (714) 895-5494
On Ice: yes / no **Cooler Temp** _____

ATTN:
Sample Custody
and
Lon Thompson

Special Instructions:
See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-124425-1

Login Number: 124425
List Number: 1
Creator: Thompson, Lori

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

Generated 2/15/2023 1:28:43 PM

JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-124425-2

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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2/15/2023 1:28:43 PM

Authorized for release by
Lori Thompson, Project Manager I
Lori.Thompson@et.eurofinsus.com
(657)212-3035

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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-2

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-124425-2

Laboratory: Eurofins Calscience

Narrative

CASE NARRATIVE

Client: Jacobs Engineering Group, Inc.

Project: NASA SSFL CJ042 Stormwater

Report Number: 570-124425-2

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 1/17/2023 at 6:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2 degrees Celsius of the required temperature or method specified range. For samples with a specified temperature of 4 degrees Celsius, samples with a temperature ranging from just above freezing temperature of water to 6 degrees Celsius shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

DIOXINS AND FURANS (HRGC/HRMS)

Samples EVBMP0007S016 (570-124425-1), EVBMP0008S019 (570-124425-2) and EVBMP0009S017 (570-124425-3) were analyzed for Dioxins in accordance with EPA SW-846 Method 8290. The samples were prepared on 01/27/2023 and analyzed on 02/13/2023.

Several analytes were detected in method blank MB 320-649887/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PARTICLE SIZE

Samples EVBMP0007S016 (570-124425-1), EVBMP0008S019 (570-124425-2) and EVBMP0009S017 (570-124425-3) were analyzed for Particle Size in accordance with ASTM D 4464. The samples were analyzed on 02/04/2023.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-2

Client Sample ID: EVBMP0007S016 — Lab Sample ID: 570-124425-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	2.0	J q B	49	0.30	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDF	0.47	J B	49	0.29	pg/L	1		8290	Total/NA
2,3,4,6,7,8-HxCDF	0.37	J B	49	0.28	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.52	J q B	49	0.31	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	3.2	J q B	49	0.30	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.6	J q B	49	0.22	pg/L	1		8290	Total/NA
OCDD	36	J B	98	0.52	pg/L	1		8290	Total/NA
OCDF	3.3	J B	98	0.57	pg/L	1		8290	Total/NA
Clay (less than 0.00391 mm)	8.49		0.01	0.01	%	1		D4464	Total/NA
Silt (0.00391 to 0.0625mm)	91.05		0.01	0.01	%	1		D4464	Total/NA
Total Silt and Clay (0 to 0.0626mm)	99.54		0.01	0.01	%	1		D4464	Total/NA
Very Fine Sand (0.0625 to 0.125 mm)	0.46		0.01	0.01	%	1		D4464	Total/NA

Client Sample ID: EVBMP0008S019 — Lab Sample ID: 570-124425-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	2.0	J B	50	0.30	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	0.46	J q B	50	0.29	pg/L	1		8290	Total/NA
2,3,4,6,7,8-HxCDF	0.35	J B	50	0.21	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.30	J q B	50	0.24	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	4.0	J B	50	0.34	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.5	J B	50	0.17	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	0.32	J q B	50	0.19	pg/L	1		8290	Total/NA
OCDD	46	J B	100	1.3	pg/L	1		8290	Total/NA
OCDF	4.3	J B	100	0.70	pg/L	1		8290	Total/NA

Client Sample ID: EVBMP0009S017 — Lab Sample ID: 570-124425-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	1.7	J q B	48	0.32	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	0.82	J B	48	0.30	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	0.41	J q B	48	0.28	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	37	J B	48	1.1	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	6.4	J B	48	0.42	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	0.62	J q B	48	0.47	pg/L	1		8290	Total/NA
OCDD	860	B	97	6.2	pg/L	1		8290	Total/NA
OCDF	44	J B	97	1.1	pg/L	1		8290	Total/NA

This Detection Summary does not include radiochemical test results.

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EVBMP0007S016
Lab Sample ID: 570-124425-1
Date Collected: 01/14/23 11:29
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.8	0.89	pg/L		01/27/23 09:36	02/13/23 18:01	1
2,3,7,8-TCDF	ND		9.8	0.45	pg/L		01/27/23 09:36	02/13/23 18:01	1
1,2,3,7,8-PeCDD	ND		49	0.48	pg/L		01/27/23 09:36	02/13/23 18:01	1
1,2,3,7,8-PeCDF	ND		49	0.35	pg/L		01/27/23 09:36	02/13/23 18:01	1
2,3,4,7,8-PeCDF	ND		49	0.39	pg/L		01/27/23 09:36	02/13/23 18:01	1
1,2,3,4,7,8-HxCDD	**2.0**	**J q B**	49	0.30	pg/L		01/27/23 09:36	02/13/23 18:01	1
1,2,3,6,7,8-HxCDD	ND		49	0.30	pg/L		01/27/23 09:36	02/13/23 18:01	1
1,2,3,7,8,9-HxCDD	ND		49	0.26	pg/L		01/27/23 09:36	02/13/23 18:01	1
1,2,3,4,7,8-HxCDF	**0.47**	**J B**	49	0.29	pg/L		01/27/23 09:36	02/13/23 18:01	1
1,2,3,6,7,8-HxCDF	ND		49	0.27	pg/L		01/27/23 09:36	02/13/23 18:01	1
2,3,4,6,7,8-HxCDF	**0.37**	**J B**	49	0.28	pg/L		01/27/23 09:36	02/13/23 18:01	1
1,2,3,7,8,9-HxCDF	**0.52**	**J q B**	49	0.31	pg/L		01/27/23 09:36	02/13/23 18:01	1
1,2,3,4,6,7,8-HpCDD	**3.2**	**J q B**	49	0.30	pg/L		01/27/23 09:36	02/13/23 18:01	1
1,2,3,4,6,7,8-HpCDF	**1.6**	**J q B**	49	0.22	pg/L		01/27/23 09:36	02/13/23 18:01	1
1,2,3,4,7,8,9-HpCDF	ND		49	0.26	pg/L		01/27/23 09:36	02/13/23 18:01	1
OCDD	**36**	**J B**	98	0.52	pg/L		01/27/23 09:36	02/13/23 18:01	1
OCDF	**3.3**	**J B**	98	0.57	pg/L		01/27/23 09:36	02/13/23 18:01	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*79*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-2,3,7,8-TCDF	*76*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-1,2,3,7,8-PeCDD	*78*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-1,2,3,7,8-PeCDF	*80*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-1,2,3,6,7,8-HxCDD	*89*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-2,3,4,7,8-PeCDF	*80*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-1,2,3,4,7,8-HxCDF	*76*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*81*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*81*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-1,2,3,6,7,8-HxCDF	*91*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-OCDD	*80*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-1,2,3,7,8,9-HxCDF	*87*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-2,3,4,6,7,8-HxCDF	*88*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*83*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*
13C-OCDF	*79*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:01*	*1*

Client Sample ID: EVBMP0008S019
Lab Sample ID: 570-124425-2
Date Collected: 01/14/23 10:42
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.99	pg/L		01/27/23 09:36	02/13/23 18:47	1
2,3,7,8-TCDF	ND		10	0.39	pg/L		01/27/23 09:36	02/13/23 18:47	1
1,2,3,7,8-PeCDD	ND		50	0.58	pg/L		01/27/23 09:36	02/13/23 18:47	1
1,2,3,7,8-PeCDF	ND		50	0.34	pg/L		01/27/23 09:36	02/13/23 18:47	1
2,3,4,7,8-PeCDF	ND		50	0.39	pg/L		01/27/23 09:36	02/13/23 18:47	1
1,2,3,4,7,8-HxCDD	**2.0**	**J B**	50	0.30	pg/L		01/27/23 09:36	02/13/23 18:47	1
1,2,3,6,7,8-HxCDD	**0.46**	**J q B**	50	0.29	pg/L		01/27/23 09:36	02/13/23 18:47	1
1,2,3,7,8,9-HxCDD	ND		50	0.26	pg/L		01/27/23 09:36	02/13/23 18:47	1
1,2,3,4,7,8-HxCDF	ND		50	0.23	pg/L		01/27/23 09:36	02/13/23 18:47	1
1,2,3,6,7,8-HxCDF	ND		50	0.22	pg/L		01/27/23 09:36	02/13/23 18:47	1

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0008S019
Lab Sample ID: 570-124425-2
Date Collected: 01/14/23 10:42
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,6,7,8-HxCDF	0.35	J B	50	0.21	pg/L		01/27/23 09:36	02/13/23 18:47	1
1,2,3,7,8,9-HxCDF	0.30	J q B	50	0.24	pg/L		01/27/23 09:36	02/13/23 18:47	1
1,2,3,4,6,7,8-HpCDD	4.0	J B	50	0.34	pg/L		01/27/23 09:36	02/13/23 18:47	1
1,2,3,4,6,7,8-HpCDF	1.5	J B	50	0.17	pg/L		01/27/23 09:36	02/13/23 18:47	1
1,2,3,4,7,8,9-HpCDF	0.32	J q B	50	0.19	pg/L		01/27/23 09:36	02/13/23 18:47	1
OCDD	46	J B	100	1.3	pg/L		01/27/23 09:36	02/13/23 18:47	1
OCDF	4.3	J B	100	0.70	pg/L		01/27/23 09:36	02/13/23 18:47	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*78*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-2,3,7,8-TCDF	*75*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-1,2,3,7,8-PeCDD	*76*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-1,2,3,7,8-PeCDF	*78*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-1,2,3,6,7,8-HxCDD	*82*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-2,3,4,7,8-PeCDF	*77*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-1,2,3,4,7,8-HxCDD	*77*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-1,2,3,4,7,8-HxCDF	*72*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*78*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*77*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-1,2,3,6,7,8-HxCDF	*85*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-OCDD	*77*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-1,2,3,7,8,9-HxCDF	*83*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-2,3,4,6,7,8-HxCDF	*86*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*
13C-OCDF	*77*		*40 - 135*	*01/27/23 09:36*	*02/13/23 18:47*	*1*

Client Sample ID: EVBMP0009S017
Lab Sample ID: 570-124425-3
Date Collected: 01/14/23 11:14
Matrix: Water
Date Received: 01/17/23 18:25

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.7	0.92	pg/L		01/27/23 09:36	02/13/23 19:34	1
2,3,7,8-TCDF	ND		9.7	0.39	pg/L		01/27/23 09:36	02/13/23 19:34	1
1,2,3,7,8-PeCDD	ND		48	0.39	pg/L		01/27/23 09:36	02/13/23 19:34	1
1,2,3,7,8-PeCDF	ND		48	0.32	pg/L		01/27/23 09:36	02/13/23 19:34	1
2,3,4,7,8-PeCDF	ND		48	0.38	pg/L		01/27/23 09:36	02/13/23 19:34	1
1,2,3,4,7,8-HxCDD	1.7	J q B	48	0.32	pg/L		01/27/23 09:36	02/13/23 19:34	1
1,2,3,6,7,8-HxCDD	0.82	J B	48	0.30	pg/L		01/27/23 09:36	02/13/23 19:34	1
1,2,3,7,8,9-HxCDD	0.41	J q B	48	0.28	pg/L		01/27/23 09:36	02/13/23 19:34	1
1,2,3,4,7,8-HxCDF	ND		48	0.26	pg/L		01/27/23 09:36	02/13/23 19:34	1
1,2,3,6,7,8-HxCDF	ND		48	0.24	pg/L		01/27/23 09:36	02/13/23 19:34	1
2,3,4,6,7,8-HxCDF	ND		48	0.22	pg/L		01/27/23 09:36	02/13/23 19:34	1
1,2,3,7,8,9-HxCDF	ND		48	0.24	pg/L		01/27/23 09:36	02/13/23 19:34	1
1,2,3,4,6,7,8-HpCDD	37	J B	48	1.1	pg/L		01/27/23 09:36	02/13/23 19:34	1
1,2,3,4,6,7,8-HpCDF	6.4	J B	48	0.42	pg/L		01/27/23 09:36	02/13/23 19:34	1
1,2,3,4,7,8,9-HpCDF	0.62	J q B	48	0.47	pg/L		01/27/23 09:36	02/13/23 19:34	1
OCDD	860	B	97	6.2	pg/L		01/27/23 09:36	02/13/23 19:34	1
OCDF	44	J B	97	1.1	pg/L		01/27/23 09:36	02/13/23 19:34	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*80*		*40 - 135*	*01/27/23 09:36*	*02/13/23 19:34*	*1*
13C-2,3,7,8-TCDF	*78*		*40 - 135*	*01/27/23 09:36*	*02/13/23 19:34*	*1*

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0009S017
Lab Sample ID: 570-124425-3
Date Collected: 01/14/23 11:14
Matrix: Water
Date Received: 01/17/23 18:25

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	79		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-1,2,3,7,8-PeCDF	81		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-1,2,3,6,7,8-HxCDD	83		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-2,3,4,7,8-PeCDF	76		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-1,2,3,4,7,8-HxCDD	69		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-1,2,3,4,7,8-HxCDF	69		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-1,2,3,4,6,7,8-HpCDD	81		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-1,2,3,4,6,7,8-HpCDF	77		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-1,2,3,6,7,8-HxCDF	82		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-OCDD	81		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-1,2,3,7,8,9-HxCDF	87		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-2,3,4,6,7,8-HxCDF	88		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-1,2,3,4,7,8,9-HpCDF	83		40 - 135	01/27/23 09:36	02/13/23 19:34	1
13C-OCDF	80		40 - 135	01/27/23 09:36	02/13/23 19:34	1

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-2

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EVBMP0007S016
Date Collected: 01/14/23 11:29
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	**8.49**		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	**91.05**		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	**99.54**		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	**0.46**		0.01	0.01	%			02/04/23 13:34	1

Client Sample ID: EVBMP0008S019
Date Collected: 01/14/23 10:42
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/04/23 13:34	1

Client Sample ID: EVBMP0009S017
Date Collected: 01/14/23 11:14
Date Received: 01/17/23 18:25

Lab Sample ID: 570-124425-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			02/04/23 13:34	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			02/04/23 13:34	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	01/14/23
Date Received:	01/17/23
Work Order No:	570-124425
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0009S017		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

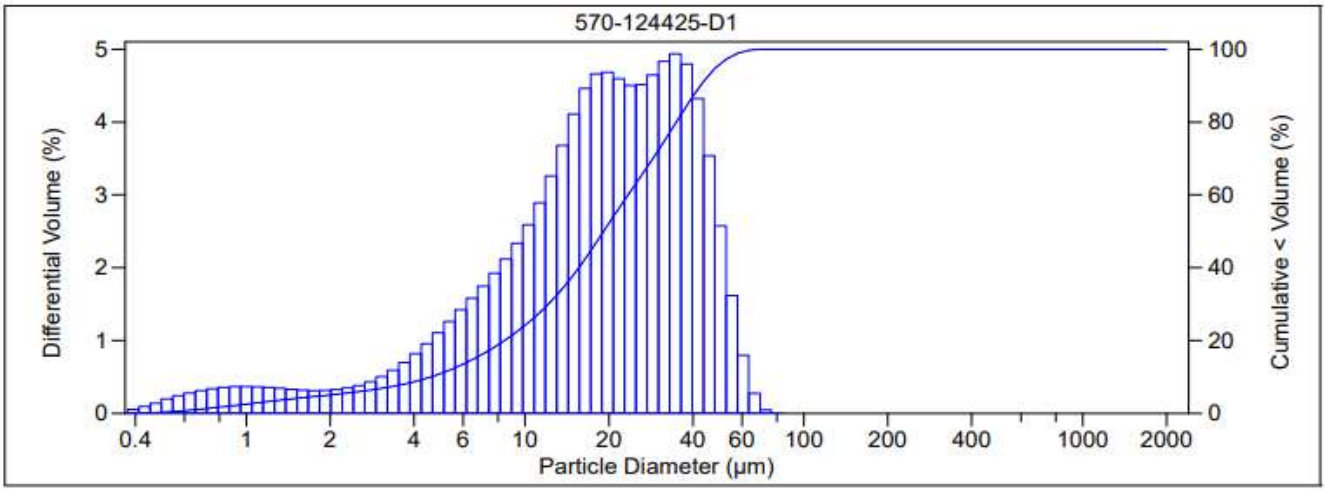
Jacobs Engineering Group, Inc.

Date Sampled:	01/14/23
Date Received:	01/17/23
Work Order No:	570-124425
Date Analyzed:	02/03/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0007S016		N/A	0.022

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.46	91.05	8.49	99.54



PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	01/14/23
Date Received:	01/17/23
Work Order No:	570-124425
Date Analyzed:	02/03/23
Method:	ASTM D4464M

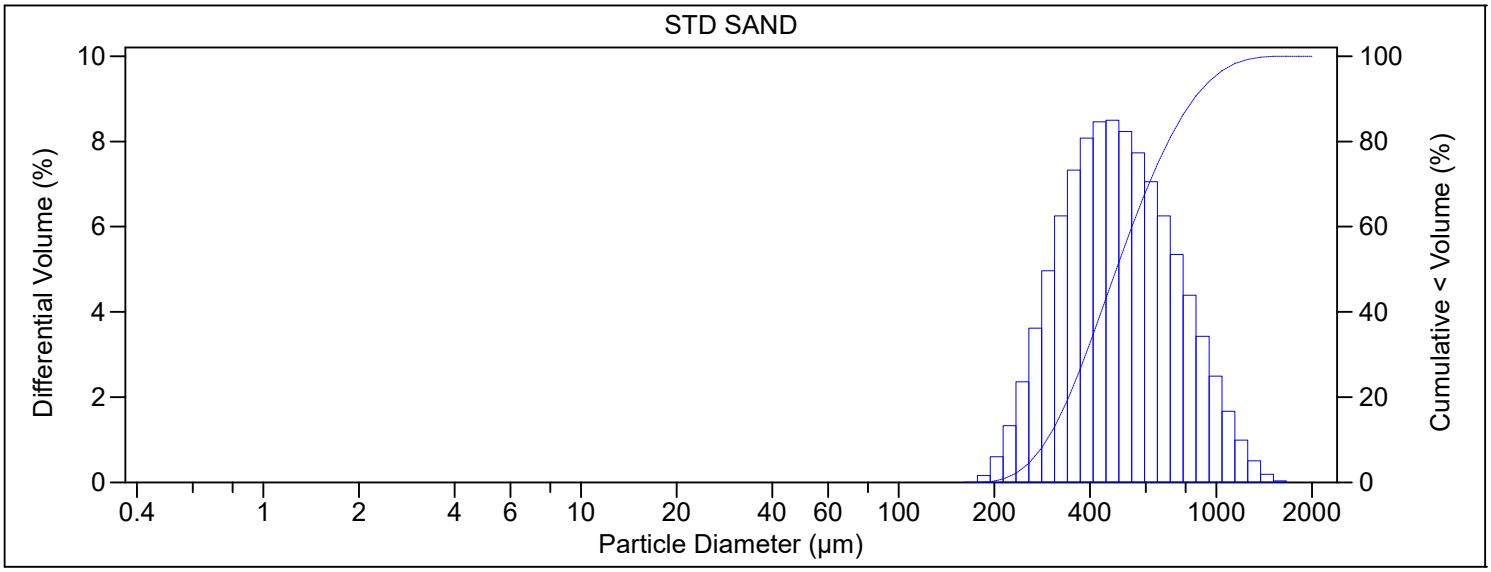
Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0008S019		N/A	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

File name:	C:\LS13320\STD SAND_ 3 Feb 2023_19.52.20.$ls		
	STD SAND_ 3 Feb 2023_19.52.20.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	22		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	19:51 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 3 Feb 2023_19.52.20.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	534.6 µm	S.D.:	224.4 µm
Median:	485.0 µm	Variance:	50358 µm^2
Mean/Median ratio:	1.102	Skewness:	1.068 Right skewed
Mode:	471.1 µm	Kurtosis:	1.067 Leptokurtic

d_{10}: 292.7 µm d_{50}: 485.0 µm d_{90}: 851.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.02	Median:	1.04	Deviation:	0.60
Skewness:	-0.06	Kurtosis:	0.93		

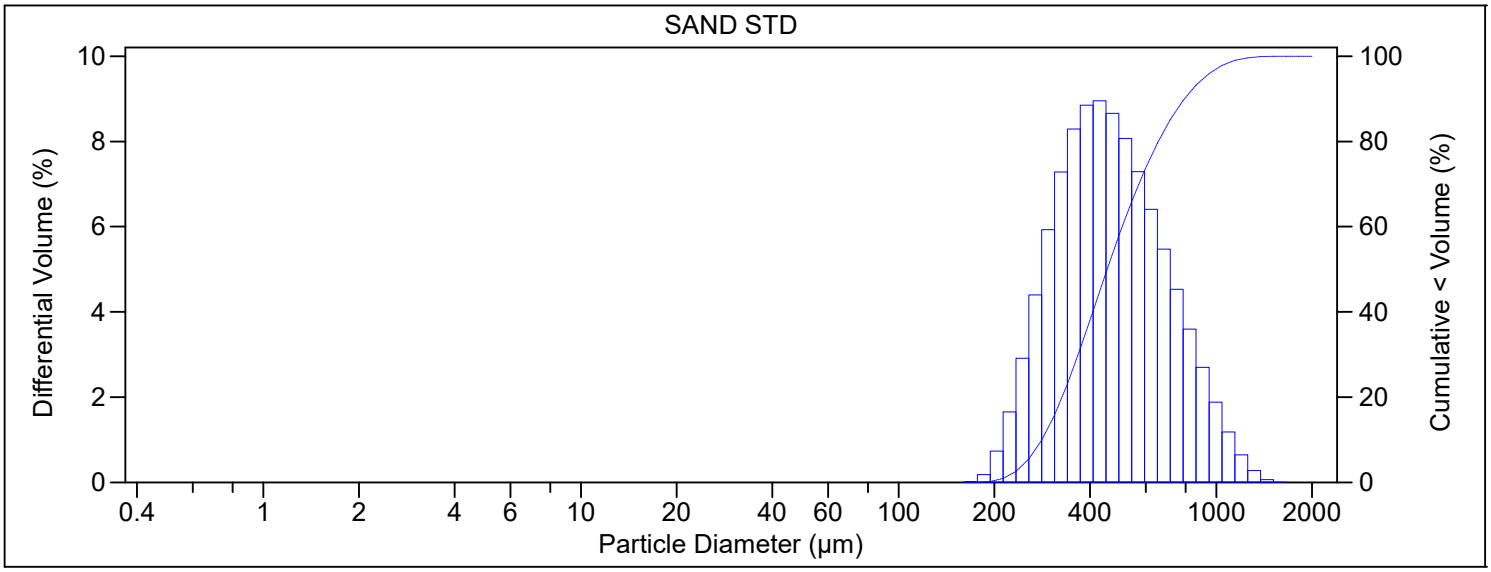
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
260.7 µm	323.9 µm	365.7 µm	434.7 µm	485.0 µm	656.2 µm	756.9 µm	981.3 µm

Particle Diameter µm	STD SAND_ 3 Feb 2023 _19.52.20 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	3.75
250	49.0
500	42.8
1000	4.50
2000	

STD SAND_ 3 Feb 2023_19.52.20.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.99
0.412	0	22.73	0	1255	0.51
0.452	0	24.95	0	1377	0.19
0.496	0	27.39	0	1512	0.034
0.545	0	30.07	0	1660	0.0013
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.011		
3.206	0	176.9	0.16		
3.519	0	194.2	0.60		
3.863	0	213.2	1.33		
4.241	0	234.1	2.36		
4.656	0	256.9	3.62		
5.111	0	282.1	4.97		
5.611	0	309.6	6.26		
6.159	0	339.9	7.33		
6.761	0	373.1	8.07		
7.422	0	409.6	8.46		
8.148	0	449.7	8.50		
8.944	0	493.6	8.23		
9.819	0	541.9	7.73		
10.78	0	594.9	7.06		
11.83	0	653.0	6.25		
12.99	0	716.9	5.35		
14.26	0	786.9	4.39		
15.65	0	863.9	3.43		
17.18	0	948.3	2.50		
18.86	0	1041	1.67		

File name:	C:\LS13320\SAND STD_ 3 Feb 2023_20.33.47.$ls		
	SAND STD_ 3 Feb 2023_20.33.47.$ls		
File ID:	SAND STD		
Sample ID:	SAND STD		
Operator:	C6FB		
Run number:	24		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986947		
Optical model:	Fraunhofer.rf780d		
Residual:	0.60%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:32 3 Feb 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) SAND STD_ 3 Feb 2023_20.33.47.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	501.8 µm	S.D.:	207.4 µm
Median:	453.7 µm	Variance:	42999 µm^2
Mean/Median ratio:	1.106	Skewness:	1.134 Right skewed
Mode:	429.2 µm	Kurtosis:	1.262 Leptokurtic

d_{10}: 282.5 µm d_{50}: 453.7 µm d_{90}: 794.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.11	Median:	1.14	Deviation:	0.58
Skewness:	-0.08	Kurtosis:	0.94		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
253.0 µm	310.4 µm	347.5 µm	408.6 µm	453.7 µm	611.0 µm	703.9 µm	919.1 µm

Particle Diameter µm	SAND STD_ 3 Feb 2023 _20.33.47 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	4.62
250	54.3
500	38.1
1000	3.02
2000	

SAND STD_ 3 Feb 2023_20.33.47.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.65
0.412	0	22.73	0	1255	0.28
0.452	0	24.95	0	1377	0.068
0.496	0	27.39	0	1512	0.0041
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.012		
3.206	0	176.9	0.19		
3.519	0	194.2	0.74		
3.863	0	213.2	1.65		
4.241	0	234.1	2.91		
4.656	0	256.9	4.40		
5.111	0	282.1	5.93		
5.611	0	309.6	7.28		
6.159	0	339.9	8.29		
6.761	0	373.1	8.85		
7.422	0	409.6	8.95		
8.148	0	449.7	8.66		
8.944	0	493.6	8.07		
9.819	0	541.9	7.29		
10.78	0	594.9	6.41		
11.83	0	653.0	5.48		
12.99	0	716.9	4.53		
14.26	0	786.9	3.59		
15.65	0	863.9	2.70		
17.18	0	948.3	1.88		
18.86	0	1041	1.18		

Isotope Dilution Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-2

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	HxDD	PeCF	HxCDD	HxCDF
Lab Sample ID	Client Sample ID	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)
570-124425-1	EVBMP0007S016	79	76	78	80	89	80	81	76
570-124425-2	EVBMP0008S019	78	75	76	78	82	77	77	72
570-124425-3	EVBMP0009S017	80	78	79	81	83	76	69	69
LCS 320-649887/2-A	Lab Control Sample	75	72	75	77	84	74	70	70
LCSD 320-649887/3-A	Lab Control Sample Dup	75	73	75	76	84	77	76	74
MB 320-649887/1-A	Method Blank	69	66	68	69	75	68	65	65

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HpCDD	HpCDF	HxDF	OCDD	HxCF	13CHxCF	HpCDF2	OCDF
Lab Sample ID	Client Sample ID	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)
570-124425-1	EVBMP0007S016	81	81	91	80	87	88	83	79
570-124425-2	EVBMP0008S019	78	77	85	77	83	86	80	77
570-124425-3	EVBMP0009S017	81	77	82	81	87	88	83	80
LCS 320-649887/2-A	Lab Control Sample	75	74	82	74	81	85	77	74
LCSD 320-649887/3-A	Lab Control Sample Dup	74	75	86	75	81	84	76	75
MB 320-649887/1-A	Method Blank	67	67	76	42	74	77	70	55

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
OCDD = 13C-OCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDF = 13C-OCDF

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-649887/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 653394
Prep Batch: 649887

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.20	pg/L		01/27/23 09:36	02/13/23 14:10	1
2,3,7,8-TCDF	ND		10	0.14	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,7,8-PeCDD	ND		50	0.31	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,7,8-PeCDF	0.2420	J q	50	0.20	pg/L		01/27/23 09:36	02/13/23 14:10	1
2,3,4,7,8-PeCDF	0.3176	J q	50	0.23	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,4,7,8-HxCDD	2.269	J	50	0.29	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,6,7,8-HxCDD	0.4788	J q	50	0.28	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,7,8,9-HxCDD	0.8502	J	50	0.25	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,4,7,8-HxCDF	0.6275	J	50	0.20	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,6,7,8-HxCDF	0.5117	J	50	0.19	pg/L		01/27/23 09:36	02/13/23 14:10	1
2,3,4,6,7,8-HxCDF	0.5009	J	50	0.18	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,7,8,9-HxCDF	0.9081	J	50	0.21	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,4,6,7,8-HpCDD	2.369	J	50	0.30	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,4,6,7,8-HpCDF	1.167	J q	50	0.22	pg/L		01/27/23 09:36	02/13/23 14:10	1
1,2,3,4,7,8,9-HpCDF	0.6639	J q	50	0.25	pg/L		01/27/23 09:36	02/13/23 14:10	1
OCDD	28.18	J	100	1.8	pg/L		01/27/23 09:36	02/13/23 14:10	1
OCDF	3.031	J	100	0.25	pg/L		01/27/23 09:36	02/13/23 14:10	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*69*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-2,3,7,8-TCDF	*66*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,7,8-PeCDD	*68*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,7,8-PeCDF	*69*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,6,7,8-HxCDD	*75*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-2,3,4,7,8-PeCDF	*68*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,4,7,8-HxCDD	*65*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,4,7,8-HxCDF	*65*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*67*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*67*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,6,7,8-HxCDF	*76*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-OCDD	*42*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,7,8,9-HxCDF	*74*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-2,3,4,6,7,8-HxCDF	*77*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*70*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*
13C-OCDF	*55*		*40 - 135*	*01/27/23 09:36*	*02/13/23 14:10*	*1*

Lab Sample ID: LCS 320-649887/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 653394
Prep Batch: 649887

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	200	196.9		pg/L		98	72 - 128
2,3,7,8-TCDF	200	213.4		pg/L		107	67 - 135
1,2,3,7,8-PeCDD	1000	963.3		pg/L		96	71 - 135
1,2,3,7,8-PeCDF	1000	949.8		pg/L		95	70 - 133
2,3,4,7,8-PeCDF	1000	981.7		pg/L		98	69 - 135
1,2,3,4,7,8-HxCDD	1000	1011		pg/L		101	67 - 130
1,2,3,6,7,8-HxCDD	1000	946.6		pg/L		95	61 - 144
1,2,3,7,8,9-HxCDD	1000	996.1		pg/L		100	61 - 140

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-649887/2-A
Matrix: Water
Analysis Batch: 653394

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 649887

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3,4,7,8-HxCDF			1000	960.4		pg/L		96	69 - 140		
1,2,3,6,7,8-HxCDF			1000	987.6		pg/L		99	62 - 155		
2,3,4,6,7,8-HxCDF			1000	977.3		pg/L		98	70 - 146		
1,2,3,7,8,9-HxCDF			1000	955.9		pg/L		96	71 - 142		
1,2,3,4,6,7,8-HpCDD			1000	970.6		pg/L		97	71 - 134		
1,2,3,4,6,7,8-HpCDF			1000	999.7		pg/L		100	68 - 137		
1,2,3,4,7,8,9-HpCDF			1000	971.7		pg/L		97	74 - 134		
OCDD			2000	1922		pg/L		96	72 - 134		
OCDF			2000	2019		pg/L		101	65 - 143		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*75*		*40 - 135*
13C-2,3,7,8-TCDF	*72*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*75*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*77*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*84*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*74*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*70*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*70*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*75*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*74*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*82*		*40 - 135*
13C-OCDD	*74*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*81*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*85*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*77*		*40 - 135*
13C-OCDF	*74*		*40 - 135*

Lab Sample ID: LCSD 320-649887/3-A
Matrix: Water
Analysis Batch: 653394

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649887

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			200	202.8		pg/L		101	72 - 128	3	20
2,3,7,8-TCDF			200	217.9		pg/L		109	67 - 135	2	20
1,2,3,7,8-PeCDD			1000	982.9		pg/L		98	71 - 135	2	20
1,2,3,7,8-PeCDF			1000	1004		pg/L		100	70 - 133	6	20
2,3,4,7,8-PeCDF			1000	1018		pg/L		102	69 - 135	4	20
1,2,3,4,7,8-HxCDD			1000	984.1		pg/L		98	67 - 130	3	20
1,2,3,6,7,8-HxCDD			1000	989.2		pg/L		99	61 - 144	4	20
1,2,3,7,8,9-HxCDD			1000	974.0		pg/L		97	61 - 140	2	20
1,2,3,4,7,8-HxCDF			1000	970.9		pg/L		97	69 - 140	1	20
1,2,3,6,7,8-HxCDF			1000	998.9		pg/L		100	62 - 155	1	20
2,3,4,6,7,8-HxCDF			1000	1002		pg/L		100	70 - 146	2	20
1,2,3,7,8,9-HxCDF			1000	975.2		pg/L		98	71 - 142	2	20
1,2,3,4,6,7,8-HpCDD			1000	998.1		pg/L		100	71 - 134	3	20
1,2,3,4,6,7,8-HpCDF			1000	1015		pg/L		102	68 - 137	2	20
1,2,3,4,7,8,9-HpCDF			1000	994.9		pg/L		99	74 - 134	2	20
OCDD			2000	2023		pg/L		101	72 - 134	5	20

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-649887/3-A
Matrix: Water
Analysis Batch: 653394

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 649887

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
OCDF			2000	2059		pg/L		103	65 - 143	2	20

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*75*		*40 - 135*
13C-2,3,7,8-TCDF	*73*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*75*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*76*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*84*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*77*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*76*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*74*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*74*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*75*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*86*		*40 - 135*
13C-OCDD	*75*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*81*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*84*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*76*		*40 - 135*
13C-OCDF	*75*		*40 - 135*

QC Association Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-2

Specialty Organics

Prep Batch: 649887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Total/NA	Water	8290	
570-124425-2	EVBMP0008S019	Total/NA	Water	8290	
570-124425-3	EVBMP0009S017	Total/NA	Water	8290	
MB 320-649887/1-A	Method Blank	Total/NA	Water	8290	
LCS 320-649887/2-A	Lab Control Sample	Total/NA	Water	8290	
LCSD 320-649887/3-A	Lab Control Sample Dup	Total/NA	Water	8290	

Analysis Batch: 653394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Total/NA	Water	8290	649887
570-124425-2	EVBMP0008S019	Total/NA	Water	8290	649887
570-124425-3	EVBMP0009S017	Total/NA	Water	8290	649887
MB 320-649887/1-A	Method Blank	Total/NA	Water	8290	649887
LCS 320-649887/2-A	Lab Control Sample	Total/NA	Water	8290	649887
LCSD 320-649887/3-A	Lab Control Sample Dup	Total/NA	Water	8290	649887

Geotechnical

Analysis Batch: 301228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-124425-1	EVBMP0007S016	Total/NA	Water	D4464	
570-124425-2	EVBMP0008S019	Total/NA	Water	D4464	
570-124425-3	EVBMP0009S017	Total/NA	Water	D4464	
LCS 570-301228/22	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-301228/24	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Job ID: 570-124425-2
Project/Site: NASA SSFL CJ042 Stormwater

Client Sample ID: EVBMP0007S016
Lab Sample ID: 570-124425-1
Date Collected: 01/14/23 11:29
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1022.9 mL	20.0 uL	649887	01/27/23 09:36	CGB	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	653394	02/13/23 18:01	DB	EET SAC
	Instrument ID: 12D5									
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0008S019
Lab Sample ID: 570-124425-2
Date Collected: 01/14/23 10:42
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			998.6 mL	20.0 uL	649887	01/27/23 09:36	CGB	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	653394	02/13/23 18:47	DB	EET SAC
	Instrument ID: 12D5									
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0009S017
Lab Sample ID: 570-124425-3
Date Collected: 01/14/23 11:14
Matrix: Water
Date Received: 01/17/23 18:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1034.3 mL	20.0 uL	649887	01/27/23 09:36	CGB	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	653394	02/13/23 19:34	DB	EET SAC
	Instrument ID: 12D5									
Total/NA	Analysis	D4464		1			301228	02/04/23 13:34	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc.
Job ID: 570-124425-2
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
D4464		Water	Clay (less than 0.00391 mm)
D4464		Water	Coarse Sand (0.5mm to 1mm)
D4464		Water	Fine Sand (0.125 to 0.25mm)
D4464		Water	Gravel (greater than 2 mm)
D4464		Water	Medium Sand (0.25 to 0.5 mm)
D4464		Water	Silt (0.00391 to 0.0625mm)
D4464		Water	Total Silt and Clay (0 to 0.0626mm)
D4464		Water	Very Coarse Sand (1 to 2mm)
D4464		Water	Very Fine Sand (0.0625 to 0.125 mm)

Laboratory: Eurofins Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	02-20-24
ANAB	Dept. of Defense ELAP	L2468	01-20-24
ANAB	Dept. of Energy	L2468.01	01-20-24
ANAB	ISO/IEC 17025	L2468	01-20-24
Arizona	State	AZ0708	08-11-23
Arkansas DEQ	State	88-0691	06-17-23
California	State	2897	01-22-24
Colorado	State	CA0004	08-31-23
Florida	NELAP	E87570	06-30-23
Georgia	State	4040	01-29-24
Hawaii	State	<cert No.>	01-29-24
Illinois	NELAP	200060	03-17-24
Kansas	NELAP	E-10375	10-31-23
Louisiana	NELAP	01944	06-30-23
Louisiana (All)	NELAP	01944	06-30-23
Maine	State	CA00004	04-14-24
Michigan	State	9947	01-31-23 *
Nevada	State	CA00044	07-31-23
New Hampshire	NELAP	2997	04-18-23
New Jersey	NELAP	CA005	06-30-23
New York	NELAP	11666	04-01-23
Ohio	State	41252	01-29-24
Oregon	NELAP	4040	01-29-23 *
Texas	NELAP	T104704399-19-13	05-31-23
US Fish & Wildlife	US Federal Programs	58448	04-30-23
Utah	NELAP	CA000442021-12	02-28-23
Virginia	NELAP	460278	03-14-23
Washington	State	C581	05-05-23
West Virginia (DW)	State	9930C	12-31-23
Wisconsin	State	998204680	08-31-23
Wyoming	State Program	8TMS-L	01-28-19 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-2

Method	Method Description	Protocol	Laboratory
8290	Dioxins and Furans (HRGC/HRMS)	SW846	EET SAC
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
8290	Separatory Funnel (Liquid-Liquid) Extraction of Dioxins and Furans	SW846	EET SAC

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-124425-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-124425-1	EVBMP0007S016	Water	01/14/23 11:29	01/17/23 18:25
570-124425-2	EVBMP0008S019	Water	01/14/23 10:42	01/17/23 18:25
570-124425-3	EVBMP0009S017	Water	01/14/23 11:14	01/17/23 18:25

124425

Chain of Custody Record

COC Number: CALS01142301

JACOBS

1/17/2023 10:33 45 AM

Project Name SSFL
Project CJ042 Stormwater PO 148015891
Location Santa Susana Field Lab
Project Number D3377900
Task Order 42
PO Number 148015891
Turnaround Time 10 Days

Project Manager Randy Dean
Sample Manager

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0007S016	14-Jan-23 11 29	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4 C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu Pb Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd Cu Pb, Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4 C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
EVBMP0008S019	14-Jan-23 10 42	N	Water									
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4'C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd Cu, Pb Hg				4 C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu Pb Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

570-124425 Chain of Custody

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN BENSON	1/14/23 1130
Relinquished by	BRYA BENSON	1/17/23 1120
Received by		1/17/23 1510
Relinquished by	EL	1/17/23 1825
Received by	EL	1/17/23 1835

Shipping Details
Shipment Method: FedEx
Airbill No:
Lab Name: Eurofins/Calscience
Lab Phone: (714) 895-5494
On Ice: yes / no **Cooler Temp** 1.2/1.2 Scil

ATTN:
Sample Custody
and
Lori Thompson

Special Instructions:
See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

Chain of Custody Record

COC Number: CALS01142301

JACOBS

1/17/2023 10 33 46 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180 1/2130B	200 8/245 1	200 8/245 1F	ASTMD4464	SM2540	SW8290/1613B																		
EVBMP0009S017	14-Jan-23 11 14	N	Water																											
Dioxins-17 congeners				4 C	☐	2	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Turbidity TSS				4'C	☐	1	☑	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
LAB FILTER - Dissolved Cd Cu, Pb Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Cd Cu Pb, Hg				HNO3 4'C	☐	1	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
				Total Containers:		6																								

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	BRYAN BENSON	1/19/23 1130
Relinquished by	BRYAN BENSON	1/17/23 1120
Received by	EC	1/17/23 1510
Relinquished by	EC	1/17/23 1825
Received by	EC	1/17/23 1825

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

ATTN:

Sample Custody
and
Lon Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-204456.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-124425-2
Address: 880 Riverside Parkway, ,	Due Date Requested: 2/13/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605	PO #:			
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	WO #:			
Email:	Project #: 57006621			
Project Name: NASA SSFL CJ042 Stormwater	SSOW#:			
Site:				

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EVBMP0007S016 (570-124425-1)	1/14/23	11:29 Pacific		Water			X	2	
EVBMP0008S019 (570-124425-2)	1/14/23	10:42 Pacific		Water			X	2	
EVBMP0009S017 (570-124425-3)	1/14/23	11:14 Pacific		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by:	Date/Time: 1/18/23 1200	Company: EC	Received by:
Relinquished by:	Date/Time:	Company	Received by:
Relinquished by:	Date/Time:	Company	Received by:

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 0.8c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-124425-2

Login Number: 124425

List Source: Eurofins Calscience

List Number: 1

Creator: Thompson, Lori

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-124425-2

Login Number: 124425
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 01/19/23 12:21 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.8c 0.9c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

Generated 3/16/2023 2:41:14 PM

JOB DESCRIPTION

SSFL CJ042 Stormwater

JOB NUMBER

570-129355-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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3/16/2023 2:41:14 PM

Authorized for release by
Lori Thompson, Project Manager I
Lori.Thompson@et.eurofinsus.com
(657)212-3035

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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Project/Site: SSFL CJ042 Stormwater

Job ID: 570-129355-1

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Metals

Qualifier	Qualifier Description
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-129355-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-129355-1

Comments
No additional comments.

Receipt
The samples were received on 2/28/2023 5:07 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.7º C.

Dioxin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EVBMP0007S017 (570-129355-1), EVBMP0008S020 (570-129355-2), EVBMP0009S018 (570-129355-3), (570-129355-B-1 MS) and (570-129355-B-1 MSD). The sample(s) was filtered prior to analysis at the laboratory, and the results have been reported.

Methods 245.1, 7470A: The continuing calibration verification (CCV) associated with batch 570-308860 recovered above the upper control limit for Mercury. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is: (CCV 570-308730/9-A).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: SSFL CJ042 Stormwater

Job ID: 570-129355-1

Client Sample ID: EVBMP0007S017 — Lab Sample ID: 570-129355-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	2.0	J B	50	0.036	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	0.66	J q B	50	0.036	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.63	J q	50	0.046	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	1.9	J B	50	0.042	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	0.82	J B	50	0.048	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	0.98	J q B	50	0.053	pg/L	1		8290	Total/NA
OCDD	17	J B	100	0.11	pg/L	1		8290	Total/NA
OCDF	2.7	J q B	100	0.098	pg/L	1		8290	Total/NA
Copper	4.80		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.641	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	3.57	H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.228	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Total Suspended Solids	3.40		1.03	0.854	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0008S020 — Lab Sample ID: 570-129355-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDD	3.3	J B	50	0.074	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.2	J B	50	0.046	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	0.43	J q B	50	0.046	pg/L	1		8290	Total/NA
OCDD	56	J B	100	0.19	pg/L	1		8290	Total/NA
OCDF	3.2	J q B	100	0.10	pg/L	1		8290	Total/NA
Copper	1.76	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.159	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.64	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Turbidity	3.2		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	2.20		1.00	0.829	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0009S018 — Lab Sample ID: 570-129355-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	1.6	J B	48	0.048	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.58	J q	48	0.032	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	5.4	J B	48	0.15	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.1	J q B	48	0.056	pg/L	1		8290	Total/NA
OCDD	87	J B	96	0.17	pg/L	1		8290	Total/NA
OCDF	3.6	J B	96	0.092	pg/L	1		8290	Total/NA
Copper	1.72	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.191	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.67	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Turbidity	2.4		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	1.80		1.00	0.829	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EVBMP0007S017
Date Collected: 02/27/23 12:30
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.10	pg/L		03/07/23 04:25	03/11/23 10:28	1
2,3,7,8-TCDF	ND		10	0.0070	pg/L		03/07/23 04:25	03/11/23 10:28	1
1,2,3,7,8-PeCDD	ND		50	0.082	pg/L		03/07/23 04:25	03/11/23 10:28	1
1,2,3,7,8-PeCDF	ND		50	0.039	pg/L		03/07/23 04:25	03/11/23 10:28	1
2,3,4,7,8-PeCDF	ND		50	0.045	pg/L		03/07/23 04:25	03/11/23 10:28	1
1,2,3,4,7,8-HxCDD	**2.0**	**J B**	50	0.036	pg/L		03/07/23 04:25	03/11/23 10:28	1
1,2,3,6,7,8-HxCDD	**0.66**	**J q B**	50	0.036	pg/L		03/07/23 04:25	03/11/23 10:28	1
1,2,3,7,8,9-HxCDD	ND		50	0.033	pg/L		03/07/23 04:25	03/11/23 10:28	1
1,2,3,4,7,8-HxCDF	ND		50	0.047	pg/L		03/07/23 04:25	03/11/23 10:28	1
1,2,3,6,7,8-HxCDF	ND		50	0.047	pg/L		03/07/23 04:25	03/11/23 10:28	1
2,3,4,6,7,8-HxCDF	ND		50	0.044	pg/L		03/07/23 04:25	03/11/23 10:28	1
1,2,3,7,8,9-HxCDF	**0.63**	**J q**	50	0.046	pg/L		03/07/23 04:25	03/11/23 10:28	1
1,2,3,4,6,7,8-HpCDD	**1.9**	**J B**	50	0.042	pg/L		03/07/23 04:25	03/11/23 10:28	1
1,2,3,4,6,7,8-HpCDF	**0.82**	**J B**	50	0.048	pg/L		03/07/23 04:25	03/11/23 10:28	1
1,2,3,4,7,8,9-HpCDF	**0.98**	**J q B**	50	0.053	pg/L		03/07/23 04:25	03/11/23 10:28	1
OCDD	**17**	**J B**	100	0.11	pg/L		03/07/23 04:25	03/11/23 10:28	1
OCDF	**2.7**	**J q B**	100	0.098	pg/L		03/07/23 04:25	03/11/23 10:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*85*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-2,3,7,8-TCDF	*71*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-1,2,3,7,8-PeCDD	*97*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-1,2,3,7,8-PeCDF	*82*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-1,2,3,6,7,8-HxCDD	*88*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-2,3,4,7,8-PeCDF	*79*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-1,2,3,4,7,8-HxCDD	*88*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-1,2,3,4,7,8-HxCDF	*79*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*90*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*75*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-1,2,3,6,7,8-HxCDF	*78*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-OCDD	*79*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-1,2,3,7,8,9-HxCDF	*79*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-2,3,4,6,7,8-HxCDF	*79*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*78*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*
13C-OCDF	*70*		*40 - 135*	*03/07/23 04:25*	*03/11/23 10:28*	*1*

Client Sample ID: EVBMP0008S020
Date Collected: 02/27/23 12:20
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.15	pg/L		03/07/23 04:25	03/11/23 11:16	1
2,3,7,8-TCDF	ND		10	0.0099	pg/L		03/07/23 04:25	03/11/23 11:16	1
1,2,3,7,8-PeCDD	ND		50	0.081	pg/L		03/07/23 04:25	03/11/23 11:16	1
1,2,3,7,8-PeCDF	ND		50	0.031	pg/L		03/07/23 04:25	03/11/23 11:16	1
2,3,4,7,8-PeCDF	ND		50	0.036	pg/L		03/07/23 04:25	03/11/23 11:16	1
1,2,3,4,7,8-HxCDD	ND		50	0.064	pg/L		03/07/23 04:25	03/11/23 11:16	1
1,2,3,6,7,8-HxCDD	ND		50	0.064	pg/L		03/07/23 04:25	03/11/23 11:16	1
1,2,3,7,8,9-HxCDD	ND		50	0.058	pg/L		03/07/23 04:25	03/11/23 11:16	1
1,2,3,4,7,8-HxCDF	ND		50	0.063	pg/L		03/07/23 04:25	03/11/23 11:16	1
1,2,3,6,7,8-HxCDF	ND		50	0.059	pg/L		03/07/23 04:25	03/11/23 11:16	1

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0008S020
Date Collected: 02/27/23 12:20
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,6,7,8-HxCDF	ND		50	0.054	pg/L		03/07/23 04:25	03/11/23 11:16	1
1,2,3,7,8,9-HxCDF	ND		50	0.058	pg/L		03/07/23 04:25	03/11/23 11:16	1
1,2,3,4,6,7,8-HpCDD	**3.3**	**J B**	50	0.074	pg/L		03/07/23 04:25	03/11/23 11:16	1
1,2,3,4,6,7,8-HpCDF	**1.2**	**J B**	50	0.046	pg/L		03/07/23 04:25	03/11/23 11:16	1
1,2,3,4,7,8,9-HpCDF	**0.43**	**J q B**	50	0.046	pg/L		03/07/23 04:25	03/11/23 11:16	1
OCDD	**56**	**J B**	100	0.19	pg/L		03/07/23 04:25	03/11/23 11:16	1
OCDF	**3.2**	**J q B**	100	0.10	pg/L		03/07/23 04:25	03/11/23 11:16	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*87*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-2,3,7,8-TCDF	*72*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-1,2,3,7,8-PeCDD	*97*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-1,2,3,7,8-PeCDF	*83*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-1,2,3,6,7,8-HxCDD	*81*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-2,3,4,7,8-PeCDF	*80*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-1,2,3,4,7,8-HxCDF	*72*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*92*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*71*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-1,2,3,6,7,8-HxCDF	*72*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-OCDD	*80*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-1,2,3,7,8,9-HxCDF	*75*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-2,3,4,6,7,8-HxCDF	*79*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*
13C-OCDF	*71*		*40 - 135*	*03/07/23 04:25*	*03/11/23 11:16*	*1*

Client Sample ID: EVBMP0009S018
Date Collected: 02/27/23 12:25
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.6	0.097	pg/L		03/07/23 04:25	03/11/23 12:05	1
2,3,7,8-TCDF	ND		9.6	0.0055	pg/L		03/07/23 04:25	03/11/23 12:05	1
1,2,3,7,8-PeCDD	ND		48	0.045	pg/L		03/07/23 04:25	03/11/23 12:05	1
1,2,3,7,8-PeCDF	ND		48	0.016	pg/L		03/07/23 04:25	03/11/23 12:05	1
2,3,4,7,8-PeCDF	ND		48	0.019	pg/L		03/07/23 04:25	03/11/23 12:05	1
1,2,3,4,7,8-HxCDD	**1.6**	**J B**	48	0.048	pg/L		03/07/23 04:25	03/11/23 12:05	1
1,2,3,6,7,8-HxCDD	ND		48	0.049	pg/L		03/07/23 04:25	03/11/23 12:05	1
1,2,3,7,8,9-HxCDD	ND		48	0.044	pg/L		03/07/23 04:25	03/11/23 12:05	1
1,2,3,4,7,8-HxCDF	ND		48	0.033	pg/L		03/07/23 04:25	03/11/23 12:05	1
1,2,3,6,7,8-HxCDF	ND		48	0.032	pg/L		03/07/23 04:25	03/11/23 12:05	1
2,3,4,6,7,8-HxCDF	ND		48	0.029	pg/L		03/07/23 04:25	03/11/23 12:05	1
1,2,3,7,8,9-HxCDF	**0.58**	**J q**	48	0.032	pg/L		03/07/23 04:25	03/11/23 12:05	1
1,2,3,4,6,7,8-HpCDD	**5.4**	**J B**	48	0.15	pg/L		03/07/23 04:25	03/11/23 12:05	1
1,2,3,4,6,7,8-HpCDF	**1.1**	**J q B**	48	0.056	pg/L		03/07/23 04:25	03/11/23 12:05	1
1,2,3,4,7,8,9-HpCDF	ND		48	0.059	pg/L		03/07/23 04:25	03/11/23 12:05	1
OCDD	**87**	**J B**	96	0.17	pg/L		03/07/23 04:25	03/11/23 12:05	1
OCDF	**3.6**	**J B**	96	0.092	pg/L		03/07/23 04:25	03/11/23 12:05	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*84*		*40 - 135*	*03/07/23 04:25*	*03/11/23 12:05*	*1*
13C-2,3,7,8-TCDF	*72*		*40 - 135*	*03/07/23 04:25*	*03/11/23 12:05*	*1*

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0009S018
Date Collected: 02/27/23 12:25
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-3
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	98		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-1,2,3,7,8-PeCDF	85		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-1,2,3,6,7,8-HxCDD	85		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-2,3,4,7,8-PeCDF	81		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-1,2,3,4,7,8-HxCDD	84		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-1,2,3,4,7,8-HxCDF	75		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-1,2,3,4,6,7,8-HpCDD	93		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-1,2,3,4,6,7,8-HpCDF	73		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-1,2,3,6,7,8-HxCDF	75		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-OCDD	81		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-1,2,3,7,8,9-HxCDF	76		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-2,3,4,6,7,8-HxCDF	80		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-1,2,3,4,7,8,9-HpCDF	79		40 - 135	03/07/23 04:25	03/11/23 12:05	1
13C-OCDF	73		40 - 135	03/07/23 04:25	03/11/23 12:05	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EVBMP0007S017
Date Collected: 02/27/23 12:30
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/02/23 09:20	03/02/23 14:35	1
Copper	**4.80**		2.00	0.318	ug/L		03/02/23 09:20	03/02/23 14:35	1
Lead	**0.641**	**J**	1.00	0.118	ug/L		03/02/23 09:20	03/02/23 14:35	1

Client Sample ID: EVBMP0008S020
Date Collected: 02/27/23 12:20
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/02/23 09:20	03/02/23 14:38	1
Copper	**1.76**	**J**	2.00	0.318	ug/L		03/02/23 09:20	03/02/23 14:38	1
Lead	**0.159**	**J**	1.00	0.118	ug/L		03/02/23 09:20	03/02/23 14:38	1

Client Sample ID: EVBMP0009S018
Date Collected: 02/27/23 12:25
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/02/23 09:20	03/02/23 14:40	1
Copper	**1.72**	**J**	2.00	0.318	ug/L		03/02/23 09:20	03/02/23 14:40	1
Lead	**0.191**	**J**	1.00	0.118	ug/L		03/02/23 09:20	03/02/23 14:40	1

Client: Jacobs Engineering Group, Inc.
Project/Site: SSFL CJ042 Stormwater

Job ID: 570-129355-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EVBMP0007S017
Date Collected: 02/27/23 12:30
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/01/23 14:28	1
Copper	**3.57**	**H**	2.00	0.318	ug/L			03/01/23 14:28	1
Lead	**0.228**	**J H**	1.00	0.118	ug/L			03/01/23 14:28	1

Client Sample ID: EVBMP0008S020
Date Collected: 02/27/23 12:20
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/01/23 14:34	1
Copper	**1.64**	**J H**	2.00	0.318	ug/L			03/01/23 14:34	1
Lead	ND	H	1.00	0.118	ug/L			03/01/23 14:34	1

Client Sample ID: EVBMP0009S018
Date Collected: 02/27/23 12:25
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/01/23 14:36	1
Copper	**1.67**	**J H**	2.00	0.318	ug/L			03/01/23 14:36	1
Lead	ND	H	1.00	0.118	ug/L			03/01/23 14:36	1

Client: Jacobs Engineering Group, Inc.
Project/Site: SSFL CJ042 Stormwater

Job ID: 570-129355-1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: EVBMP0007S017
Date Collected: 02/27/23 12:30
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^+	0.000200	0.000124	mg/L		03/02/23 17:54	03/03/23 15:31	1

Client Sample ID: EVBMP0008S020
Date Collected: 02/27/23 12:20
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^+	0.000200	0.000124	mg/L		03/02/23 17:54	03/03/23 15:33	1

Client Sample ID: EVBMP0009S018
Date Collected: 02/27/23 12:25
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^+	0.000200	0.000124	mg/L		03/02/23 17:54	03/03/23 15:35	1

Client: Jacobs Engineering Group, Inc.
Project/Site: SSFL CJ042 Stormwater

Job ID: 570-129355-1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: EVBMP0007S017
Date Collected: 02/27/23 12:30
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/06/23 18:07	03/07/23 13:48	1

Client Sample ID: EVBMP0008S020
Date Collected: 02/27/23 12:20
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/06/23 18:07	03/07/23 13:50	1

Client Sample ID: EVBMP0009S018
Date Collected: 02/27/23 12:25
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/06/23 18:07	03/07/23 13:52	1

General Chemistry

Client Sample ID: EVBMP0007S017
Date Collected: 02/27/23 12:30
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	3.40		1.03	0.854	mg/L			03/03/23 20:05	1

Client Sample ID: EVBMP0008S020
Date Collected: 02/27/23 12:20
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	3.2		0.05	0.05	NTU			02/28/23 20:48	1
Total Suspended Solids (SM 2540D)	2.20		1.00	0.829	mg/L			03/03/23 20:05	1

Client Sample ID: EVBMP0009S018
Date Collected: 02/27/23 12:25
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	2.4		0.05	0.05	NTU			02/28/23 20:50	1
Total Suspended Solids (SM 2540D)	1.80		1.00	0.829	mg/L			03/03/23 20:05	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EVBMP0007S017
Date Collected: 02/27/23 12:30
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			03/15/23 13:30	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/15/23 13:30	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			03/15/23 13:30	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/15/23 13:30	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/15/23 13:30	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			03/15/23 13:30	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			03/15/23 13:30	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/15/23 13:30	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			03/15/23 13:30	1

Client Sample ID: EVBMP0008S020
Date Collected: 02/27/23 12:20
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			03/15/23 13:41	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/15/23 13:41	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			03/15/23 13:41	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/15/23 13:41	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/15/23 13:41	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			03/15/23 13:41	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			03/15/23 13:41	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/15/23 13:41	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			03/15/23 13:41	1

Client Sample ID: EVBMP0009S018
Date Collected: 02/27/23 12:25
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			03/15/23 13:54	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/15/23 13:54	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			03/15/23 13:54	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/15/23 13:54	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/15/23 13:54	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			03/15/23 13:54	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			03/15/23 13:54	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/15/23 13:54	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			03/15/23 13:54	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	03/14/23
Date Received:	03/14/23
Work Order No:	570-129355
Date Analyzed:	03/15/23
Method:	ASTM D4464M

Project: SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0009S018		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	03/14/23
Date Received:	03/14/23
Work Order No:	570-129355
Date Analyzed:	03/15/23
Method:	ASTM D4464M

Project: SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0007S017		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	03/14/23
Date Received:	03/14/23
Work Order No:	570-129355
Date Analyzed:	03/15/23
Method:	ASTM D4464M

Project: SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0008S020		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	03/14/23
Date Received:	03/14/23
Work Order No:	570-129355
Date Analyzed:	03/15/23
Method:	ASTM D4464M

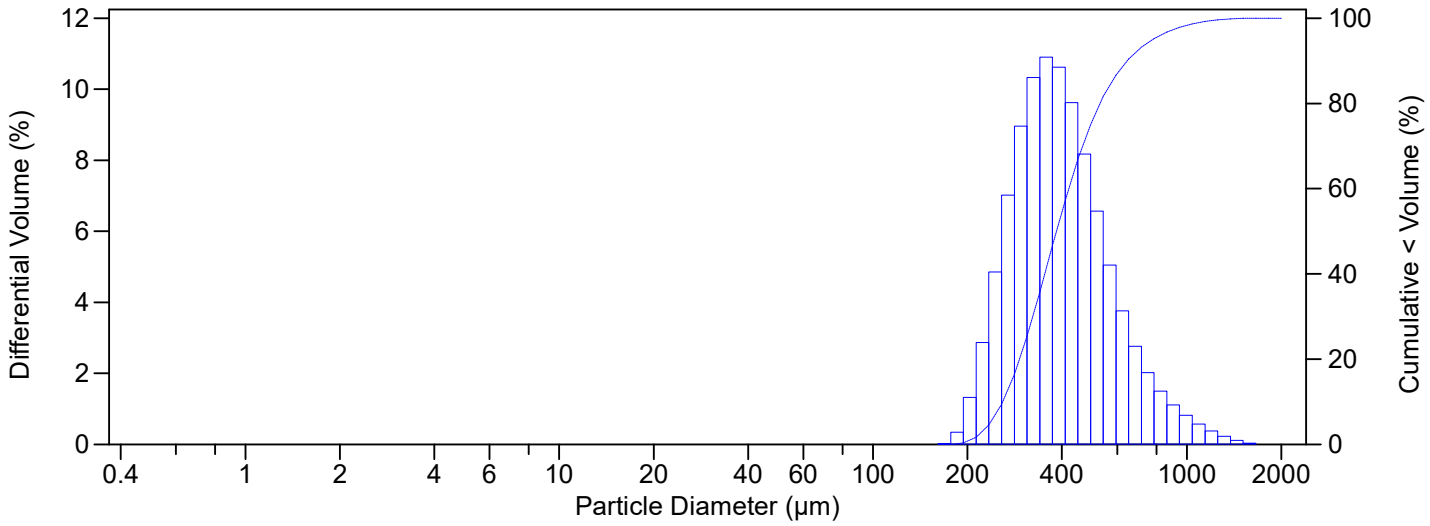
Project: SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0009S018		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

File name:	C:\LS13320\STD SAND_15 Mar 2023_14.08.42.$ls		
	STD SAND_15 Mar 2023_14.08.42.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	5		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.82%		
LS 13 320	Aqueous Liquid Module		
Start time:	14:07 15 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	11%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_15 Mar 2023_14.08.42.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	427.8 µm	S.D.:	178.2 µm
Median:	384.7 µm	Variance:	31770 µm^2
Mean/Median ratio:	1.112	Skewness:	1.902 Right skewed
Mode:	356.1 µm	Kurtosis:	5.259 Leptokurtic

d_{10}: 259.0 µm d_{50}: 384.7 µm d_{90}: 646.2 µm

Folk and Ward Statistics (Phi)

Mean:	1.34	Median:	1.38	Deviation:	0.51
Skewness:	-0.14	Kurtosis:	1.04		

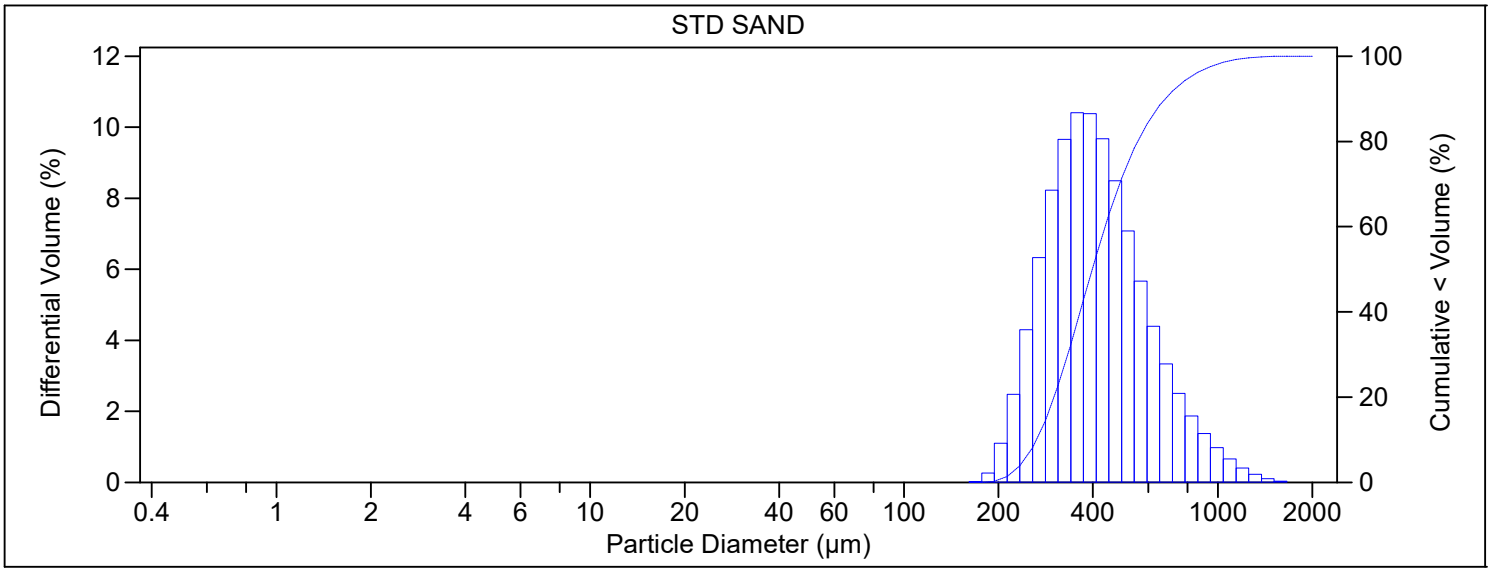
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
236.1 µm	280.5 µm	308.4 µm	352.9 µm	384.7 µm	493.3 µm	566.8 µm	779.2 µm

Particle Diameter µm	STD SAND _15 Mar 2023_14.08 .42.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.95
250	68.0
500	22.4
1000	1.71
2000	

STD SAND_15 Mar 2023_14.08.42.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.38
0.412	0	22.73	0	1255	0.23
0.452	0	24.95	0	1377	0.12
0.496	0	27.39	0	1512	0.038
0.545	0	30.07	0	1660	0.0029
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.022		
3.206	0	176.9	0.34		
3.519	0	194.2	1.33		
3.863	0	213.2	2.87		
4.241	0	234.1	4.86		
4.656	0	256.9	7.02		
5.111	0	282.1	8.96		
5.611	0	309.6	10.3		
6.159	0	339.9	10.9		
6.761	0	373.1	10.6		
7.422	0	409.6	9.62		
8.148	0	449.7	8.18		
8.944	0	493.6	6.57		
9.819	0	541.9	5.05		
10.78	0	594.9	3.76		
11.83	0	653.0	2.76		
12.99	0	716.9	2.02		
14.26	0	786.9	1.50		
15.65	0	863.9	1.11		
17.18	0	948.3	0.82		
18.86	0	1041	0.58		

File name:	C:\LS13320\STD SAND_15 Mar 2023_14.40.35.$ls		
	STD SAND_15 Mar 2023_14.40.35.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	7		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.66%		
LS 13 320	Aqueous Liquid Module		
Start time:	14:39 15 Mar 2023	Run length:	61 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_15 Mar 2023_14.40.35.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	443.5 µm	S.D.:	184.2 µm
Median:	398.5 µm	Variance:	33924 µm^2
Mean/Median ratio:	1.113	Skewness:	1.696 Right skewed
Mode:	356.1 µm	Kurtosis:	4.009 Leptokurtic

d_{10}: 264.2 µm d_{50}: 398.5 µm d_{90}: 682.1 µm

Folk and Ward Statistics (Phi)

Mean:	1.29	Median:	1.33	Deviation:	0.53
Skewness:	-0.13	Kurtosis:	1.02		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
240.1 µm	287.1 µm	316.8 µm	364.2 µm	398.5 µm	518.6 µm	594.1 µm	814.5 µm

Particle Diameter µm	STD SAND _15 Mar 2023_14.40 .35.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.86
250	65.4
500	25.9
1000	1.87
2000	

STD SAND_15 Mar 2023_14.40.35.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.41
0.412	0	22.73	0	1255	0.23
0.452	0	24.95	0	1377	0.11
0.496	0	27.39	0	1512	0.031
0.545	0	30.07	0	1660	0.0023
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.016		
3.206	0	176.9	0.26		
3.519	0	194.2	1.10		
3.863	0	213.2	2.48		
4.241	0	234.1	4.30		
4.656	0	256.9	6.33		
5.111	0	282.1	8.22		
5.611	0	309.6	9.66		
6.159	0	339.9	10.4		
6.761	0	373.1	10.4		
7.422	0	409.6	9.68		
8.148	0	449.7	8.49		
8.944	0	493.6	7.08		
9.819	0	541.9	5.67		
10.78	0	594.9	4.39		
11.83	0	653.0	3.34		
12.99	0	716.9	2.51		
14.26	0	786.9	1.87		
15.65	0	863.9	1.38		
17.18	0	948.3	0.98		
18.86	0	1041	0.66		

Isotope Dilution Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: SSFL CJ042 Stormwater

Job ID: 570-129355-1

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	HxDD	PeCF	HxCDD	HxCDF
Lab Sample ID	Client Sample ID	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)
570-129355-1	EVBMP0007S017	85	71	97	82	88	79	88	79
570-129355-2	EVBMP0008S020	87	72	97	83	81	80	81	72
570-129355-3	EVBMP0009S018	84	72	98	85	85	81	84	75
LCS 320-658620/2-A	Lab Control Sample	85	71	98	85	88	83	89	78
MB 320-658620/1-A	Method Blank	89	73	100	84	88	81	85	78

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HpCDD	HpCDF	HxDF	OCDD	HxCF	13CHxCF	HpCDF2	OCDF
Lab Sample ID	Client Sample ID	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)
570-129355-1	EVBMP0007S017	90	75	78	79	79	79	78	70
570-129355-2	EVBMP0008S020	92	71	72	80	75	79	80	71
570-129355-3	EVBMP0009S018	93	73	75	81	76	80	79	73
LCS 320-658620/2-A	Lab Control Sample	91	74	77	81	78	80	78	72
MB 320-658620/1-A	Method Blank	93	74	74	83	78	80	81	74

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
OCDD = 13C-OCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDF = 13C-OCDF

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-658620/1-A
Matrix: Water
Analysis Batch: 659784

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 658620

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.13	pg/L		03/07/23 04:25	03/10/23 22:08	1
2,3,7,8-TCDF	ND		10	0.015	pg/L		03/07/23 04:25	03/10/23 22:08	1
1,2,3,7,8-PeCDD	ND		50	0.089	pg/L		03/07/23 04:25	03/10/23 22:08	1
1,2,3,7,8-PeCDF	ND		50	0.016	pg/L		03/07/23 04:25	03/10/23 22:08	1
2,3,4,7,8-PeCDF	ND		50	0.018	pg/L		03/07/23 04:25	03/10/23 22:08	1
1,2,3,4,7,8-HxCDD	1.773	J q	50	0.080	pg/L		03/07/23 04:25	03/10/23 22:08	1
1,2,3,6,7,8-HxCDD	0.8798	J q	50	0.081	pg/L		03/07/23 04:25	03/10/23 22:08	1
1,2,3,7,8,9-HxCDD	0.6884	J	50	0.073	pg/L		03/07/23 04:25	03/10/23 22:08	1
1,2,3,4,7,8-HxCDF	ND		50	0.099	pg/L		03/07/23 04:25	03/10/23 22:08	1
1,2,3,6,7,8-HxCDF	ND		50	0.10	pg/L		03/07/23 04:25	03/10/23 22:08	1
2,3,4,6,7,8-HxCDF	ND		50	0.095	pg/L		03/07/23 04:25	03/10/23 22:08	1
1,2,3,7,8,9-HxCDF	ND		50	0.10	pg/L		03/07/23 04:25	03/10/23 22:08	1
1,2,3,4,6,7,8-HpCDD	3.053	J	50	0.24	pg/L		03/07/23 04:25	03/10/23 22:08	1
1,2,3,4,6,7,8-HpCDF	2.366	J q	50	0.25	pg/L		03/07/23 04:25	03/10/23 22:08	1
1,2,3,4,7,8,9-HpCDF	1.362	J	50	0.27	pg/L		03/07/23 04:25	03/10/23 22:08	1
OCDD	12.12	J	100	0.19	pg/L		03/07/23 04:25	03/10/23 22:08	1
OCDF	4.403	J q	100	0.42	pg/L		03/07/23 04:25	03/10/23 22:08	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*89*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-2,3,7,8-TCDF	*73*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-1,2,3,7,8-PeCDD	*100*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-1,2,3,7,8-PeCDF	*84*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-1,2,3,6,7,8-HxCDD	*88*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-2,3,4,7,8-PeCDF	*81*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-1,2,3,4,7,8-HxCDD	*85*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-1,2,3,4,7,8-HxCDF	*78*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*93*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*74*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-1,2,3,6,7,8-HxCDF	*74*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-OCDD	*83*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-1,2,3,7,8,9-HxCDF	*78*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-2,3,4,6,7,8-HxCDF	*80*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*81*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*
13C-OCDF	*74*		*40 - 135*	*03/07/23 04:25*	*03/10/23 22:08*	*1*

Lab Sample ID: LCS 320-658620/2-A
Matrix: Water
Analysis Batch: 659784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 658620

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	200	189.1		pg/L		95	72 - 128
2,3,7,8-TCDF	200	204.4		pg/L		102	67 - 135
1,2,3,7,8-PeCDD	1000	944.7		pg/L		94	71 - 135
1,2,3,7,8-PeCDF	1000	893.1		pg/L		89	70 - 133
2,3,4,7,8-PeCDF	1000	905.3		pg/L		91	69 - 135
1,2,3,4,7,8-HxCDD	1000	896.5		pg/L		90	67 - 130
1,2,3,6,7,8-HxCDD	1000	929.6		pg/L		93	61 - 144
1,2,3,7,8,9-HxCDD	1000	910.1		pg/L		91	61 - 140

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-658620/2-A
Matrix: Water
Analysis Batch: 659784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 658620

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3,4,7,8-HxCDF	1000	941.3		pg/L		94	69 - 140
1,2,3,6,7,8-HxCDF	1000	933.1		pg/L		93	62 - 155
2,3,4,6,7,8-HxCDF	1000	934.8		pg/L		93	70 - 146
1,2,3,7,8,9-HxCDF	1000	928.8		pg/L		93	71 - 142
1,2,3,4,6,7,8-HpCDD	1000	883.5		pg/L		88	71 - 134
1,2,3,4,6,7,8-HpCDF	1000	951.7		pg/L		95	68 - 137
1,2,3,4,7,8,9-HpCDF	1000	919.2		pg/L		92	74 - 134
OCDD	2000	1885		pg/L		94	72 - 134
OCDF	2000	1913		pg/L		96	65 - 143

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*85*		*40 - 135*
13C-2,3,7,8-TCDF	*71*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*98*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*85*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*88*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*83*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*89*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*78*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*91*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*74*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*77*		*40 - 135*
13C-OCDD	*81*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*78*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*80*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*78*		*40 - 135*
13C-OCDF	*72*		*40 - 135*

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-308339/1-A
Matrix: Water
Analysis Batch: 308478

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 308339

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/02/23 09:20	03/02/23 14:04	1
Copper	ND		2.00	0.318	ug/L		03/02/23 09:20	03/02/23 14:04	1
Lead	ND		1.00	0.118	ug/L		03/02/23 09:20	03/02/23 14:04	1

Lab Sample ID: LCS 570-308339/2-A
Matrix: Water
Analysis Batch: 308478

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 308339

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	76.43		ug/L		96	85 - 115
Copper	80.0	75.16		ug/L		94	85 - 115
Lead	80.0	77.93		ug/L		97	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 570-308339/3-A
Matrix: Water
Analysis Batch: 308478

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 308339

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	76.02		ug/L		95	85 - 115	1	20
Copper			80.0	75.29		ug/L		94	85 - 115	0	20
Lead			80.0	78.83		ug/L		99	85 - 115	1	20

Lab Sample ID: 570-129355-1 MS
Matrix: Water
Analysis Batch: 308099

Client Sample ID: EVBMP0007S017
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium	ND	H	80.0	67.20		ug/L		84	80 - 120		
Copper	3.57	H	80.0	71.47		ug/L		85	80 - 120		
Lead	0.228	J H	80.0	66.49		ug/L		83	80 - 120		

Lab Sample ID: 570-129355-1 MSD
Matrix: Water
Analysis Batch: 308099

Client Sample ID: EVBMP0007S017
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND	H	80.0	66.43		ug/L		83	80 - 120	1	20
Copper	3.57	H	80.0	70.84		ug/L		84	80 - 120	1	20
Lead	0.228	J H	80.0	66.96		ug/L		83	80 - 120	1	20

Lab Sample ID: MB 570-308039/1-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L			03/01/23 14:16	1
Copper	ND		2.00	0.318	ug/L			03/01/23 14:16	1
Lead	ND		1.00	0.118	ug/L			03/01/23 14:16	1

Lab Sample ID: LCS 570-308039/2-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium			80.0	79.95		ug/L		100	85 - 115		
Copper			80.0	77.56		ug/L		97	85 - 115		
Lead			80.0	80.35		ug/L		100	85 - 115		

Lab Sample ID: LCSD 570-308039/3-A
Matrix: Water
Analysis Batch: 308100

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	80.52		ug/L		101	85 - 115	1	20
Copper			80.0	78.20		ug/L		98	85 - 115	1	20
Lead			80.0	80.49		ug/L		101	85 - 115	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-308555/1-A
Matrix: Water
Analysis Batch: 308860

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 308555

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	^+	0.000200	0.000124	mg/L		03/02/23 17:54	03/03/23 14:43	1

Lab Sample ID: LCS 570-308555/2-A
Matrix: Water
Analysis Batch: 308860

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 308555

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.008076	^+	mg/L		101	85 - 115

Lab Sample ID: LCSD 570-308555/3-A
Matrix: Water
Analysis Batch: 308860

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 308555

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.008354	^+	mg/L		104	85 - 115	3	10

Lab Sample ID: MB 570-309367/1-B
Matrix: Water
Analysis Batch: 309665

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 309368

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/06/23 18:07	03/07/23 13:11	1

Lab Sample ID: LCS 570-309367/2-B
Matrix: Water
Analysis Batch: 309665

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 309368

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.008472		mg/L		106	85 - 115

Lab Sample ID: LCSD 570-309367/3-B
Matrix: Water
Analysis Batch: 309665

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 309368

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.008400		mg/L		105	85 - 115	1	10

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-307852/1
Matrix: Water
Analysis Batch: 307852

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		100.6	99.0 - 101.0

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: LCSSRM 570-307852/2
Matrix: Water
Analysis Batch: 307852

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		101.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-307852/3
Matrix: Water
Analysis Batch: 307852

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-308931/1
Matrix: Water
Analysis Batch: 308931

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			03/03/23 19:48	1

Lab Sample ID: LCS 570-308931/2
Matrix: Water
Analysis Batch: 308931

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	102.0		mg/L		102	77 - 116

Lab Sample ID: LCSD 570-308931/3
Matrix: Water
Analysis Batch: 308931

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids	100	100.0		mg/L		100	77 - 116	2	10

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Lab Sample ID: 570-129355-3 DU
Matrix: Water
Analysis Batch: 311864

Client Sample ID: EVBMP0009S018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Clay (less than 0.00391 mm)	ND		ND		%		NC	20
Coarse Sand (0.5mm to 1mm)	ND		ND		%		NC	20
Fine Sand (0.125 to 0.25mm)	ND		ND		%		NC	20
Gravel (greater than 2 mm)	ND		ND		%		NC	20
Medium Sand (0.25 to 0.5 mm)	ND		ND		%		NC	20
Silt (0.00391 to 0.0625mm)	ND		ND		%		NC	20
Total Silt and Clay (0 to 0.0626mm)	ND		ND		%		NC	20
Very Coarse Sand (1 to 2mm)	ND		ND		%		NC	20

Method: D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering) (Continued)

Lab Sample ID: 570-129355-3 DU
Matrix: Water
Analysis Batch: 311864

Client Sample ID: EVBMP0009S018
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Very Fine Sand (0.0625 to 0.125 mm)	ND			ND		%				NC	20

Specialty Organics

Prep Batch: 658620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Total/NA	Water	8290	
570-129355-2	EVBMP0008S020	Total/NA	Water	8290	
570-129355-3	EVBMP0009S018	Total/NA	Water	8290	
MB 320-658620/1-A	Method Blank	Total/NA	Water	8290	
LCS 320-658620/2-A	Lab Control Sample	Total/NA	Water	8290	

Analysis Batch: 659784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-658620/1-A	Method Blank	Total/NA	Water	8290	658620
LCS 320-658620/2-A	Lab Control Sample	Total/NA	Water	8290	658620

Analysis Batch: 659789

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Total/NA	Water	8290	658620
570-129355-2	EVBMP0008S020	Total/NA	Water	8290	658620
570-129355-3	EVBMP0009S018	Total/NA	Water	8290	658620

Metals

Filtration Batch: 308039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Dissolved	Water	Filtration	
570-129355-2	EVBMP0008S020	Dissolved	Water	Filtration	
570-129355-3	EVBMP0009S018	Dissolved	Water	Filtration	
MB 570-308039/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-129355-1 MS	EVBMP0007S017	Dissolved	Water	Filtration	
570-129355-1 MSD	EVBMP0007S017	Dissolved	Water	Filtration	

Analysis Batch: 308099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Dissolved	Water	200.8	308039
570-129355-2	EVBMP0008S020	Dissolved	Water	200.8	308039
570-129355-3	EVBMP0009S018	Dissolved	Water	200.8	308039
570-129355-1 MS	EVBMP0007S017	Dissolved	Water	200.8	308039
570-129355-1 MSD	EVBMP0007S017	Dissolved	Water	200.8	308039

Analysis Batch: 308100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308039/1-A	Method Blank	Dissolved	Water	200.8	308039
LCS 570-308039/2-A	Lab Control Sample	Dissolved	Water	200.8	308039
LCSD 570-308039/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	308039

Prep Batch: 308339

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Total Recoverable	Water	200.8	
570-129355-2	EVBMP0008S020	Total Recoverable	Water	200.8	
570-129355-3	EVBMP0009S018	Total Recoverable	Water	200.8	
MB 570-308339/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-308339/2-A	Lab Control Sample	Total Recoverable	Water	200.8	

Metals (Continued)

Prep Batch: 308339 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-308339/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Analysis Batch: 308478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-308339/1-A	Method Blank	Total Recoverable	Water	200.8	308339
LCS 570-308339/2-A	Lab Control Sample	Total Recoverable	Water	200.8	308339
LCSD 570-308339/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	308339

Prep Batch: 308555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Total/NA	Water	245.1	
570-129355-2	EVBMP0008S020	Total/NA	Water	245.1	
570-129355-3	EVBMP0009S018	Total/NA	Water	245.1	
MB 570-308555/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-308555/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-308555/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Analysis Batch: 308632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Total Recoverable	Water	200.8	308339
570-129355-2	EVBMP0008S020	Total Recoverable	Water	200.8	308339
570-129355-3	EVBMP0009S018	Total Recoverable	Water	200.8	308339

Analysis Batch: 308860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Total/NA	Water	245.1	308555
570-129355-2	EVBMP0008S020	Total/NA	Water	245.1	308555
570-129355-3	EVBMP0009S018	Total/NA	Water	245.1	308555
MB 570-308555/1-A	Method Blank	Total/NA	Water	245.1	308555
LCS 570-308555/2-A	Lab Control Sample	Total/NA	Water	245.1	308555
LCSD 570-308555/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	308555

Filtration Batch: 309367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Dissolved	Water	Filtration	
570-129355-2	EVBMP0008S020	Dissolved	Water	Filtration	
570-129355-3	EVBMP0009S018	Dissolved	Water	Filtration	
MB 570-309367/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-309367/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-309367/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 309368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Dissolved	Water	245.1	309367
570-129355-2	EVBMP0008S020	Dissolved	Water	245.1	309367
570-129355-3	EVBMP0009S018	Dissolved	Water	245.1	309367
MB 570-309367/1-B	Method Blank	Dissolved	Water	245.1	309367
LCS 570-309367/2-B	Lab Control Sample	Dissolved	Water	245.1	309367
LCSD 570-309367/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	309367

QC Association Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: SSFL CJ042 Stormwater

Job ID: 570-129355-1

Metals

Analysis Batch: 309665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Dissolved	Water	245.1	309368
570-129355-2	EVBMP0008S020	Dissolved	Water	245.1	309368
570-129355-3	EVBMP0009S018	Dissolved	Water	245.1	309368
MB 570-309367/1-B	Method Blank	Dissolved	Water	245.1	309368
LCS 570-309367/2-B	Lab Control Sample	Dissolved	Water	245.1	309368
LCSD 570-309367/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	309368

General Chemistry

Analysis Batch: 307852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-2	EVBMP0008S020	Total/NA	Water	SM 2130B	
570-129355-3	EVBMP0009S018	Total/NA	Water	SM 2130B	
LCSSRM 570-307852/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-307852/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-307852/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 308931

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Total/NA	Water	SM 2540D	
570-129355-2	EVBMP0008S020	Total/NA	Water	SM 2540D	
570-129355-3	EVBMP0009S018	Total/NA	Water	SM 2540D	
MB 570-308931/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-308931/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-308931/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Geotechnical

Analysis Batch: 311864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-129355-1	EVBMP0007S017	Total/NA	Water	D4464	
570-129355-2	EVBMP0008S020	Total/NA	Water	D4464	
570-129355-3	EVBMP0009S018	Total/NA	Water	D4464	
LCS 570-311864/5	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-311864/7	Lab Control Sample Dup	Total/NA	Water	D4464	
570-129355-3 DU	EVBMP0009S018	Total/NA	Water	D4464	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: SSFL CJ042 Stormwater

Job ID: 570-129355-1

Client Sample ID: EVBMP0007S017

Lab Sample ID: 570-129355-1

Date Collected: 02/27/23 12:30

Matrix: Water

Date Received: 02/28/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1000.3 mL	20.0 uL	658620	03/07/23 04:25	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	659789	03/11/23 10:28	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			50 mL	50 mL	308039	03/01/23 12:58	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			308099	03/01/23 14:28	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	308339	03/02/23 09:20	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			308632	03/02/23 14:35	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	309367	03/06/23 17:48	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	309368	03/06/23 18:07	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			309665	03/07/23 13:48	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	308555	03/02/23 17:54	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			308860	03/03/23 15:31	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2540D		1	970 mL	1000 mL	308931	03/03/23 20:05	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	D4464		1			311864	03/15/23 13:30	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0008S020

Lab Sample ID: 570-129355-2

Date Collected: 02/27/23 12:20

Matrix: Water

Date Received: 02/28/23 17:07

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1000.5 mL	20.0 uL	658620	03/07/23 04:25	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	659789	03/11/23 11:16	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			50 mL	50 mL	308039	03/01/23 12:58	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			308099	03/01/23 14:34	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	308339	03/02/23 09:20	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			308632	03/02/23 14:38	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	309367	03/06/23 17:48	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	309368	03/06/23 18:07	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			309665	03/07/23 13:50	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	308555	03/02/23 17:54	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			308860	03/03/23 15:33	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			307852	02/28/23 20:48	TXA8	EET CAL 4
	Instrument ID: TUR4									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: SSFL CJ042 Stormwater

Job ID: 570-129355-1

Client Sample ID: EVBMP0008S020

Date Collected: 02/27/23 12:20
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	308931	03/03/23 20:05	BDH9	EET CAL 4
Total/NA	Analysis	D4464		1			311864	03/15/23 13:41	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0009S018

Date Collected: 02/27/23 12:25
Date Received: 02/28/23 17:07

Lab Sample ID: 570-129355-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1046.7 mL	20.0 uL	658620	03/07/23 04:25	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	659789	03/11/23 12:05	GRB	EET SAC
	Instrument ID: DFS 1									
Dissolved	Filtration	Filtration			50 mL	50 mL	308039	03/01/23 12:58	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			308099	03/01/23 14:36	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	308339	03/02/23 09:20	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			308632	03/02/23 14:40	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	309367	03/06/23 17:48	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	309368	03/06/23 18:07	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			309665	03/07/23 13:52	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	308555	03/02/23 17:54	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			308860	03/03/23 15:35	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			307852	02/28/23 20:50	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	308931	03/03/23 20:05	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	D4464		1			311864	03/15/23 13:54	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc.
Job ID: 570-129355-1
Project/Site: SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8		Water	Cadmium
200.8		Water	Copper
200.8		Water	Lead
200.8	200.8	Water	Cadmium
200.8	200.8	Water	Copper
200.8	200.8	Water	Lead
245.1	245.1	Water	Mercury
D4464		Water	Clay (less than 0.00391 mm)
D4464		Water	Coarse Sand (0.5mm to 1mm)
D4464		Water	Fine Sand (0.125 to 0.25mm)
D4464		Water	Gravel (greater than 2 mm)
D4464		Water	Medium Sand (0.25 to 0.5 mm)
D4464		Water	Silt (0.00391 to 0.0625mm)
D4464		Water	Total Silt and Clay (0 to 0.0626mm)
D4464		Water	Very Coarse Sand (1 to 2mm)
D4464		Water	Very Fine Sand (0.0625 to 0.125 mm)
SM 2130B		Water	Turbidity

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2897	01-22-24

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: SSFL CJ042 Stormwater

Job ID: 570-129355-1

Method	Method Description	Protocol	Laboratory
8290	Dioxins and Furans (HRGC/HRMS)	SW846	EET SAC
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
8290	Separatory Funnel (Liquid-Liquid) Extraction of Dioxins and Furans	SW846	EET SAC
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: SSFL CJ042 Stormwater

Job ID: 570-129355-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-129355-1	EVBMP0007S017	Water	02/27/23 12:30	02/28/23 17:07
570-129355-2	EVBMP0008S020	Water	02/27/23 12:20	02/28/23 17:07
570-129355-3	EVBMP0009S018	Water	02/27/23 12:25	02/28/23 17:07

129355

Chain of Custody Record

COC Number: CALS02272302

JACOBS

2/27/2023 4:08:35 PM

Project Name SSFL
Project CJ042 Stormwater PO 148015891
Location Santa Susana Field Lab
Project Number D3377900
Task Order 42
PO Number 148015891
Turnaround Time 10 Days

Project Manager Randy Dean
Sample Manager

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180.1/2130B	200.8/245.1	200.8/245.1F	ASTMD1464	SM2540	SW8290/1613B
EVBMP0007S017	27-Feb-23 12:30	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4'C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
EVBMP0008S020	27-Feb-23 12:20	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4'C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

570-129355 Chain of Custody

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	BRYAN BENSON	2/28/23 9:30
Relinquished by	[illegible]	2/28/23 9:30
Received by	[illegible]	2/28/23 1420
Relinquished by	[illegible]	2/28/23 1420
Received by	[illegible] EC	2/28/23 1420
Relinquished by	[illegible] EC	2/28/23 1707

Shipping Details
Shipment Method: FedEx
Airbill No:
Lab Name: Eurofins/Calscience
Lab Phone: (714) 895-5494
On Ice: yes / no **Cooler Temp** 1.8/1.7 5c12

ATTN:
Sample Custody
and
Lori Thompson

Special Instructions:
See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

3/16/2023

Chain of Custody Record

COC Number: CALS02272302

JACOBS

2/27/2023 4:08:35 PM

Project Name SSFL
Project CJ042 Stormwater PO 148015891
Location Santa Susana Field Lab
Project Number D3377900
Task Order 42
PO Number 148015891
Turnaround Time 10 Days

Project Manager
Randy Dean
Sample Manager

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180.1/2130B	200.8/245.1	200.8/245.1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0009S018	27-Feb-23 12:25	N	Water									
Dioxins-17 congeners				4°C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4°C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4°C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4°C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4°C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN BENSON	2/28/23 9:30
Relinquished by	[signature]	2/28/23 9:30
Received by	Randy Dean	2/28/23 1420
Relinquished by	[signature]	2/28/23 1420
Received by	[signature] - EC	2/28/23 1420
Relinquished by	[signature] - EC	2/28/23 1707

Shipping Details
Shipment Method: FedEx
Airbill No:
Lab Name: Eurofins/Calscience
Lab Phone: (714) 895-5494
On ice: yes / no **Cooler Temp** _____

ATTN:
Sample Custody
and
Lori Thompson

Special Instructions:
See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-208835.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-129355-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/10/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EVBMP0007S017 (570-129355-1)	2/27/23	12:30 Pacific		Water			X	2	
EVBMP0008S020 (570-129355-2)	2/27/23	12:20 Pacific		Water			X	2	
EVBMP0009S018 (570-129355-3)	2/27/23	12:25 Pacific		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/01/23 12:31	EC		3/3/23 930	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.: Seal	Cooler Temperature(s) °C and Other Remarks: 1.7c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-129355-1

Login Number: 129355
List Number: 1
Creator: Burley, Don

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc. Job Number: 570-129355-1

Login Number: 129355
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/03/23 02:34 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

Generated 3/27/2023 5:05:18 PM

JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-131083-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

This report is issued solely for the use of the person or company to whom it is addressed. Any use, copying or disclosure other than by the intended recipient is unauthorized. If you have received this report in error, please notify the sender and destroy this report immediately. This report shall not be reproduced except in full, without prior express written approval by the laboratory.

The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
3/27/2023 5:05:18 PM

Authorized for release by
Lori Thompson, Project Manager I
Lori.Thompson@et.eurofinsus.com
(657)212-3035

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Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Metals

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
H3	Sample was received and analyzed past holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-131083-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-131083-1

Comments
No additional comments.

Receipt
The samples were received on 3/13/2023 7:25 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.5º C.

Receipt Exceptions
The following samples were received outside of holding time for Turbidity: EVBMP0007S018 (570-131083-1), EVBMP0008S021 (570-131083-2) and EVBMP0009s019 (570-131083-3).

Dioxin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EVBMP0007S018 (570-131083-1), EVBMP0008S021 (570-131083-2) and EVBMP0009s019 (570-131083-3). The samples were filtered prior to analysis at the laboratory, and the results have been reported.

Method 200.8: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-312120 and analytical batch 570-312206 were outside control limits. The associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 2130B: The following samples were received outside of holding time: EVBMP0008S021 (570-131083-2) and EVBMP0009s019 (570-131083-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-131083-1

Client Sample ID: EVBMP0007S018 — Lab Sample ID: 570-131083-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.51	J q B	48	0.13	pg/L	1		8290	Total/NA
2,3,4,7,8-PeCDF	0.28	J	48	0.14	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDD	2.2	J B	48	0.21	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	0.44	J B	48	0.22	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	0.43	J B	48	0.19	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDF	0.25	J q B	48	0.12	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDF	0.23	J q B	48	0.11	pg/L	1		8290	Total/NA
2,3,4,6,7,8-HxCDF	0.23	J q B	48	0.10	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.72	J B	48	0.12	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	2.8	J B	48	0.20	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	2.0	J q B	48	0.25	pg/L	1		8290	Total/NA
OCDD	22	J B	96	0.34	pg/L	1		8290	Total/NA
OCDF	6.6	J B	96	0.16	pg/L	1		8290	Total/NA
Copper	1.51	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Copper	1.38	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Total Suspended Solids	2.80		1.00	0.829	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0008S021 — Lab Sample ID: 570-131083-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDD	0.28	J q	10	0.27	pg/L	1		8290	Total/NA
1,2,3,7,8-PeCDF	0.62	J B	50	0.14	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDD	2.1	J B	50	0.20	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	0.45	J q B	50	0.19	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	0.28	J q B	50	0.17	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDF	0.18	J q B	50	0.12	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDF	0.18	J q B	50	0.11	pg/L	1		8290	Total/NA
2,3,4,6,7,8-HxCDF	0.21	J B	50	0.10	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.84	J B	50	0.12	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	3.9	J B	50	0.18	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.5	J q B	50	0.22	pg/L	1		8290	Total/NA
OCDD	56	J B	100	0.49	pg/L	1		8290	Total/NA
OCDF	5.4	J B	100	0.19	pg/L	1		8290	Total/NA
Copper	1.38	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.141	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.23	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Turbidity	1.9	H H3	0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	1.00		1.00	0.829	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0009s019 — Lab Sample ID: 570-131083-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF	0.29	J	9.6	0.11	pg/L	1		8290	Total/NA
1,2,3,7,8-PeCDD	0.24	J q	48	0.21	pg/L	1		8290	Total/NA
1,2,3,7,8-PeCDF	0.72	J B	48	0.16	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDD	2.2	J B	48	0.21	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	0.64	J q B	48	0.21	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	0.43	J q B	48	0.18	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDF	0.48	J B	48	0.15	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDF	0.35	J q B	48	0.14	pg/L	1		8290	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: EVBMP0009s019 (Continued)

Lab Sample ID: 570-131083-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,4,6,7,8-HxCDF	0.46	J B	48	0.13	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.86	J B	48	0.14	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	11	J B	48	0.48	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	4.4	J B	48	0.28	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	0.58	J B	48	0.30	pg/L	1		8290	Total/NA
OCDD	140	B	96	0.65	pg/L	1		8290	Total/NA
OCDF	12	J B	96	0.25	pg/L	1		8290	Total/NA
Copper	1.52	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.240	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.31	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Turbidity	1.6	H H3	0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	1.60		1.00	0.829	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EVBMP0007S018
Date Collected: 03/11/23 09:05
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.6	0.24	pg/L		03/21/23 05:14	03/24/23 14:02	1
2,3,7,8-TCDF	ND		9.6	0.14	pg/L		03/21/23 05:14	03/24/23 14:02	1
1,2,3,7,8-PeCDD	ND		48	0.21	pg/L		03/21/23 05:14	03/24/23 14:02	1
1,2,3,7,8-PeCDF	**0.51**	**J q B**	48	0.13	pg/L		03/21/23 05:14	03/24/23 14:02	1
2,3,4,7,8-PeCDF	**0.28**	**J**	48	0.14	pg/L		03/21/23 05:14	03/24/23 14:02	1
1,2,3,4,7,8-HxCDD	**2.2**	**J B**	48	0.21	pg/L		03/21/23 05:14	03/24/23 14:02	1
1,2,3,6,7,8-HxCDD	**0.44**	**J B**	48	0.22	pg/L		03/21/23 05:14	03/24/23 14:02	1
1,2,3,7,8,9-HxCDD	**0.43**	**J B**	48	0.19	pg/L		03/21/23 05:14	03/24/23 14:02	1
1,2,3,4,7,8-HxCDF	**0.25**	**J q B**	48	0.12	pg/L		03/21/23 05:14	03/24/23 14:02	1
1,2,3,6,7,8-HxCDF	**0.23**	**J q B**	48	0.11	pg/L		03/21/23 05:14	03/24/23 14:02	1
2,3,4,6,7,8-HxCDF	**0.23**	**J q B**	48	0.10	pg/L		03/21/23 05:14	03/24/23 14:02	1
1,2,3,7,8,9-HxCDF	**0.72**	**J B**	48	0.12	pg/L		03/21/23 05:14	03/24/23 14:02	1
1,2,3,4,6,7,8-HpCDD	**2.8**	**J B**	48	0.20	pg/L		03/21/23 05:14	03/24/23 14:02	1
1,2,3,4,6,7,8-HpCDF	**2.0**	**J q B**	48	0.25	pg/L		03/21/23 05:14	03/24/23 14:02	1
1,2,3,4,7,8,9-HpCDF	ND		48	0.27	pg/L		03/21/23 05:14	03/24/23 14:02	1
OCDD	**22**	**J B**	96	0.34	pg/L		03/21/23 05:14	03/24/23 14:02	1
OCDF	**6.6**	**J B**	96	0.16	pg/L		03/21/23 05:14	03/24/23 14:02	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*87*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-2,3,7,8-TCDF	*96*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-1,2,3,7,8-PeCDD	*87*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-1,2,3,7,8-PeCDF	*99*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-1,2,3,6,7,8-HxCDD	*92*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-2,3,4,7,8-PeCDF	*97*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-1,2,3,4,7,8-HxCDD	*83*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-1,2,3,4,7,8-HxCDF	*89*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*85*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*86*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-1,2,3,6,7,8-HxCDF	*103*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-OCDD	*101*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-1,2,3,7,8,9-HxCDF	*105*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-2,3,4,6,7,8-HxCDF	*107*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*97*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*
13C-OCDF	*112*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:02*	*1*

Client Sample ID: EVBMP0008S021
Date Collected: 03/11/23 09:15
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	**0.28**	**J q**	10	0.27	pg/L		03/21/23 05:14	03/24/23 14:50	1
2,3,7,8-TCDF	ND		10	0.11	pg/L		03/21/23 05:14	03/24/23 14:50	1
1,2,3,7,8-PeCDD	ND		50	0.20	pg/L		03/21/23 05:14	03/24/23 14:50	1
1,2,3,7,8-PeCDF	**0.62**	**J B**	50	0.14	pg/L		03/21/23 05:14	03/24/23 14:50	1
2,3,4,7,8-PeCDF	ND		50	0.15	pg/L		03/21/23 05:14	03/24/23 14:50	1
1,2,3,4,7,8-HxCDD	**2.1**	**J B**	50	0.20	pg/L		03/21/23 05:14	03/24/23 14:50	1
1,2,3,6,7,8-HxCDD	**0.45**	**J q B**	50	0.19	pg/L		03/21/23 05:14	03/24/23 14:50	1
1,2,3,7,8,9-HxCDD	**0.28**	**J q B**	50	0.17	pg/L		03/21/23 05:14	03/24/23 14:50	1
1,2,3,4,7,8-HxCDF	**0.18**	**J q B**	50	0.12	pg/L		03/21/23 05:14	03/24/23 14:50	1
1,2,3,6,7,8-HxCDF	**0.18**	**J q B**	50	0.11	pg/L		03/21/23 05:14	03/24/23 14:50	1

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0008S021
Date Collected: 03/11/23 09:15
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,6,7,8-HxCDF	**0.21**	**J B**	50	0.10	pg/L		03/21/23 05:14	03/24/23 14:50	1
1,2,3,7,8,9-HxCDF	**0.84**	**J B**	50	0.12	pg/L		03/21/23 05:14	03/24/23 14:50	1
1,2,3,4,6,7,8-HpCDD	**3.9**	**J B**	50	0.18	pg/L		03/21/23 05:14	03/24/23 14:50	1
1,2,3,4,6,7,8-HpCDF	**1.5**	**J q B**	50	0.22	pg/L		03/21/23 05:14	03/24/23 14:50	1
1,2,3,4,7,8,9-HpCDF	ND		50	0.25	pg/L		03/21/23 05:14	03/24/23 14:50	1
OCDD	**56**	**J B**	100	0.49	pg/L		03/21/23 05:14	03/24/23 14:50	1
OCDF	**5.4**	**J B**	100	0.19	pg/L		03/21/23 05:14	03/24/23 14:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*86*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-2,3,7,8-TCDF	*95*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-1,2,3,7,8-PeCDD	*87*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-1,2,3,7,8-PeCDF	*98*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-1,2,3,6,7,8-HxCDD	*92*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-2,3,4,7,8-PeCDF	*99*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-1,2,3,4,7,8-HxCDD	*87*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-1,2,3,4,7,8-HxCDF	*92*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*84*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*86*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-1,2,3,6,7,8-HxCDF	*104*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-OCDD	*98*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-1,2,3,7,8,9-HxCDF	*105*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-2,3,4,6,7,8-HxCDF	*106*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*95*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*
13C-OCDF	*107*		*40 - 135*	*03/21/23 05:14*	*03/24/23 14:50*	*1*

Client Sample ID: EVBMP0009s019
Date Collected: 03/11/23 09:25
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.6	0.27	pg/L		03/21/23 05:14	03/24/23 15:37	1
2,3,7,8-TCDF	**0.29**	**J**	9.6	0.11	pg/L		03/21/23 05:14	03/24/23 15:37	1
1,2,3,7,8-PeCDD	**0.24**	**J q**	48	0.21	pg/L		03/21/23 05:14	03/24/23 15:37	1
1,2,3,7,8-PeCDF	**0.72**	**J B**	48	0.16	pg/L		03/21/23 05:14	03/24/23 15:37	1
2,3,4,7,8-PeCDF	ND		48	0.18	pg/L		03/21/23 05:14	03/24/23 15:37	1
1,2,3,4,7,8-HxCDD	**2.2**	**J B**	48	0.21	pg/L		03/21/23 05:14	03/24/23 15:37	1
1,2,3,6,7,8-HxCDD	**0.64**	**J q B**	48	0.21	pg/L		03/21/23 05:14	03/24/23 15:37	1
1,2,3,7,8,9-HxCDD	**0.43**	**J q B**	48	0.18	pg/L		03/21/23 05:14	03/24/23 15:37	1
1,2,3,4,7,8-HxCDF	**0.48**	**J B**	48	0.15	pg/L		03/21/23 05:14	03/24/23 15:37	1
1,2,3,6,7,8-HxCDF	**0.35**	**J q B**	48	0.14	pg/L		03/21/23 05:14	03/24/23 15:37	1
2,3,4,6,7,8-HxCDF	**0.46**	**J B**	48	0.13	pg/L		03/21/23 05:14	03/24/23 15:37	1
1,2,3,7,8,9-HxCDF	**0.86**	**J B**	48	0.14	pg/L		03/21/23 05:14	03/24/23 15:37	1
1,2,3,4,6,7,8-HpCDD	**11**	**J B**	48	0.48	pg/L		03/21/23 05:14	03/24/23 15:37	1
1,2,3,4,6,7,8-HpCDF	**4.4**	**J B**	48	0.28	pg/L		03/21/23 05:14	03/24/23 15:37	1
1,2,3,4,7,8,9-HpCDF	**0.58**	**J B**	48	0.30	pg/L		03/21/23 05:14	03/24/23 15:37	1
OCDD	**140**	**B**	96	0.65	pg/L		03/21/23 05:14	03/24/23 15:37	1
OCDF	**12**	**J B**	96	0.25	pg/L		03/21/23 05:14	03/24/23 15:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*86*		*40 - 135*	*03/21/23 05:14*	*03/24/23 15:37*	*1*
13C-2,3,7,8-TCDF	*95*		*40 - 135*	*03/21/23 05:14*	*03/24/23 15:37*	*1*

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0009s019
Date Collected: 03/11/23 09:25
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-3
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	87		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-1,2,3,7,8-PeCDF	98		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-1,2,3,6,7,8-HxCDD	92		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-2,3,4,7,8-PeCDF	96		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-1,2,3,4,7,8-HxCDD	84		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-1,2,3,4,7,8-HxCDF	86		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-1,2,3,4,6,7,8-HpCDD	84		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-1,2,3,4,6,7,8-HpCDF	85		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-1,2,3,6,7,8-HxCDF	102		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-OCDD	100		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-1,2,3,7,8,9-HxCDF	106		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-2,3,4,6,7,8-HxCDF	105		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-1,2,3,4,7,8,9-HpCDF	96		40 - 135	03/21/23 05:14	03/24/23 15:37	1
13C-OCDF	111		40 - 135	03/21/23 05:14	03/24/23 15:37	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EVBMP0007S018
Date Collected: 03/11/23 09:05
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/15/23 09:08	03/15/23 12:14	1
Copper	**1.51**	**J**	2.00	0.318	ug/L		03/15/23 09:08	03/15/23 12:14	1
Lead	ND		1.00	0.118	ug/L		03/15/23 09:08	03/15/23 12:14	1

Client Sample ID: EVBMP0008S021
Date Collected: 03/11/23 09:15
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/15/23 09:08	03/15/23 12:16	1
Copper	**1.38**	**J**	2.00	0.318	ug/L		03/15/23 09:08	03/15/23 12:16	1
Lead	**0.141**	**J**	1.00	0.118	ug/L		03/15/23 09:08	03/15/23 12:16	1

Client Sample ID: EVBMP0009s019
Date Collected: 03/11/23 09:25
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/15/23 09:08	03/15/23 12:19	1
Copper	**1.52**	**J**	2.00	0.318	ug/L		03/15/23 09:08	03/15/23 12:19	1
Lead	**0.240**	**J**	1.00	0.118	ug/L		03/15/23 09:08	03/15/23 12:19	1

Client Sample Results

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-131083-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EVBMP0007S018
Date Collected: 03/11/23 09:05
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/16/23 12:47	1
Copper	**1.38**	**J H**	2.00	0.318	ug/L			03/16/23 12:47	1
Lead	ND	H	1.00	0.118	ug/L			03/16/23 12:47	1

Client Sample ID: EVBMP0008S021
Date Collected: 03/11/23 09:15
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/16/23 12:49	1
Copper	**1.23**	**J H**	2.00	0.318	ug/L			03/16/23 12:49	1
Lead	ND	H	1.00	0.118	ug/L			03/16/23 12:49	1

Client Sample ID: EVBMP0009s019
Date Collected: 03/11/23 09:25
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/16/23 12:18	1
Copper	**1.31**	**J H**	2.00	0.318	ug/L			03/16/23 12:18	1
Lead	ND	H	1.00	0.118	ug/L			03/16/23 12:18	1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: EVBMP0007S018
Date Collected: 03/11/23 09:05
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/16/23 18:20	03/17/23 14:42	1

Client Sample ID: EVBMP0008S021
Date Collected: 03/11/23 09:15
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/16/23 18:20	03/17/23 14:43	1

Client Sample ID: EVBMP0009s019
Date Collected: 03/11/23 09:25
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/16/23 18:20	03/17/23 14:45	1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: EVBMP0007S018
Lab Sample ID: 570-131083-1
Date Collected: 03/11/23 09:05
Matrix: Water
Date Received: 03/13/23 19:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/14/23 19:37	03/16/23 19:39	1

Client Sample ID: EVBMP0008S021
Lab Sample ID: 570-131083-2
Date Collected: 03/11/23 09:15
Matrix: Water
Date Received: 03/13/23 19:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/14/23 19:37	03/16/23 19:41	1

Client Sample ID: EVBMP0009s019
Lab Sample ID: 570-131083-3
Date Collected: 03/11/23 09:25
Matrix: Water
Date Received: 03/13/23 19:25

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/14/23 19:37	03/16/23 19:46	1

General Chemistry

Client Sample ID: EVBMP0007S018
Date Collected: 03/11/23 09:05
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	2.80		1.00	0.829	mg/L			03/15/23 16:31	1

Client Sample ID: EVBMP0008S021
Date Collected: 03/11/23 09:15
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	1.9	H H3	0.05	0.05	NTU			03/14/23 17:32	1
Total Suspended Solids (SM 2540D)	1.00		1.00	0.829	mg/L			03/15/23 16:31	1

Client Sample ID: EVBMP0009s019
Date Collected: 03/11/23 09:25
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	1.6	H H3	0.05	0.05	NTU			03/14/23 17:34	1
Total Suspended Solids (SM 2540D)	1.60		1.00	0.829	mg/L			03/15/23 16:31	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EVBMP0007S018
Date Collected: 03/11/23 09:05
Date Received: 03/13/23 19:25
Lab Sample ID: 570-131083-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			03/20/23 18:52	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/20/23 18:52	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			03/20/23 18:52	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/20/23 18:52	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/20/23 18:52	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			03/20/23 18:52	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			03/20/23 18:52	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/20/23 18:52	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			03/20/23 18:52	1

Client Sample ID: EVBMP0008S021
Date Collected: 03/11/23 09:15
Date Received: 03/13/23 19:25
Lab Sample ID: 570-131083-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			03/20/23 19:03	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/20/23 19:03	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			03/20/23 19:03	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/20/23 19:03	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/20/23 19:03	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			03/20/23 19:03	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			03/20/23 19:03	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/20/23 19:03	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			03/20/23 19:03	1

Client Sample ID: EVBMP0009s019
Date Collected: 03/11/23 09:25
Date Received: 03/13/23 19:25
Lab Sample ID: 570-131083-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			03/20/23 19:27	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			03/20/23 19:27	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			03/20/23 19:27	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			03/20/23 19:27	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			03/20/23 19:27	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			03/20/23 19:27	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			03/20/23 19:27	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			03/20/23 19:27	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			03/20/23 19:27	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	03/11/23
Date Received:	03/13/23
Work Order No:	570-131083
Date Analyzed:	03/16/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0007S018		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	03/11/23
Date Received:	03/13/23
Work Order No:	570-131083
Date Analyzed:	03/16/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0008S021		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering Group, Inc.

Date Sampled:	03/11/23
Date Received:	03/13/23
Work Order No:	570-131083
Date Analyzed:	03/16/23
Method:	ASTM D4464M

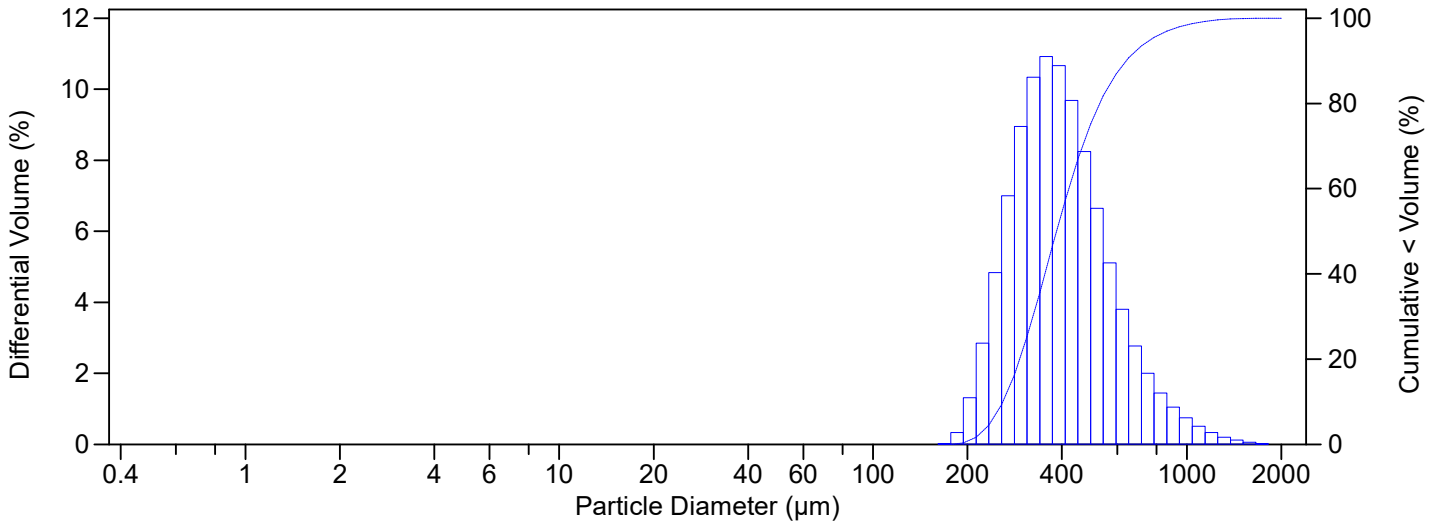
Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0009s019		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

File name:	C:\LS13320\STD SAND_16 Mar 2023_20.06.05.$ls		
	STD SAND_16 Mar 2023_20.06.05.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	21		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.73%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:04 16 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_16 Mar 2023_20.06.05.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	426.7 µm	S.D.:	176.3 µm
Median:	384.9 µm	Variance:	31078 µm^2
Mean/Median ratio:	1.109	Skewness:	1.955 Right skewed
Mode:	356.1 µm	Kurtosis:	5.896 Leptokurtic

d_{10}: 259.3 µm d_{50}: 384.9 µm d_{90}: 641.9 µm

Folk and Ward Statistics (Phi)

Mean:	1.34	Median:	1.38	Deviation:	0.51
Skewness:	-0.14	Kurtosis:	1.03		

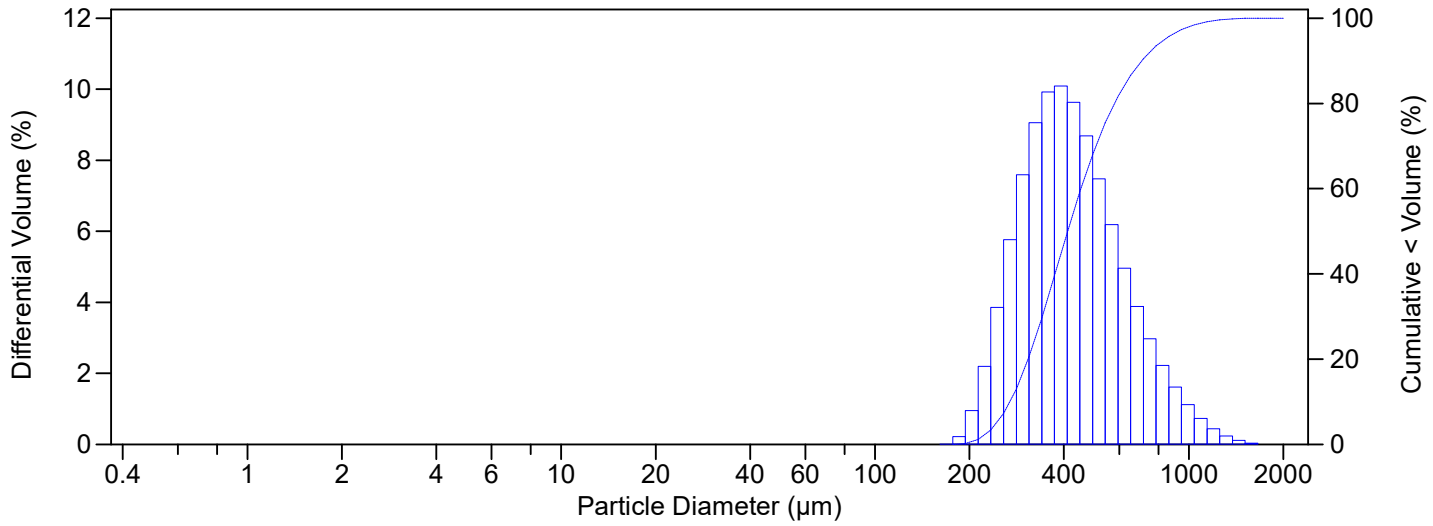
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
236.3 µm	280.8 µm	308.7 µm	353.2 µm	384.9 µm	492.8 µm	564.6 µm	769.3 µm

Particle Diameter µm	STD SAND _16 Mar 2023_20.06 .05.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.89
250	68.2
500	22.4
1000	1.58
2000	

STD SAND_16 Mar 2023_20.06.05.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.33
0.412	0	22.73	0	1255	0.21
0.452	0	24.95	0	1377	0.12
0.496	0	27.39	0	1512	0.058
0.545	0	30.07	0	1660	0.014
0.598	0	33.01	0	1822	0.00072
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.021		
3.206	0	176.9	0.34		
3.519	0	194.2	1.31		
3.863	0	213.2	2.85		
4.241	0	234.1	4.84		
4.656	0	256.9	7.00		
5.111	0	282.1	8.95		
5.611	0	309.6	10.3		
6.159	0	339.9	10.9		
6.761	0	373.1	10.7		
7.422	0	409.6	9.69		
8.148	0	449.7	8.25		
8.944	0	493.6	6.65		
9.819	0	541.9	5.11		
10.78	0	594.9	3.81		
11.83	0	653.0	2.77		
12.99	0	716.9	2.01		
14.26	0	786.9	1.45		
15.65	0	863.9	1.05		
17.18	0	948.3	0.75		
18.86	0	1041	0.51		

File name:	C:\LS13320\STD SAND_16 Mar 2023_20.51.40.$ls		
	STD SAND_16 Mar 2023_20.51.40.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	23		
	Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.61%		
LS 13 320	Aqueous Liquid Module		
Start time:	20:50 16 Mar 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	9%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_16 Mar 2023_20.51.40.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	457.5 µm	S.D.:	189.6 µm
Median:	411.0 µm	Variance:	35967 µm^2
Mean/Median ratio:	1.113	Skewness:	1.556 Right skewed
Mode:	391.0 µm	Kurtosis:	3.281 Leptokurtic

d_{10}: 268.9 µm d_{50}: 411.0 µm d_{90}: 708.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.25	Median:	1.28	Deviation:	0.54
Skewness:	-0.13	Kurtosis:	1.00		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
243.6 µm	292.9 µm	324.3 µm	374.7 µm	411.0 µm	538.9 µm	622.3 µm	839.6 µm

Particle Diameter µm	STD SAND _16 Mar 2023_20.51 .40.$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.08
250	62.9
500	29.0
1000	2.06
2000	

STD SAND_16 Mar 2023_20.51.40.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.44
0.412	0	22.73	0	1255	0.24
0.452	0	24.95	0	1377	0.11
0.496	0	27.39	0	1512	0.032
0.545	0	30.07	0	1660	0.0024
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.013		
3.206	0	176.9	0.22		
3.519	0	194.2	0.95		
3.863	0	213.2	2.20		
4.241	0	234.1	3.86		
4.656	0	256.9	5.76		
5.111	0	282.1	7.59		
5.611	0	309.6	9.05		
6.159	0	339.9	9.92		
6.761	0	373.1	10.1		
7.422	0	409.6	9.63		
8.148	0	449.7	8.69		
8.944	0	493.6	7.48		
9.819	0	541.9	6.19		
10.78	0	594.9	4.97		
11.83	0	653.0	3.88		
12.99	0	716.9	2.97		
14.26	0	786.9	2.22		
15.65	0	863.9	1.62		
17.18	0	948.3	1.12		
18.86	0	1041	0.73		

Isotope Dilution Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-131083-1

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (40-135)	TCDF (40-135)	PeCDD (40-135)	PeCDF (40-135)	HxDD (40-135)	PeCF (40-135)	HxCDD (40-135)	HxCDF (40-135)
570-131083-1	EVBMP0007S018	87	96	87	99	92	97	83	89
570-131083-2	EVBMP0008S021	86	95	87	98	92	99	87	92
570-131083-3	EVBMP0009s019	86	95	87	98	92	96	84	86
LCS 320-662206/2-A	Lab Control Sample	87	96	90	99	93	100	85	90
LCSD 320-662206/3-A	Lab Control Sample Dup	87	96	88	99	92	98	83	89
MB 320-662206/1-A	Method Blank	88	97	90	100	89	96	81	85

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (40-135)	HpCDF (40-135)	HxDF (40-135)	OCDD (40-135)	HxCF (40-135)	13CHxCF (40-135)	HpCDF2 (40-135)	OCDF (40-135)
570-131083-1	EVBMP0007S018	85	86	103	101	105	107	97	112
570-131083-2	EVBMP0008S021	84	86	104	98	105	106	95	107
570-131083-3	EVBMP0009s019	84	85	102	100	106	105	96	111
LCS 320-662206/2-A	Lab Control Sample	86	86	102	102	105	105	96	111
LCSD 320-662206/3-A	Lab Control Sample Dup	87	86	102	100	107	107	98	111
MB 320-662206/1-A	Method Blank	84	84	98	97	105	103	96	106

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
OCDD = 13C-OCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDF = 13C-OCDF

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-662206/1-A
Matrix: Water
Analysis Batch: 662874

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 662206

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.25	pg/L		03/21/23 05:14	03/24/23 08:29	1
2,3,7,8-TCDF	ND		10	0.12	pg/L		03/21/23 05:14	03/24/23 08:29	1
1,2,3,7,8-PeCDD	ND		50	0.17	pg/L		03/21/23 05:14	03/24/23 08:29	1
1,2,3,7,8-PeCDF	0.6346	J q	50	0.14	pg/L		03/21/23 05:14	03/24/23 08:29	1
2,3,4,7,8-PeCDF	ND		50	0.17	pg/L		03/21/23 05:14	03/24/23 08:29	1
1,2,3,4,7,8-HxCDD	1.831	J q	50	0.20	pg/L		03/21/23 05:14	03/24/23 08:29	1
1,2,3,6,7,8-HxCDD	0.6923	J q	50	0.20	pg/L		03/21/23 05:14	03/24/23 08:29	1
1,2,3,7,8,9-HxCDD	0.5014	J q	50	0.18	pg/L		03/21/23 05:14	03/24/23 08:29	1
1,2,3,4,7,8-HxCDF	0.4119	J	50	0.18	pg/L		03/21/23 05:14	03/24/23 08:29	1
1,2,3,6,7,8-HxCDF	0.3054	J q	50	0.17	pg/L		03/21/23 05:14	03/24/23 08:29	1
2,3,4,6,7,8-HxCDF	0.3118	J	50	0.16	pg/L		03/21/23 05:14	03/24/23 08:29	1
1,2,3,7,8,9-HxCDF	0.9442	J	50	0.17	pg/L		03/21/23 05:14	03/24/23 08:29	1
1,2,3,4,6,7,8-HpCDD	1.627	J q	50	0.22	pg/L		03/21/23 05:14	03/24/23 08:29	1
1,2,3,4,6,7,8-HpCDF	1.189	J	50	0.23	pg/L		03/21/23 05:14	03/24/23 08:29	1
1,2,3,4,7,8,9-HpCDF	0.6534	J	50	0.25	pg/L		03/21/23 05:14	03/24/23 08:29	1
OCDD	9.471	J	100	0.25	pg/L		03/21/23 05:14	03/24/23 08:29	1
OCDF	3.566	J	100	0.16	pg/L		03/21/23 05:14	03/24/23 08:29	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*88*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-2,3,7,8-TCDF	*97*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-1,2,3,7,8-PeCDD	*90*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-1,2,3,7,8-PeCDF	*100*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-1,2,3,6,7,8-HxCDD	*89*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-2,3,4,7,8-PeCDF	*96*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-1,2,3,4,7,8-HxCDF	*85*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*84*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*84*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-1,2,3,6,7,8-HxCDF	*98*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-OCDD	*97*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-1,2,3,7,8,9-HxCDF	*105*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-2,3,4,6,7,8-HxCDF	*103*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*96*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*
13C-OCDF	*106*		*40 - 135*	*03/21/23 05:14*	*03/24/23 08:29*	*1*

Lab Sample ID: LCS 320-662206/2-A
Matrix: Water
Analysis Batch: 662874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 662206

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	200	214.2		pg/L		107	72 - 128
2,3,7,8-TCDF	200	227.9		pg/L		114	67 - 135
1,2,3,7,8-PeCDD	1000	1057		pg/L		106	71 - 135
1,2,3,7,8-PeCDF	1000	1066		pg/L		107	70 - 133
2,3,4,7,8-PeCDF	1000	1073		pg/L		107	69 - 135
1,2,3,4,7,8-HxCDD	1000	1049		pg/L		105	67 - 130
1,2,3,6,7,8-HxCDD	1000	1062		pg/L		106	61 - 144
1,2,3,7,8,9-HxCDD	1000	1045		pg/L		104	61 - 140

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-662206/2-A
Matrix: Water
Analysis Batch: 662874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 662206

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3,4,7,8-HxCDF			1000	1024		pg/L		102	69 - 140		
1,2,3,6,7,8-HxCDF			1000	1043		pg/L		104	62 - 155		
2,3,4,6,7,8-HxCDF			1000	1030		pg/L		103	70 - 146		
1,2,3,7,8,9-HxCDF			1000	1033		pg/L		103	71 - 142		
1,2,3,4,6,7,8-HpCDD			1000	1042		pg/L		104	71 - 134		
1,2,3,4,6,7,8-HpCDF			1000	1088		pg/L		109	68 - 137		
1,2,3,4,7,8,9-HpCDF			1000	1045		pg/L		105	74 - 134		
OCDD			2000	2084		pg/L		104	72 - 134		
OCDF			2000	2100		pg/L		105	65 - 143		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*87*		*40 - 135*
13C-2,3,7,8-TCDF	*96*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*90*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*99*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*93*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*100*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*85*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*90*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*86*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*86*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*102*		*40 - 135*
13C-OCDD	*102*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*105*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*105*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*96*		*40 - 135*
13C-OCDF	*111*		*40 - 135*

Lab Sample ID: LCSD 320-662206/3-A
Matrix: Water
Analysis Batch: 662874

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 662206

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			200	216.0		pg/L		108	72 - 128	1	20
2,3,7,8-TCDF			200	230.6		pg/L		115	67 - 135	1	20
1,2,3,7,8-PeCDD			1000	1069		pg/L		107	71 - 135	1	20
1,2,3,7,8-PeCDF			1000	1082		pg/L		108	70 - 133	1	20
2,3,4,7,8-PeCDF			1000	1074		pg/L		107	69 - 135	0	20
1,2,3,4,7,8-HxCDD			1000	1073		pg/L		107	67 - 130	2	20
1,2,3,6,7,8-HxCDD			1000	1074		pg/L		107	61 - 144	1	20
1,2,3,7,8,9-HxCDD			1000	1094		pg/L		109	61 - 140	5	20
1,2,3,4,7,8-HxCDF			1000	1050		pg/L		105	69 - 140	3	20
1,2,3,6,7,8-HxCDF			1000	1043		pg/L		104	62 - 155	0	20
2,3,4,6,7,8-HxCDF			1000	1050		pg/L		105	70 - 146	2	20
1,2,3,7,8,9-HxCDF			1000	1045		pg/L		104	71 - 142	1	20
1,2,3,4,6,7,8-HpCDD			1000	1060		pg/L		106	71 - 134	2	20
1,2,3,4,6,7,8-HpCDF			1000	1099		pg/L		110	68 - 137	1	20
1,2,3,4,7,8,9-HpCDF			1000	1052		pg/L		105	74 - 134	1	20
OCDD			2000	2141		pg/L		107	72 - 134	3	20

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-662206/3-A
Matrix: Water
Analysis Batch: 662874

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 662206

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
OCDF			2000	2138		pg/L		107	65 - 143	2	20

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*87*		*40 - 135*
13C-2,3,7,8-TCDF	*96*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*88*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*99*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*92*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*98*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*83*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*89*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*87*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*86*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*102*		*40 - 135*
13C-OCDD	*100*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*107*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*107*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*98*		*40 - 135*
13C-OCDF	*111*		*40 - 135*

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-311694/1-A
Matrix: Water
Analysis Batch: 311853

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 311694

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/15/23 09:08	03/15/23 12:02	1
Copper	ND		2.00	0.318	ug/L		03/15/23 09:08	03/15/23 12:02	1
Lead	ND		1.00	0.118	ug/L		03/15/23 09:08	03/15/23 12:02	1

Lab Sample ID: LCS 570-311694/2-A
Matrix: Water
Analysis Batch: 311853

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 311694

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium			80.0	78.12		ug/L		98	85 - 115
Copper			80.0	77.71		ug/L		97	85 - 115
Lead			80.0	78.32		ug/L		98	85 - 115

Lab Sample ID: LCSD 570-311694/3-A
Matrix: Water
Analysis Batch: 311853

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 311694

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	79.71		ug/L		100	85 - 115	2	20
Copper			80.0	80.44		ug/L		101	85 - 115	3	20
Lead			80.0	80.32		ug/L		100	85 - 115	3	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-312120/1-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L			03/16/23 11:52	1
Copper	ND		2.00	0.318	ug/L			03/16/23 11:52	1
Lead	ND		1.00	0.118	ug/L			03/16/23 11:52	1

Lab Sample ID: LCS 570-312120/2-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	77.57		ug/L		97	85 - 115
Copper	80.0	77.89		ug/L		97	85 - 115
Lead	80.0	80.29		ug/L		100	85 - 115

Lab Sample ID: LCSD 570-312120/3-A
Matrix: Water
Analysis Batch: 312206

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	79.59		ug/L		99	85 - 115	3	20
Copper	80.0	79.16		ug/L		99	85 - 115	2	20
Lead	80.0	81.99		ug/L		102	85 - 115	2	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MRL 570-310910/4-C
Matrix: Water
Analysis Batch: 312612

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 311612

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	10.0	10.60		ug/L		106	

Lab Sample ID: MB 570-312325/1-A
Matrix: Water
Analysis Batch: 312612

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 312325

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/16/23 18:20	03/17/23 14:29	1

Lab Sample ID: LCS 570-312325/2-A
Matrix: Water
Analysis Batch: 312612

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 312325

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.007378		mg/L		92	85 - 115

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 570-312325/3-A
Matrix: Water
Analysis Batch: 312612

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 312325

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00800	0.007495		mg/L		94	85 - 115	2	10

Lab Sample ID: MB 570-311254/1-B
Matrix: Water
Analysis Batch: 312558

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 311580

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/14/23 19:37	03/16/23 19:08	1

Lab Sample ID: LCS 570-311254/2-B
Matrix: Water
Analysis Batch: 312558

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 311580

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury			0.00800	0.008237	H	mg/L		103	85 - 115

Lab Sample ID: LCSD 570-311254/3-B
Matrix: Water
Analysis Batch: 312558

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 311580

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00800	0.008168	H	mg/L		102	85 - 115	1	10

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-311520/3
Matrix: Water
Analysis Batch: 311520

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity			0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-311918/1
Matrix: Water
Analysis Batch: 311918

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			03/15/23 16:31	1

Lab Sample ID: LCS 570-311918/2
Matrix: Water
Analysis Batch: 311918

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids			100	95.00		mg/L		95	77 - 116

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 570-311918/3
Matrix: Water
Analysis Batch: 311918

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	95.00		mg/L		95	77 - 116	0	10

Specialty Organics

Prep Batch: 662206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Total/NA	Water	8290	
570-131083-2	EVBMP0008S021	Total/NA	Water	8290	
570-131083-3	EVBMP0009s019	Total/NA	Water	8290	
MB 320-662206/1-A	Method Blank	Total/NA	Water	8290	
LCS 320-662206/2-A	Lab Control Sample	Total/NA	Water	8290	
LCSD 320-662206/3-A	Lab Control Sample Dup	Total/NA	Water	8290	

Analysis Batch: 662874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Total/NA	Water	8290	662206
570-131083-2	EVBMP0008S021	Total/NA	Water	8290	662206
570-131083-3	EVBMP0009s019	Total/NA	Water	8290	662206
MB 320-662206/1-A	Method Blank	Total/NA	Water	8290	662206
LCS 320-662206/2-A	Lab Control Sample	Total/NA	Water	8290	662206
LCSD 320-662206/3-A	Lab Control Sample Dup	Total/NA	Water	8290	662206

Metals

Leach Batch: 310910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 570-310910/4-C	Lab Control Sample	Total/NA	Water	1311	

Filtration Batch: 311254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Dissolved	Water	Filtration	
570-131083-2	EVBMP0008S021	Dissolved	Water	Filtration	
570-131083-3	EVBMP0009s019	Dissolved	Water	Filtration	
MB 570-311254/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-311254/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-311254/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	

Prep Batch: 311580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Dissolved	Water	245.1	311254
570-131083-2	EVBMP0008S021	Dissolved	Water	245.1	311254
570-131083-3	EVBMP0009s019	Dissolved	Water	245.1	311254
MB 570-311254/1-B	Method Blank	Dissolved	Water	245.1	311254
LCS 570-311254/2-B	Lab Control Sample	Dissolved	Water	245.1	311254
LCSD 570-311254/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	311254

Prep Batch: 311612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 570-310910/4-C	Lab Control Sample	Total/NA	Water	7470A	310910

Prep Batch: 311694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Total Recoverable	Water	200.8	
570-131083-2	EVBMP0008S021	Total Recoverable	Water	200.8	
570-131083-3	EVBMP0009s019	Total Recoverable	Water	200.8	
MB 570-311694/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-311694/2-A	Lab Control Sample	Total Recoverable	Water	200.8	

Metals (Continued)

Prep Batch: 311694 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-311694/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Analysis Batch: 311853

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Total Recoverable	Water	200.8	311694
570-131083-2	EVBMP0008S021	Total Recoverable	Water	200.8	311694
570-131083-3	EVBMP0009s019	Total Recoverable	Water	200.8	311694
MB 570-311694/1-A	Method Blank	Total Recoverable	Water	200.8	311694
LCS 570-311694/2-A	Lab Control Sample	Total Recoverable	Water	200.8	311694
LCSD 570-311694/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	311694

Filtration Batch: 312120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Dissolved	Water	Filtration	
570-131083-2	EVBMP0008S021	Dissolved	Water	Filtration	
570-131083-3	EVBMP0009s019	Dissolved	Water	Filtration	
MB 570-312120/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-312120/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-312120/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 312206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Dissolved	Water	200.8	312120
570-131083-2	EVBMP0008S021	Dissolved	Water	200.8	312120
570-131083-3	EVBMP0009s019	Dissolved	Water	200.8	312120
MB 570-312120/1-A	Method Blank	Dissolved	Water	200.8	312120
LCS 570-312120/2-A	Lab Control Sample	Dissolved	Water	200.8	312120
LCSD 570-312120/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	312120

Prep Batch: 312325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Total/NA	Water	245.1	
570-131083-2	EVBMP0008S021	Total/NA	Water	245.1	
570-131083-3	EVBMP0009s019	Total/NA	Water	245.1	
MB 570-312325/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-312325/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-312325/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Analysis Batch: 312558

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Dissolved	Water	245.1	311580
570-131083-2	EVBMP0008S021	Dissolved	Water	245.1	311580
570-131083-3	EVBMP0009s019	Dissolved	Water	245.1	311580
MB 570-311254/1-B	Method Blank	Dissolved	Water	245.1	311580
LCS 570-311254/2-B	Lab Control Sample	Dissolved	Water	245.1	311580
LCSD 570-311254/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	311580

Analysis Batch: 312612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Total/NA	Water	245.1	312325
570-131083-2	EVBMP0008S021	Total/NA	Water	245.1	312325

Metals (Continued)

Analysis Batch: 312612 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-3	EVBMP0009s019	Total/NA	Water	245.1	312325
MB 570-312325/1-A	Method Blank	Total/NA	Water	245.1	312325
LCS 570-312325/2-A	Lab Control Sample	Total/NA	Water	245.1	312325
LCSD 570-312325/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	312325
MRL 570-310910/4-C	Lab Control Sample	Total/NA	Water	245.1	311612

General Chemistry

Analysis Batch: 311520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-2	EVBMP0008S021	Total/NA	Water	SM 2130B	
570-131083-3	EVBMP0009s019	Total/NA	Water	SM 2130B	
LCSSRM 570-311520/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 311918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Total/NA	Water	SM 2540D	
570-131083-2	EVBMP0008S021	Total/NA	Water	SM 2540D	
570-131083-3	EVBMP0009s019	Total/NA	Water	SM 2540D	
MB 570-311918/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-311918/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-311918/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Geotechnical

Analysis Batch: 313070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-131083-1	EVBMP0007S018	Total/NA	Water	D4464	
570-131083-2	EVBMP0008S021	Total/NA	Water	D4464	
570-131083-3	EVBMP0009s019	Total/NA	Water	D4464	
LCS 570-313070/21	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-313070/23	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-131083-1

Client Sample ID: EVBMP0007S018

Lab Sample ID: 570-131083-1

Date Collected: 03/11/23 09:05

Matrix: Water

Date Received: 03/13/23 19:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1044.2 mL	20.0 uL	662206	03/21/23 05:14	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	662874	03/24/23 14:02	DB	EET SAC
	Instrument ID: 12D5									
Dissolved	Filtration	Filtration			50 mL	50 mL	312120	03/16/23 10:02	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			312206	03/16/23 12:47	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	311694	03/15/23 09:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			311853	03/15/23 12:14	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Filtration	Filtration			25 mL	25 mL	311254	03/14/23 04:21	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	311580	03/14/23 19:37	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			312558	03/16/23 19:39	C0YH	EET CAL 4
	Instrument ID: HG7									
Total/NA	Prep	245.1			25 mL	50 mL	312325	03/16/23 18:20	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			312612	03/17/23 14:42	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	311918	03/15/23 16:31	WVA4	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	D4464		1			313070	03/20/23 18:52	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0008S021

Lab Sample ID: 570-131083-2

Date Collected: 03/11/23 09:15

Matrix: Water

Date Received: 03/13/23 19:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			995.8 mL	20.0 uL	662206	03/21/23 05:14	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	662874	03/24/23 14:50	DB	EET SAC
	Instrument ID: 12D5									
Dissolved	Filtration	Filtration			50 mL	50 mL	312120	03/16/23 10:02	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			312206	03/16/23 12:49	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	311694	03/15/23 09:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			311853	03/15/23 12:16	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Filtration	Filtration			25 mL	25 mL	311254	03/14/23 04:21	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	311580	03/14/23 19:37	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			312558	03/16/23 19:41	C0YH	EET CAL 4
	Instrument ID: HG7									
Total/NA	Prep	245.1			25 mL	50 mL	312325	03/16/23 18:20	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			312612	03/17/23 14:43	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			311520	03/14/23 17:32	ZVB7	EET CAL 4
	Instrument ID: TUR4									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-131083-1

Client Sample ID: EVBMP0008S021

Date Collected: 03/11/23 09:15
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	311918	03/15/23 16:31	WVA4	EET CAL 4
Total/NA	Analysis	D4464		1			313070	03/20/23 19:03	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0009s019

Date Collected: 03/11/23 09:25
Date Received: 03/13/23 19:25

Lab Sample ID: 570-131083-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1047 mL	20.0 uL	662206	03/21/23 05:14	FC	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	662874	03/24/23 15:37	DB	EET SAC
	Instrument ID: 12D5									
Dissolved	Filtration	Filtration			50 mL	50 mL	312120	03/16/23 10:02	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			312206	03/16/23 12:18	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Total Recoverable	Prep	200.8			50 mL	50 mL	311694	03/15/23 09:08	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			311853	03/15/23 12:19	Y2WS	EET CAL 4
	Instrument ID: ICPMS10									
Dissolved	Filtration	Filtration			25 mL	25 mL	311254	03/14/23 04:21	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	311580	03/14/23 19:37	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			312558	03/16/23 19:46	C0YH	EET CAL 4
	Instrument ID: HG7									
Total/NA	Prep	245.1			25 mL	50 mL	312325	03/16/23 18:20	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			312612	03/17/23 14:45	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			311520	03/14/23 17:34	ZVB7	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	311918	03/15/23 16:31	WVA4	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	D4464		1			313070	03/20/23 19:27	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc.
Job ID: 570-131083-1
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8		Water	Cadmium
200.8		Water	Copper
200.8		Water	Lead
200.8	200.8	Water	Cadmium
200.8	200.8	Water	Copper
200.8	200.8	Water	Lead
245.1	245.1	Water	Mercury
D4464		Water	Clay (less than 0.00391 mm)
D4464		Water	Coarse Sand (0.5mm to 1mm)
D4464		Water	Fine Sand (0.125 to 0.25mm)
D4464		Water	Gravel (greater than 2 mm)
D4464		Water	Medium Sand (0.25 to 0.5 mm)
D4464		Water	Silt (0.00391 to 0.0625mm)
D4464		Water	Total Silt and Clay (0 to 0.0626mm)
D4464		Water	Very Coarse Sand (1 to 2mm)
D4464		Water	Very Fine Sand (0.0625 to 0.125 mm)
SM 2130B		Water	Turbidity

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2897	01-22-24

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-131083-1

Method	Method Description	Protocol	Laboratory
8290	Dioxins and Furans (HRGC/HRMS)	SW846	EET SAC
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
8290	Separatory Funnel (Liquid-Liquid) Extraction of Dioxins and Furans	SW846	EET SAC
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-131083-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-131083-1	EVBMP0007S018	Water	03/11/23 09:05	03/13/23 19:25
570-131083-2	EVBMP0008S021	Water	03/11/23 09:15	03/13/23 19:25
570-131083-3	EVBMP0009s019	Water	03/11/23 09:25	03/13/23 19:25

Chain of Custody Record

COC Number: CALS03132301

JACOBS

3/12/2023 11:38:54 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180.1/2130B	200.8/245.1	200.8/245.1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0007S018	11-Mar-23 9:05	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4'C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
EVBMP0008S021	11-Mar-23 9:15	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4'C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	BRYAN BENSON	3/11/23 900
Relinquished by	BRYAN BENSON	3/13/23 1000
Received by	Randy Dean	3/13/23 1000
Relinquished by	Randy Dean	3/13/23 1317
Received by	EC	3/13/23 1317
Relinquished by		3/13/23 1925
	EC	3-13-23 19:25

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** 2.5/2.5 Sch

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

570-131083 Chain of Custody

Chain of Custody Record

COC Number: CALS03132301

JACOBS

3/12/2023 11:38:55 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180.1/2130B	200.8/245.1	200.8/245.1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0009S019	11-Mar-23 9:25	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4'C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN BENSON	3/11/23 900
Relinquished by	BRYAN BENSON	3/13/23 1000
Received by	Randy Dean	3/13/23 1000
Relinquished by	Randy Dean	3/13/23 1317
Received by	EC	3/13/23 1317
Relinquished by:	EC	3/13/23 1925
	EC	3-13-23 19:25

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On ice: yes / no **Cooler Temp** _____

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-210726.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-131083-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 3/24/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EVBMP0007S018 (570-131083-1)	3/11/23	09:05 Pacific		Water			X	2	
EVBMP0008S021 (570-131083-2)	3/11/23	09:15 Pacific		Water			X	2	
EVBMP0009s019 (570-131083-3)	3/11/23	09:25 Pacific		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		03/15/23 14:26	EC		3.16.23 0915	EETSL
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.3

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc. Job Number: 570-131083-1

Login Number: 131083 **List Source: Eurofins Calscience**
List Number: 1
Creator: Skinner, Alma D

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-131083-1

Login Number: 131083
List Number: 2
Creator: Oropeza, Salvador

List Source: Eurofins Sacramento
List Creation: 03/16/23 03:06 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

Generated 4/17/2023 4:07:07 PM

JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-132368-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



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4/17/2023 4:07:07 PM

Authorized for release by
Lori Thompson, Project Manager I
Lori.Thompson@et.eurofinsus.com
(657)212-3035

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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-132368-1

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Metals

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
H3	Sample was received and analyzed past holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-132368-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-132368-1

Receipt
The samples were received on 3/23/2023 7:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.9°C

Dioxin
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 2540D: A sample volume less than 1L, that yielded less than 2.5 mg dried residue, was used for analysis for the following sample: EVBMP0009S020 (570-132368-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Geotechnical
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-132368-1

Client Sample ID: EVBMP0007S019 — Lab Sample ID: 570-132368-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF	0.88	J	11	0.36	pg/L	1		8290	Total/NA
1,2,3,7,8-PeCDD	0.90	J	53	0.56	pg/L	1		8290	Total/NA
1,2,3,7,8-PeCDF	1.5	J B	53	0.38	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDD	2.8	J B	53	0.62	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	2.3	J	53	0.61	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	1.5	J q	53	0.54	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDF	3.5	J B	53	0.46	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDF	1.7	J B	53	0.43	pg/L	1		8290	Total/NA
2,3,4,6,7,8-HxCDF	0.78	J	53	0.44	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.73	J q	53	0.61	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	15	J B	53	1.8	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	10	J B	53	0.78	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	1.1	J q	53	1.0	pg/L	1		8290	Total/NA
OCDD	200	B	110	1.4	pg/L	1		8290	Total/NA
OCDF	20	J B	110	0.69	pg/L	1		8290	Total/NA
Copper	2.47		2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.431	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	2.28	H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.249	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Total Suspended Solids	2.00		1.00	0.829	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0008S022 — Lab Sample ID: 570-132368-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF	0.42	J q	10	0.27	pg/L	1		8290	Total/NA
1,2,3,7,8-PeCDF	0.98	J B	51	0.32	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDD	2.0	J B	51	0.44	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	0.92	J	51	0.44	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDF	0.43	J q B	51	0.30	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	4.6	J q B	51	0.73	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	2.1	J B	51	0.40	pg/L	1		8290	Total/NA
OCDD	65	J B	100	0.95	pg/L	1		8290	Total/NA
OCDF	5.8	J B	100	0.47	pg/L	1		8290	Total/NA
Copper	1.38	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.323	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.24	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Lead	0.148	J H	1.00	0.118	ug/L	1		200.8	Dissolved
Turbidity	4.5	H H3	0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	4.12		1.25	1.04	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0009S020 — Lab Sample ID: 570-132368-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,7,8-PeCDF	0.69	J B q	50	0.36	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDD	2.3	J B	50	0.47	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDF	0.58	J B q	50	0.24	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDF	0.46	J B	50	0.22	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.81	J q	50	0.34	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	5.9	J B	50	1.3	pg/L	1		8290	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample ID: EVBMP0009S020 (Continued)

Lab Sample ID: 570-132368-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,6,7,8-HpCDF	2.6	J B	50	0.53	pg/L	1		8290	Total/NA
OCDD	78	J B	100	1.3	pg/L	1		8290	Total/NA
OCDF	7.4	J B	100	0.53	pg/L	1		8290	Total/NA
Copper	1.15	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.154	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.12	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Turbidity	1.2	H H3	0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	2.50		1.25	1.04	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EVBMP0007S019
Date Collected: 03/21/23 08:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-1
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		11	0.58	pg/L		04/05/23 10:58	04/12/23 06:06	1
2,3,7,8-TCDF	**0.88**	**J**	11	0.36	pg/L		04/05/23 10:58	04/12/23 06:06	1
1,2,3,7,8-PeCDD	**0.90**	**J**	53	0.56	pg/L		04/05/23 10:58	04/12/23 06:06	1
1,2,3,7,8-PeCDF	**1.5**	**J B**	53	0.38	pg/L		04/05/23 10:58	04/12/23 06:06	1
2,3,4,7,8-PeCDF	ND		53	0.46	pg/L		04/05/23 10:58	04/12/23 06:06	1
1,2,3,4,7,8-HxCDD	**2.8**	**J B**	53	0.62	pg/L		04/05/23 10:58	04/12/23 06:06	1
1,2,3,6,7,8-HxCDD	**2.3**	**J**	53	0.61	pg/L		04/05/23 10:58	04/12/23 06:06	1
1,2,3,7,8,9-HxCDD	**1.5**	**J q**	53	0.54	pg/L		04/05/23 10:58	04/12/23 06:06	1
1,2,3,4,7,8-HxCDF	**3.5**	**J B**	53	0.46	pg/L		04/05/23 10:58	04/12/23 06:06	1
1,2,3,6,7,8-HxCDF	**1.7**	**J B**	53	0.43	pg/L		04/05/23 10:58	04/12/23 06:06	1
2,3,4,6,7,8-HxCDF	**0.78**	**J**	53	0.44	pg/L		04/05/23 10:58	04/12/23 06:06	1
1,2,3,7,8,9-HxCDF	**0.73**	**J q**	53	0.61	pg/L		04/05/23 10:58	04/12/23 06:06	1
1,2,3,4,6,7,8-HpCDD	**15**	**J B**	53	1.8	pg/L		04/05/23 10:58	04/12/23 06:06	1
1,2,3,4,6,7,8-HpCDF	**10**	**J B**	53	0.78	pg/L		04/05/23 10:58	04/12/23 06:06	1
1,2,3,4,7,8,9-HpCDF	**1.1**	**J q**	53	1.0	pg/L		04/05/23 10:58	04/12/23 06:06	1
OCDD	**200**	**B**	110	1.4	pg/L		04/05/23 10:58	04/12/23 06:06	1
OCDF	**20**	**J B**	110	0.69	pg/L		04/05/23 10:58	04/12/23 06:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*78*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-2,3,7,8-TCDF	*68*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-1,2,3,7,8-PeCDD	*83*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-1,2,3,7,8-PeCDF	*79*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-1,2,3,6,7,8-HxCDD	*89*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-2,3,4,7,8-PeCDF	*77*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-1,2,3,4,7,8-HxCDD	*75*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-1,2,3,4,7,8-HxCDF	*71*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*84*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*79*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-1,2,3,6,7,8-HxCDF	*85*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-OCDD	*74*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-1,2,3,7,8,9-HxCDF	*77*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-2,3,4,6,7,8-HxCDF	*81*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*80*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*
13C-OCDF	*73*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:06*	*1*

Client Sample ID: EVBMP0008S022
Date Collected: 03/21/23 08:45
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.50	pg/L		04/05/23 10:58	04/12/23 06:53	1
2,3,7,8-TCDF	**0.42**	**J q**	10	0.27	pg/L		04/05/23 10:58	04/12/23 06:53	1
1,2,3,7,8-PeCDD	ND		51	0.48	pg/L		04/05/23 10:58	04/12/23 06:53	1
1,2,3,7,8-PeCDF	**0.98**	**J B**	51	0.32	pg/L		04/05/23 10:58	04/12/23 06:53	1
2,3,4,7,8-PeCDF	ND		51	0.36	pg/L		04/05/23 10:58	04/12/23 06:53	1
1,2,3,4,7,8-HxCDD	**2.0**	**J B**	51	0.44	pg/L		04/05/23 10:58	04/12/23 06:53	1
1,2,3,6,7,8-HxCDD	**0.92**	**J**	51	0.44	pg/L		04/05/23 10:58	04/12/23 06:53	1
1,2,3,7,8,9-HxCDD	ND		51	0.39	pg/L		04/05/23 10:58	04/12/23 06:53	1
1,2,3,4,7,8-HxCDF	**0.43**	**J q B**	51	0.30	pg/L		04/05/23 10:58	04/12/23 06:53	1
1,2,3,6,7,8-HxCDF	ND		51	0.28	pg/L		04/05/23 10:58	04/12/23 06:53	1

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0008S022
Date Collected: 03/21/23 08:45
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,6,7,8-HxCDF	ND		51	0.28	pg/L		04/05/23 10:58	04/12/23 06:53	1
1,2,3,7,8,9-HxCDF	ND		51	0.38	pg/L		04/05/23 10:58	04/12/23 06:53	1
1,2,3,4,6,7,8-HpCDD	**4.6**	**J q B**	51	0.73	pg/L		04/05/23 10:58	04/12/23 06:53	1
1,2,3,4,6,7,8-HpCDF	**2.1**	**J B**	51	0.40	pg/L		04/05/23 10:58	04/12/23 06:53	1
1,2,3,4,7,8,9-HpCDF	ND		51	0.58	pg/L		04/05/23 10:58	04/12/23 06:53	1
OCDD	**65**	**J B**	100	0.95	pg/L		04/05/23 10:58	04/12/23 06:53	1
OCDF	**5.8**	**J B**	100	0.47	pg/L		04/05/23 10:58	04/12/23 06:53	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*82*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-2,3,7,8-TCDF	*75*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-1,2,3,7,8-PeCDD	*85*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-1,2,3,7,8-PeCDF	*85*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-1,2,3,6,7,8-HxCDD	*96*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-2,3,4,7,8-PeCDF	*84*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-1,2,3,4,7,8-HxCDD	*81*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-1,2,3,4,7,8-HxCDF	*73*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*81*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*88*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-1,2,3,6,7,8-HxCDF	*91*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-OCDD	*71*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-1,2,3,7,8,9-HxCDF	*84*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-2,3,4,6,7,8-HxCDF	*86*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*77*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*
13C-OCDF	*70*		*40 - 135*	*04/05/23 10:58*	*04/12/23 06:53*	*1*

Client Sample ID: EVBMP0009S020
Date Collected: 03/21/23 08:30
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.56	pg/L		04/05/23 10:58	04/12/23 07:41	1
2,3,7,8-TCDF	ND		10	0.33	pg/L		04/05/23 10:58	04/12/23 07:41	1
1,2,3,7,8-PeCDD	ND		50	0.49	pg/L		04/05/23 10:58	04/12/23 07:41	1
1,2,3,7,8-PeCDF	**0.69**	**J B q**	50	0.36	pg/L		04/05/23 10:58	04/12/23 07:41	1
2,3,4,7,8-PeCDF	ND		50	0.43	pg/L		04/05/23 10:58	04/12/23 07:41	1
1,2,3,4,7,8-HxCDD	**2.3**	**J B**	50	0.47	pg/L		04/05/23 10:58	04/12/23 07:41	1
1,2,3,6,7,8-HxCDD	ND		50	0.46	pg/L		04/05/23 10:58	04/12/23 07:41	1
1,2,3,7,8,9-HxCDD	ND		50	0.41	pg/L		04/05/23 10:58	04/12/23 07:41	1
1,2,3,4,7,8-HxCDF	**0.58**	**J B q**	50	0.24	pg/L		04/05/23 10:58	04/12/23 07:41	1
1,2,3,6,7,8-HxCDF	**0.46**	**J B**	50	0.22	pg/L		04/05/23 10:58	04/12/23 07:41	1
2,3,4,6,7,8-HxCDF	ND		50	0.24	pg/L		04/05/23 10:58	04/12/23 07:41	1
1,2,3,7,8,9-HxCDF	**0.81**	**J q**	50	0.34	pg/L		04/05/23 10:58	04/12/23 07:41	1
1,2,3,4,6,7,8-HpCDD	**5.9**	**J B**	50	1.3	pg/L		04/05/23 10:58	04/12/23 07:41	1
1,2,3,4,6,7,8-HpCDF	**2.6**	**J B**	50	0.53	pg/L		04/05/23 10:58	04/12/23 07:41	1
1,2,3,4,7,8,9-HpCDF	ND		50	0.70	pg/L		04/05/23 10:58	04/12/23 07:41	1
OCDD	**78**	**J B**	100	1.3	pg/L		04/05/23 10:58	04/12/23 07:41	1
OCDF	**7.4**	**J B**	100	0.53	pg/L		04/05/23 10:58	04/12/23 07:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*67*		*40 - 135*	*04/05/23 10:58*	*04/12/23 07:41*	*1*
13C-2,3,7,8-TCDF	*58*		*40 - 135*	*04/05/23 10:58*	*04/12/23 07:41*	*1*

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0009S020
Date Collected: 03/21/23 08:30
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-3
Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	69		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-1,2,3,7,8-PeCDF	67		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-1,2,3,6,7,8-HxCDD	81		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-2,3,4,7,8-PeCDF	65		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-1,2,3,4,7,8-HxCDD	68		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-1,2,3,4,7,8-HxCDF	62		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-1,2,3,4,6,7,8-HpCDD	72		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-1,2,3,4,6,7,8-HpCDF	67		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-1,2,3,6,7,8-HxCDF	78		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-OCDD	62		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-1,2,3,7,8,9-HxCDF	68		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-2,3,4,6,7,8-HxCDF	73		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-1,2,3,4,7,8,9-HpCDF	66		40 - 135	04/05/23 10:58	04/12/23 07:41	1
13C-OCDF	60		40 - 135	04/05/23 10:58	04/12/23 07:41	1

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EVBMP0007S019
Date Collected: 03/21/23 08:15
Date Received: 03/23/23 19:20
Lab Sample ID: 570-132368-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/27/23 07:42	03/27/23 11:30	1
Copper	**2.47**		2.00	0.318	ug/L		03/27/23 07:42	03/27/23 11:30	1
Lead	**0.431**	**J**	1.00	0.118	ug/L		03/27/23 07:42	03/27/23 11:30	1

Client Sample ID: EVBMP0008S022
Date Collected: 03/21/23 08:45
Date Received: 03/23/23 19:20
Lab Sample ID: 570-132368-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/27/23 07:42	03/27/23 11:38	1
Copper	**1.38**	**J**	2.00	0.318	ug/L		03/27/23 07:42	03/27/23 11:38	1
Lead	**0.323**	**J**	1.00	0.118	ug/L		03/27/23 07:42	03/27/23 11:38	1

Client Sample ID: EVBMP0009S020
Date Collected: 03/21/23 08:30
Date Received: 03/23/23 19:20
Lab Sample ID: 570-132368-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/27/23 07:42	03/27/23 11:40	1
Copper	**1.15**	**J**	2.00	0.318	ug/L		03/27/23 07:42	03/27/23 11:40	1
Lead	**0.154**	**J**	1.00	0.118	ug/L		03/27/23 07:42	03/27/23 11:40	1

Client Sample Results

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-132368-1

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EVBMP0007S019
Date Collected: 03/21/23 08:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/28/23 09:51	1
Copper	**2.28**	**H**	2.00	0.318	ug/L			03/28/23 09:51	1
Lead	**0.249**	**J H**	1.00	0.118	ug/L			03/28/23 09:51	1

Client Sample ID: EVBMP0008S022
Date Collected: 03/21/23 08:45
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/28/23 09:58	1
Copper	**1.24**	**J H**	2.00	0.318	ug/L			03/28/23 09:58	1
Lead	**0.148**	**J H**	1.00	0.118	ug/L			03/28/23 09:58	1

Client Sample ID: EVBMP0009S020
Date Collected: 03/21/23 08:30
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/28/23 10:00	1
Copper	**1.12**	**J H**	2.00	0.318	ug/L			03/28/23 10:00	1
Lead	ND	H	1.00	0.118	ug/L			03/28/23 10:00	1

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: EVBMP0007S019
Date Collected: 03/21/23 08:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/27/23 16:56	03/28/23 14:32	1

Client Sample ID: EVBMP0008S022
Date Collected: 03/21/23 08:45
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/27/23 16:56	03/28/23 14:34	1

Client Sample ID: EVBMP0009S020
Date Collected: 03/21/23 08:30
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/27/23 16:56	03/28/23 14:35	1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: EVBMP0007S019
Date Collected: 03/21/23 08:15
Date Received: 03/23/23 19:20
Lab Sample ID: 570-132368-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/28/23 18:45	03/30/23 13:25	1

Client Sample ID: EVBMP0008S022
Date Collected: 03/21/23 08:45
Date Received: 03/23/23 19:20
Lab Sample ID: 570-132368-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/28/23 18:45	03/30/23 13:30	1

Client Sample ID: EVBMP0009S020
Date Collected: 03/21/23 08:30
Date Received: 03/23/23 19:20
Lab Sample ID: 570-132368-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/28/23 18:45	03/30/23 13:32	1

General Chemistry

Client Sample ID: EVBMP0007S019
Date Collected: 03/21/23 08:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	2.00		1.00	0.829	mg/L			03/27/23 17:48	1

Client Sample ID: EVBMP0008S022
Date Collected: 03/21/23 08:45
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	4.5	H H3	0.05	0.05	NTU			03/24/23 17:33	1
Total Suspended Solids (SM 2540D)	4.12		1.25	1.04	mg/L			03/27/23 18:26	1

Client Sample ID: EVBMP0009S020
Date Collected: 03/21/23 08:30
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	1.2	H H3	0.05	0.05	NTU			03/24/23 17:36	1
Total Suspended Solids (SM 2540D)	2.50		1.25	1.04	mg/L			03/27/23 18:26	1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EVBMP0007S019
Date Collected: 03/21/23 08:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			04/05/23 08:54	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			04/05/23 08:54	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			04/05/23 08:54	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			04/05/23 08:54	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			04/05/23 08:54	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			04/05/23 08:54	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			04/05/23 08:54	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			04/05/23 08:54	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			04/05/23 08:54	1

Client Sample ID: EVBMP0008S022
Date Collected: 03/21/23 08:45
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			04/05/23 09:05	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			04/05/23 09:05	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			04/05/23 09:05	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			04/05/23 09:05	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			04/05/23 09:05	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			04/05/23 09:05	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			04/05/23 09:05	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			04/05/23 09:05	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			04/05/23 09:05	1

Client Sample ID: EVBMP0009S020
Date Collected: 03/21/23 08:30
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			04/05/23 09:17	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			04/05/23 09:17	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			04/05/23 09:17	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			04/05/23 09:17	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			04/05/23 09:17	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			04/05/23 09:17	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			04/05/23 09:17	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			04/05/23 09:17	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			04/05/23 09:17	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering group, Inc.

Date Sampled:	03/21/23
Date Received:	03/23/23
Work Order No:	570-132368
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0007S019		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering group, Inc.

Date Sampled:	03/21/23
Date Received:	03/23/23
Work Order No:	570-132368
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0008S022		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering group, Inc.

Date Sampled:	03/21/23
Date Received:	03/23/23
Work Order No:	570-132368
Date Analyzed:	04/05/23
Method:	ASTM D4464M

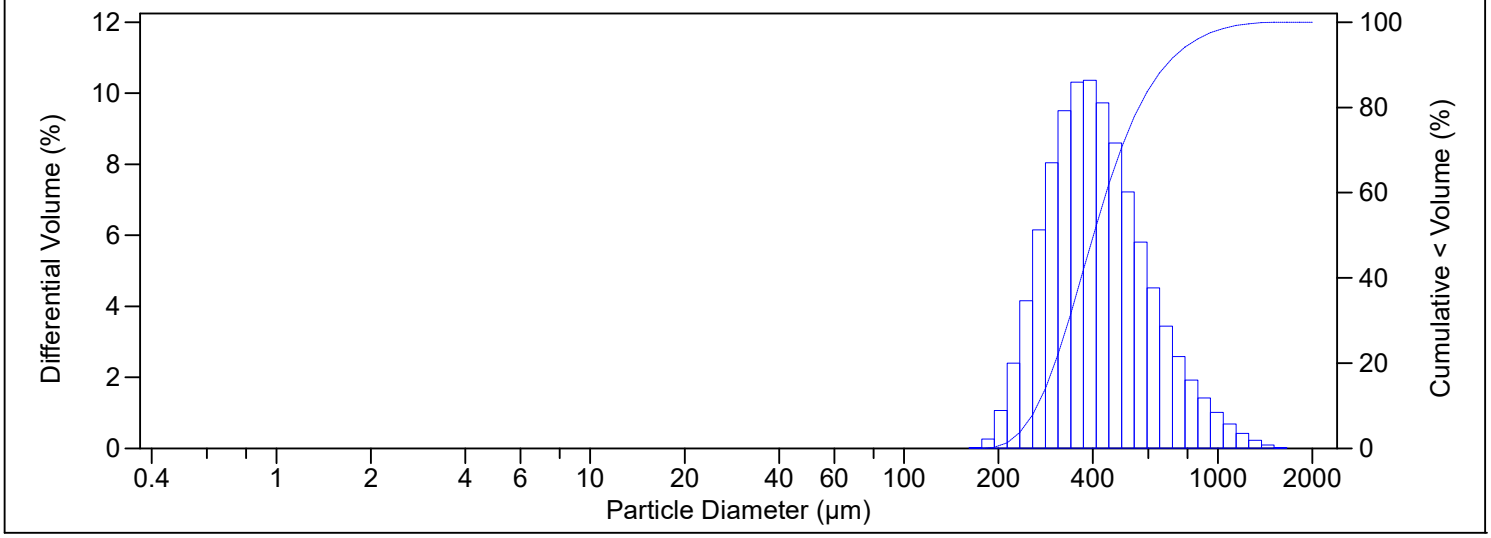
Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0009S020		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.27.17.$ls STD SAND_ 5 Apr 2023_11.27.17.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	17 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.71%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:26 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.27.17.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	446.6 µm	S.D.:	184.8 µm
Median:	401.6 µm	Variance:	34149 µm^2
Mean/Median ratio:	1.112	Skewness:	1.650 Right skewed
Mode:	391.0 µm	Kurtosis:	3.726 Leptokurtic

d_{10}: 265.5 µm d_{50}: 401.6 µm d_{90}: 687.4 µm

Folk and Ward Statistics (Phi)

Mean:	1.28	Median:	1.32	Deviation:	0.53
Skewness:	-0.13	Kurtosis:	1.01		

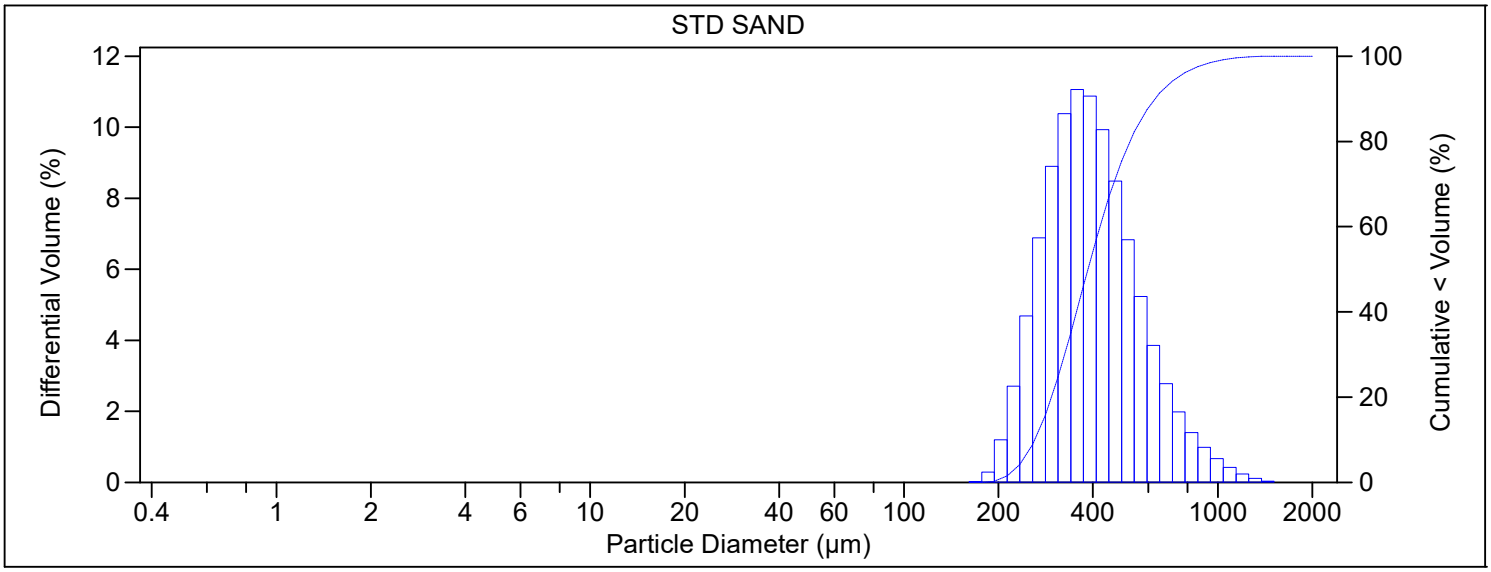
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
241.0 µm	288.7 µm	318.9 µm	367.0 µm	401.6 µm	523.0 µm	599.7 µm	820.0 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.27.17 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.64
250	64.9
500	26.5
1000	1.92
2000	

STD SAND_ 5 Apr 2023_11.27.17.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.42
0.412	0	22.73	0	1255	0.23
0.452	0	24.95	0	1377	0.099
0.496	0	27.39	0	1512	0.021
0.545	0	30.07	0	1660	0.0010
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.016		
3.206	0	176.9	0.26		
3.519	0	194.2	1.07		
3.863	0	213.2	2.40		
4.241	0	234.1	4.16		
4.656	0	256.9	6.15		
5.111	0	282.1	8.04		
5.611	0	309.6	9.51		
6.159	0	339.9	10.3		
6.761	0	373.1	10.4		
7.422	0	409.6	9.73		
8.148	0	449.7	8.60		
8.944	0	493.6	7.22		
9.819	0	541.9	5.81		
10.78	0	594.9	4.52		
11.83	0	653.0	3.44		
12.99	0	716.9	2.58		
14.26	0	786.9	1.93		
15.65	0	863.9	1.42		
17.18	0	948.3	1.02		
18.86	0	1041	0.69		

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.55.13.$ls STD SAND_ 5 Apr 2023_11.55.13.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	19 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.77%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:54 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	10%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.55.13.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	423.4 µm	S.D.:	164.0 µm
Median:	386.1 µm	Variance:	26894 µm^2
Mean/Median ratio:	1.097	Skewness:	1.674 Right skewed
Mode:	356.1 µm	Kurtosis:	4.130 Leptokurtic

d_{10}: 260.9 µm d_{50}: 386.1 µm d_{90}: 632.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.34	Median:	1.37	Deviation:	0.50
Skewness:	-0.12	Kurtosis:	1.02		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
237.9 µm	282.7 µm	310.5 µm	354.7 µm	386.1 µm	491.4 µm	559.5 µm	747.2 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.55.13 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.49
250	68.8
500	22.6
1000	1.11
2000	

STD SAND_ 5 Apr 2023_11.55.13.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.23
0.412	0	22.73	0	1255	0.12
0.452	0	24.95	0	1377	0.040
0.496	0	27.39	0	1512	0.0034
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.017		
3.206	0	176.9	0.29		
3.519	0	194.2	1.20		
3.863	0	213.2	2.71		
4.241	0	234.1	4.69		
4.656	0	256.9	6.88		
5.111	0	282.1	8.90		
5.611	0	309.6	10.4		
6.159	0	339.9	11.1		
6.761	0	373.1	10.9		
7.422	0	409.6	9.93		
8.148	0	449.7	8.48		
8.944	0	493.6	6.83		
9.819	0	541.9	5.23		
10.78	0	594.9	3.86		
11.83	0	653.0	2.78		
12.99	0	716.9	1.98		
14.26	0	786.9	1.41		
15.65	0	863.9	0.98		
17.18	0	948.3	0.67		
18.86	0	1041	0.42		

Isotope Dilution Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-132368-1

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TCDD (40-135)	TCDF (40-135)	PeCDD (40-135)	PeCDF (40-135)	HxDD (40-135)	PeCF (40-135)	HxCDD (40-135)	HxCDF (40-135)
570-132368-1	EVBMP0007S019	78	68	83	79	89	77	75	71
570-132368-2	EVBMP0008S022	82	75	85	85	96	84	81	73
570-132368-3	EVBMP0009S020	67	58	69	67	81	65	68	62
LCS 320-665672/2-A	Lab Control Sample	87	75	88	86	99	82	84	75
LCSD 320-665672/3-A	Lab Control Sample Dup	83	72	89	84	98	81	81	73
MB 320-665672/1-A	Method Blank	78	66	78	76	91	73	76	69

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	HpCDD (40-135)	HpCDF (40-135)	HxDF (40-135)	OCDD (40-135)	HxCF (40-135)	13CHxCF (40-135)	HpCDF2 (40-135)	OCDF (40-135)
570-132368-1	EVBMP0007S019	84	79	85	74	77	81	80	73
570-132368-2	EVBMP0008S022	81	88	91	71	84	86	77	70
570-132368-3	EVBMP0009S020	72	67	78	62	68	73	66	60
LCS 320-665672/2-A	Lab Control Sample	91	84	94	79	87	93	84	77
LCSD 320-665672/3-A	Lab Control Sample Dup	89	82	93	79	85	90	83	76
MB 320-665672/1-A	Method Blank	81	76	88	67	77	83	75	65

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
OCDD = 13C-OCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDF = 13C-OCDF

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-665672/1-A
Matrix: Water
Analysis Batch: 667090

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 665672

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.61	pg/L		04/05/23 10:58	04/12/23 03:43	1
2,3,7,8-TCDF	ND		10	0.40	pg/L		04/05/23 10:58	04/12/23 03:43	1
1,2,3,7,8-PeCDD	ND		50	0.57	pg/L		04/05/23 10:58	04/12/23 03:43	1
1,2,3,7,8-PeCDF	1.531	J	50	0.36	pg/L		04/05/23 10:58	04/12/23 03:43	1
2,3,4,7,8-PeCDF	ND		50	0.41	pg/L		04/05/23 10:58	04/12/23 03:43	1
1,2,3,4,7,8-HxCDD	3.024	J	50	0.80	pg/L		04/05/23 10:58	04/12/23 03:43	1
1,2,3,6,7,8-HxCDD	ND		50	0.77	pg/L		04/05/23 10:58	04/12/23 03:43	1
1,2,3,7,8,9-HxCDD	ND		50	0.69	pg/L		04/05/23 10:58	04/12/23 03:43	1
1,2,3,4,7,8-HxCDF	1.832	J	50	0.68	pg/L		04/05/23 10:58	04/12/23 03:43	1
1,2,3,6,7,8-HxCDF	1.078	J	50	0.62	pg/L		04/05/23 10:58	04/12/23 03:43	1
2,3,4,6,7,8-HxCDF	ND		50	0.63	pg/L		04/05/23 10:58	04/12/23 03:43	1
1,2,3,7,8,9-HxCDF	ND		50	0.91	pg/L		04/05/23 10:58	04/12/23 03:43	1
1,2,3,4,6,7,8-HpCDD	4.379	J	50	1.4	pg/L		04/05/23 10:58	04/12/23 03:43	1
1,2,3,4,6,7,8-HpCDF	17.58	J	50	1.4	pg/L		04/05/23 10:58	04/12/23 03:43	1
1,2,3,4,7,8,9-HpCDF	ND		50	1.9	pg/L		04/05/23 10:58	04/12/23 03:43	1
OCDD	44.74	J	100	1.2	pg/L		04/05/23 10:58	04/12/23 03:43	1
OCDF	15.74	J	100	1.1	pg/L		04/05/23 10:58	04/12/23 03:43	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*78*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-2,3,7,8-TCDF	*66*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-1,2,3,7,8-PeCDD	*78*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-1,2,3,7,8-PeCDF	*76*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-1,2,3,6,7,8-HxCDD	*91*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-2,3,4,7,8-PeCDF	*73*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-1,2,3,4,7,8-HxCDD	*76*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-1,2,3,4,7,8-HxCDF	*69*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*81*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*76*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-1,2,3,6,7,8-HxCDF	*88*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-OCDD	*67*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-1,2,3,7,8,9-HxCDF	*77*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-2,3,4,6,7,8-HxCDF	*83*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*75*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*
13C-OCDF	*65*		*40 - 135*	*04/05/23 10:58*	*04/12/23 03:43*	*1*

Lab Sample ID: LCS 320-665672/2-A
Matrix: Water
Analysis Batch: 667090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665672

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	200	166.7		pg/L		83	66 - 146
2,3,7,8-TCDF	200	175.4		pg/L		88	67 - 153
1,2,3,7,8-PeCDD	1000	847.4		pg/L		85	71 - 131
1,2,3,7,8-PeCDF	1000	842.5		pg/L		84	69 - 131
2,3,4,7,8-PeCDF	1000	864.3		pg/L		86	68 - 131
1,2,3,4,7,8-HxCDD	1000	826.4		pg/L		83	64 - 131
1,2,3,6,7,8-HxCDD	1000	896.7		pg/L		90	66 - 148
1,2,3,7,8,9-HxCDD	1000	871.7		pg/L		87	59 - 148

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-665672/2-A
Matrix: Water
Analysis Batch: 667090

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 665672

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3,4,7,8-HxCDF			1000	847.5		pg/L		85	68 - 129		
1,2,3,6,7,8-HxCDF			1000	846.3		pg/L		85	69 - 134		
2,3,4,6,7,8-HxCDF			1000	844.6		pg/L		84	68 - 136		
1,2,3,7,8,9-HxCDF			1000	825.5		pg/L		83	68 - 134		
1,2,3,4,6,7,8-HpCDD			1000	852.2		pg/L		85	68 - 129		
1,2,3,4,6,7,8-HpCDF			1000	899.3		pg/L		90	68 - 143		
1,2,3,4,7,8,9-HpCDF			1000	864.3		pg/L		86	68 - 129		
OCDD			2000	1768		pg/L		88	64 - 142		
OCDF			2000	1741		pg/L		87	68 - 134		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*87*		*40 - 135*
13C-2,3,7,8-TCDF	*75*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*88*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*86*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*99*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*82*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*84*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*75*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*91*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*84*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*94*		*40 - 135*
13C-OCDD	*79*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*87*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*93*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*84*		*40 - 135*
13C-OCDF	*77*		*40 - 135*

Lab Sample ID: LCSD 320-665672/3-A
Matrix: Water
Analysis Batch: 667090

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665672

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			200	170.6		pg/L		85	66 - 146	2	20
2,3,7,8-TCDF			200	182.4		pg/L		91	67 - 153	4	20
1,2,3,7,8-PeCDD			1000	867.9		pg/L		87	71 - 131	2	20
1,2,3,7,8-PeCDF			1000	874.7		pg/L		87	69 - 131	4	20
2,3,4,7,8-PeCDF			1000	886.6		pg/L		89	68 - 131	3	20
1,2,3,4,7,8-HxCDD			1000	866.9		pg/L		87	64 - 131	5	20
1,2,3,6,7,8-HxCDD			1000	932.5		pg/L		93	66 - 148	4	20
1,2,3,7,8,9-HxCDD			1000	901.1		pg/L		90	59 - 148	3	20
1,2,3,4,7,8-HxCDF			1000	907.4		pg/L		91	68 - 129	7	20
1,2,3,6,7,8-HxCDF			1000	872.5		pg/L		87	69 - 134	3	20
2,3,4,6,7,8-HxCDF			1000	886.6		pg/L		89	68 - 136	5	20
1,2,3,7,8,9-HxCDF			1000	868.8		pg/L		87	68 - 134	5	20
1,2,3,4,6,7,8-HpCDD			1000	887.9		pg/L		89	68 - 129	4	20
1,2,3,4,6,7,8-HpCDF			1000	943.4		pg/L		94	68 - 143	5	20
1,2,3,4,7,8,9-HpCDF			1000	912.6		pg/L		91	68 - 129	5	20
OCDD			2000	1827		pg/L		91	64 - 142	3	20

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-665672/3-A
Matrix: Water
Analysis Batch: 667090

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 665672

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
OCDF			2000	1821		pg/L		91	68 - 134	4	20

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*83*		*40 - 135*
13C-2,3,7,8-TCDF	*72*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*89*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*84*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*98*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*81*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*81*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*73*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*89*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*82*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*93*		*40 - 135*
13C-OCDD	*79*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*85*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*90*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*83*		*40 - 135*
13C-OCDF	*76*		*40 - 135*

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-314881/1-A
Matrix: Water
Analysis Batch: 315021

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 314881

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/27/23 07:42	03/27/23 11:48	1
Copper	ND		2.00	0.318	ug/L		03/27/23 07:42	03/27/23 11:48	1
Lead	ND		1.00	0.118	ug/L		03/27/23 07:42	03/27/23 11:48	1

Lab Sample ID: LCS 570-314881/2-A
Matrix: Water
Analysis Batch: 315021

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 314881

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cadmium			80.0	78.31		ug/L		98	85 - 115		
Copper			80.0	78.42		ug/L		98	85 - 115		
Lead			80.0	81.33		ug/L		102	85 - 115		

Lab Sample ID: LCSD 570-314881/3-A
Matrix: Water
Analysis Batch: 315021

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 314881

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	78.87		ug/L		99	85 - 115	1	20
Copper			80.0	79.53		ug/L		99	85 - 115	1	20
Lead			80.0	80.40		ug/L		100	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-132368-1 MS
Matrix: Water
Analysis Batch: 315066

Client Sample ID: EVBMP0007S019
Prep Type: Total Recoverable
Prep Batch: 314881

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		80.0	77.78		ug/L		97	80 - 120
Copper	2.47		80.0	75.37		ug/L		91	80 - 120
Lead	0.431	J	80.0	72.89		ug/L		91	80 - 120

Lab Sample ID: 570-132368-1 MSD
Matrix: Water
Analysis Batch: 315066

Client Sample ID: EVBMP0007S019
Prep Type: Total Recoverable
Prep Batch: 314881

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND		80.0	76.70		ug/L		96	80 - 120	1	20
Copper	2.47		80.0	76.66		ug/L		93	80 - 120	2	20
Lead	0.431	J	80.0	74.29		ug/L		92	80 - 120	2	20

Lab Sample ID: MB 570-315026/1-A
Matrix: Water
Analysis Batch: 315353

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L			03/28/23 09:44	1
Copper	ND		2.00	0.318	ug/L			03/28/23 09:44	1
Lead	ND		1.00	0.118	ug/L			03/28/23 09:44	1

Lab Sample ID: LCS 570-315026/2-A
Matrix: Water
Analysis Batch: 315353

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	74.39		ug/L		93	85 - 115
Copper	80.0	73.94		ug/L		92	85 - 115
Lead	80.0	76.36		ug/L		95	85 - 115

Lab Sample ID: LCSD 570-315026/3-A
Matrix: Water
Analysis Batch: 315353

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	76.05		ug/L		95	85 - 115	2	20
Copper	80.0	74.61		ug/L		93	85 - 115	1	20
Lead	80.0	76.91		ug/L		96	85 - 115	1	20

Lab Sample ID: 570-132368-1 MS
Matrix: Water
Analysis Batch: 315353

Client Sample ID: EVBMP0007S019
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND	H	80.0	69.30		ug/L		87	80 - 120
Copper	2.28	H	80.0	71.42		ug/L		86	80 - 120
Lead	0.249	J H	80.0	71.92		ug/L		90	80 - 120

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 570-132368-1 MSD
Matrix: Water
Analysis Batch: 315353

Client Sample ID: EVBMP0007S019
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	ND	H	80.0	71.09		ug/L		89	80 - 120	3	20
Copper	2.28	H	80.0	71.72		ug/L		87	80 - 120	0	20
Lead	0.249	J H	80.0	71.70		ug/L		89	80 - 120	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-315117/1-A
Matrix: Water
Analysis Batch: 315423

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 315117

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/27/23 16:56	03/28/23 14:15	1

Lab Sample ID: LCS 570-315117/2-A
Matrix: Water
Analysis Batch: 315527

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 315117

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.007623		mg/L		95	85 - 115

Lab Sample ID: LCSD 570-315117/3-A
Matrix: Water
Analysis Batch: 315423

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 315117

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.008524		mg/L		107	85 - 115	NaN	10

Lab Sample ID: MB 570-315553/1-B
Matrix: Water
Analysis Batch: 316141

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 315605

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/28/23 18:45	03/30/23 13:15	1

Lab Sample ID: LCS 570-315553/2-B
Matrix: Water
Analysis Batch: 316141

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 315605

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.007834		mg/L		98	85 - 115

Lab Sample ID: LCSD 570-315553/3-B
Matrix: Water
Analysis Batch: 316141

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 315605

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.007961		mg/L		100	85 - 115	2	10

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 570-132368-1 MS
Matrix: Water
Analysis Batch: 316141

Client Sample ID: EVBMP0007S019
Prep Type: Dissolved
Prep Batch: 315605

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND	H	0.00800	0.007491		mg/L		94	85 - 115

Lab Sample ID: 570-132368-1 MSD
Matrix: Water
Analysis Batch: 316141

Client Sample ID: EVBMP0007S019
Prep Type: Dissolved
Prep Batch: 315605

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	H	0.00800	0.007879		mg/L		98	85 - 115	5	10

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-314625/1
Matrix: Water
Analysis Batch: 314625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	1000	1000		NTU		99.7	99.0 - 101.0

Lab Sample ID: LCSSRM 570-314625/2
Matrix: Water
Analysis Batch: 314625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	10.0	10		NTU		100.0	99.0 - 101.0

Lab Sample ID: LCSSRM 570-314625/3
Matrix: Water
Analysis Batch: 314625

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits
Turbidity	0.0200	ND		NTU		100.0	0.0 - 200.0

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-315138/1
Matrix: Water
Analysis Batch: 315138

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			03/27/23 17:48	1

Lab Sample ID: LCS 570-315138/2
Matrix: Water
Analysis Batch: 315138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	96.00		mg/L		96	77 - 116

Method: SM 2540D - Solids, Total Suspended (TSS) (Continued)

Lab Sample ID: LCSD 570-315138/3
Matrix: Water
Analysis Batch: 315138

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	96.00		mg/L		96	77 - 116	0	10

Lab Sample ID: MB 570-315153/1
Matrix: Water
Analysis Batch: 315153

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			03/27/23 18:25	1

Lab Sample ID: LCS 570-315153/2
Matrix: Water
Analysis Batch: 315153

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	96.00		mg/L		96	77 - 116		

Lab Sample ID: LCSD 570-315153/3
Matrix: Water
Analysis Batch: 315153

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	95.00		mg/L		95	77 - 116	1	10

Specialty Organics

Prep Batch: 665672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Total/NA	Water	8290	
570-132368-2	EVBMP0008S022	Total/NA	Water	8290	
570-132368-3	EVBMP0009S020	Total/NA	Water	8290	
MB 320-665672/1-A	Method Blank	Total/NA	Water	8290	
LCS 320-665672/2-A	Lab Control Sample	Total/NA	Water	8290	
LCSD 320-665672/3-A	Lab Control Sample Dup	Total/NA	Water	8290	

Analysis Batch: 667090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Total/NA	Water	8290	665672
570-132368-2	EVBMP0008S022	Total/NA	Water	8290	665672
570-132368-3	EVBMP0009S020	Total/NA	Water	8290	665672
MB 320-665672/1-A	Method Blank	Total/NA	Water	8290	665672
LCS 320-665672/2-A	Lab Control Sample	Total/NA	Water	8290	665672
LCSD 320-665672/3-A	Lab Control Sample Dup	Total/NA	Water	8290	665672

Metals

Prep Batch: 314881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Total Recoverable	Water	200.8	
570-132368-2	EVBMP0008S022	Total Recoverable	Water	200.8	
570-132368-3	EVBMP0009S020	Total Recoverable	Water	200.8	
MB 570-314881/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-314881/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-314881/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	
570-132368-1 MS	EVBMP0007S019	Total Recoverable	Water	200.8	
570-132368-1 MSD	EVBMP0007S019	Total Recoverable	Water	200.8	

Analysis Batch: 315021

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-314881/1-A	Method Blank	Total Recoverable	Water	200.8	314881
LCS 570-314881/2-A	Lab Control Sample	Total Recoverable	Water	200.8	314881
LCSD 570-314881/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	314881

Filtration Batch: 315026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Dissolved	Water	Filtration	
570-132368-2	EVBMP0008S022	Dissolved	Water	Filtration	
570-132368-3	EVBMP0009S020	Dissolved	Water	Filtration	
MB 570-315026/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-315026/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-315026/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-132368-1 MS	EVBMP0007S019	Dissolved	Water	Filtration	
570-132368-1 MSD	EVBMP0007S019	Dissolved	Water	Filtration	

Analysis Batch: 315066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Total Recoverable	Water	200.8	314881
570-132368-2	EVBMP0008S022	Total Recoverable	Water	200.8	314881
570-132368-3	EVBMP0009S020	Total Recoverable	Water	200.8	314881

Metals (Continued)

Analysis Batch: 315066 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1 MS	EVBMP0007S019	Total Recoverable	Water	200.8	314881
570-132368-1 MSD	EVBMP0007S019	Total Recoverable	Water	200.8	314881

Prep Batch: 315117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Total/NA	Water	245.1	
570-132368-2	EVBMP0008S022	Total/NA	Water	245.1	
570-132368-3	EVBMP0009S020	Total/NA	Water	245.1	
MB 570-315117/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-315117/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-315117/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Analysis Batch: 315353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Dissolved	Water	200.8	315026
570-132368-2	EVBMP0008S022	Dissolved	Water	200.8	315026
570-132368-3	EVBMP0009S020	Dissolved	Water	200.8	315026
MB 570-315026/1-A	Method Blank	Dissolved	Water	200.8	315026
LCS 570-315026/2-A	Lab Control Sample	Dissolved	Water	200.8	315026
LCSD 570-315026/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	315026
570-132368-1 MS	EVBMP0007S019	Dissolved	Water	200.8	315026
570-132368-1 MSD	EVBMP0007S019	Dissolved	Water	200.8	315026

Analysis Batch: 315423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Total/NA	Water	245.1	315117
570-132368-2	EVBMP0008S022	Total/NA	Water	245.1	315117
570-132368-3	EVBMP0009S020	Total/NA	Water	245.1	315117
MB 570-315117/1-A	Method Blank	Total/NA	Water	245.1	315117
LCSD 570-315117/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	315117

Analysis Batch: 315527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 570-315117/2-A	Lab Control Sample	Total/NA	Water	245.1	315117

Filtration Batch: 315553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Dissolved	Water	Filtration	
570-132368-2	EVBMP0008S022	Dissolved	Water	Filtration	
570-132368-3	EVBMP0009S020	Dissolved	Water	Filtration	
MB 570-315553/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-315553/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-315553/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-132368-1 MS	EVBMP0007S019	Dissolved	Water	Filtration	
570-132368-1 MSD	EVBMP0007S019	Dissolved	Water	Filtration	

Prep Batch: 315605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Dissolved	Water	245.1	315553
570-132368-2	EVBMP0008S022	Dissolved	Water	245.1	315553
570-132368-3	EVBMP0009S020	Dissolved	Water	245.1	315553

Metals (Continued)

Prep Batch: 315605 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 570-315553/1-B	Method Blank	Dissolved	Water	245.1	315553
LCS 570-315553/2-B	Lab Control Sample	Dissolved	Water	245.1	315553
LCSD 570-315553/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	315553
570-132368-1 MS	EVBMP0007S019	Dissolved	Water	245.1	315553
570-132368-1 MSD	EVBMP0007S019	Dissolved	Water	245.1	315553

Analysis Batch: 316141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Dissolved	Water	245.1	315605
570-132368-2	EVBMP0008S022	Dissolved	Water	245.1	315605
570-132368-3	EVBMP0009S020	Dissolved	Water	245.1	315605
MB 570-315553/1-B	Method Blank	Dissolved	Water	245.1	315605
LCS 570-315553/2-B	Lab Control Sample	Dissolved	Water	245.1	315605
LCSD 570-315553/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	315605
570-132368-1 MS	EVBMP0007S019	Dissolved	Water	245.1	315605
570-132368-1 MSD	EVBMP0007S019	Dissolved	Water	245.1	315605

General Chemistry

Analysis Batch: 314625

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-2	EVBMP0008S022	Total/NA	Water	SM 2130B	
570-132368-3	EVBMP0009S020	Total/NA	Water	SM 2130B	
LCSSRM 570-314625/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-314625/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-314625/3	Lab Control Sample	Total/NA	Water	SM 2130B	

Analysis Batch: 315138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Total/NA	Water	SM 2540D	
MB 570-315138/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-315138/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-315138/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Analysis Batch: 315153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-2	EVBMP0008S022	Total/NA	Water	SM 2540D	
570-132368-3	EVBMP0009S020	Total/NA	Water	SM 2540D	
MB 570-315153/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-315153/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-315153/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Geotechnical

Analysis Batch: 317524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-132368-1	EVBMP0007S019	Total/NA	Water	D4464	
570-132368-2	EVBMP0008S022	Total/NA	Water	D4464	
570-132368-3	EVBMP0009S020	Total/NA	Water	D4464	
LCS 570-317524/17	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-317524/19	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-132368-1

Client Sample ID: EVBMP0007S019

Date Collected: 03/21/23 08:15
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			951.5 mL	20.0 uL	665672	04/05/23 10:58	CB	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	667090	04/12/23 06:06	DB	EET SAC
	Instrument ID: 12D5									
Dissolved	Filtration	Filtration			50 mL	50 mL	315026	03/27/23 12:51	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			315353	03/28/23 09:51	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	314881	03/27/23 07:42	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			315066	03/27/23 11:30	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	315553	03/28/23 18:31	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	315605	03/28/23 18:45	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			316141	03/30/23 13:25	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	315117	03/27/23 16:56	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			315423	03/28/23 14:32	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	315138	03/27/23 17:48	UWCT	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	D4464		1			317524	04/05/23 08:54	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0008S022

Date Collected: 03/21/23 08:45
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			988.9 mL	20.0 uL	665672	04/05/23 10:58	CB	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	667090	04/12/23 06:53	DB	EET SAC
	Instrument ID: 12D5									
Dissolved	Filtration	Filtration			50 mL	50 mL	315026	03/27/23 12:51	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			315353	03/28/23 09:58	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	314881	03/27/23 07:42	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			315066	03/27/23 11:38	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	315553	03/28/23 18:31	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	315605	03/28/23 18:45	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			316141	03/30/23 13:30	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	315117	03/27/23 16:56	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			315423	03/28/23 14:34	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			314625	03/24/23 17:33	ZVB7	EET CAL 4
	Instrument ID: TUR4									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-132368-1

Client Sample ID: EVBMP0008S022

Date Collected: 03/21/23 08:45
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	800 mL	1000 mL	315153	03/27/23 18:26	UWCT	EET CAL 4
Total/NA	Analysis	D4464		1			317524	04/05/23 09:05	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0009S020

Date Collected: 03/21/23 08:30
Date Received: 03/23/23 19:20

Lab Sample ID: 570-132368-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1000.2 mL	20.0 uL	665672	04/05/23 10:58	CB	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	667090	04/12/23 07:41	DB	EET SAC
	Instrument ID: 12D5									
Dissolved	Filtration	Filtration			50 mL	50 mL	315026	03/27/23 12:51	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			315353	03/28/23 10:00	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	314881	03/27/23 07:42	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			315066	03/27/23 11:40	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	315553	03/28/23 18:31	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	315605	03/28/23 18:45	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			316141	03/30/23 13:32	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	315117	03/27/23 16:56	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			315423	03/28/23 14:35	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			314625	03/24/23 17:36	ZVB7	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	800 mL	1000 mL	315153	03/27/23 18:26	UWCT	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	D4464		1			317524	04/05/23 09:17	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc. Job ID: 570-132368-1
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8		Water	Cadmium
200.8		Water	Copper
200.8		Water	Lead
200.8	200.8	Water	Cadmium
200.8	200.8	Water	Copper
200.8	200.8	Water	Lead
245.1	245.1	Water	Mercury
D4464		Water	Clay (less than 0.00391 mm)
D4464		Water	Coarse Sand (0.5mm to 1mm)
D4464		Water	Fine Sand (0.125 to 0.25mm)
D4464		Water	Gravel (greater than 2 mm)
D4464		Water	Medium Sand (0.25 to 0.5 mm)
D4464		Water	Silt (0.00391 to 0.0625mm)
D4464		Water	Total Silt and Clay (0 to 0.0626mm)
D4464		Water	Very Coarse Sand (1 to 2mm)
D4464		Water	Very Fine Sand (0.0625 to 0.125 mm)
SM 2130B		Water	Turbidity

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2897	01-22-24

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-132368-1

Method	Method Description	Protocol	Laboratory
8290	Dioxins and Furans (HRGC/HRMS)	SW846	EET SAC
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
8290	Separatory Funnel (Liquid-Liquid) Extraction of Dioxins and Furans	SW846	EET SAC
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

ASTM = ASTM International
EPA = US Environmental Protection Agency
None = None
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494
EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-132368-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-132368-1	EVBMP0007S019	Water	03/21/23 08:15	03/23/23 19:20
570-132368-2	EVBMP0008S022	Water	03/21/23 08:45	03/23/23 19:20
570-132368-3	EVBMP0009S020	Water	03/21/23 08:30	03/23/23 19:20

Chain of Custody Record

COC Number: CALS03212301

JACOBS

3/21/2023 9:46:54 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891	**Sample Manager**	
Location	Santa Susana Field Lab		
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180.1/2130B	200.8/245.1	200.8/245.1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0007S019	21-Mar-23 8:15	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4'C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		**6**						
EVBMP0008S022	21-Mar-23 8:45	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4'C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		**6**						

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN BENSON	3/21/23 0800
Relinquished by		3/22/23 0943
Received by		3.22.23/0943
Relinquished by		3.22.23/1150
Received by	EC	3/23/23 1150
Relinquished by:	EC	3/23/23 1920
	EC	3/23/23 1920

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** 1.9/1.9 Sell

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

570-132368 Chain of Custody

Chain of Custody Record

COC Number: CALS03212301

JACOBS

3/21/2023 9:46:54 AM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891	**Sample Manager**	
Location	Santa Susana Field Lab		
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180.1/2130B	200.8/245.1	200.8/245.1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0009S020	21-Mar-23 8:30	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4'C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

MS = Matrix Spike SD = Matrix Spike Duplicate

	Signatures	Date/Time
Sampled by	BRYAN BENSON	3/21/23 800
Relinquished by		3/22/23 0943
Received by		3.22.23/0943
Relinquished by		3.22.23/1150
Received by	EC	3/23/23 1150
Relinquished by:	EC	3/23/23 1920
	EC	3/23/23 1520

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-212781.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-132368-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/5/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EVBMP0007S019 (570-132368-1)	3/21/23	08:15 Pacific		Water			X	2	
EVBMP0008S022 (570-132368-2)	3/21/23	08:45 Pacific		Water			X	2	
EVBMP0009S020 (570-132368-3)	3/21/23	08:30 Pacific		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time	Company		Date/Time	Company
Relinquished by:	03/27/23 10:11	EC	Received by:	3.28.23 940	GEL
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 4.3c

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-132368-1

Login Number: 132368
List Number: 1
Creator: Thompson, Lori

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc. Job Number: 570-132368-1

Login Number: 132368
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 03/28/23 01:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.3c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mark Fesler
Jacobs Engineering Group, Inc.
4121 Carmichael Rd #400
Montgomery, Alabama 36106

Generated 4/20/2023 10:05:19 AM

JOB DESCRIPTION

NASA SSFL CJ042 Stormwater

JOB NUMBER

570-133109-1

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin CA 92780

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Calscience Project Manager.

Authorization



Generated
4/20/2023 10:05:19 AM

Authorized for release by
Lori Thompson, Project Manager I
Lori.Thompson@et.eurofinsus.com
(657)212-3035

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Definitions/Glossary

Client: Jacobs Engineering Group, Inc.
Job ID: 570-133109-1
Project/Site: NASA SSFL CJ042 Stormwater

Qualifiers

Dioxin

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio. The measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.

Metals

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 570-133109-1

Laboratory: Eurofins Calscience

Narrative

Job Narrative
570-133109-1

Comments
No additional comments.

Receipt
The samples were received on 3/30/2023 5:10 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.1º C.

Receipt Exceptions
The sampling date on the container label for the following samples did not match the information listed on the Chain-of-Custody (COC): EVBMP0007S020 (570-133109-1), EVBMP0008S023 (570-133109-2) and EVBMP0009S021 (570-133109-3). The container labels list 3/29, while the COC lists 3/28. Logged in per sample labels.

Dioxin
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method Filtration: The following samples were not filtered within 15 minutes of sample collection as required by the method: EVBMP0007S020 (570-133109-1), EVBMP0008S023 (570-133109-2) and EVBMP0009S021 (570-133109-3). The samples were filtered prior to analysis at the laboratory, and the results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Dioxin Prep
Method 8290: Elevated reporting limits are provided for the following sample due to sample volume used for preparation: EVBMP0007S020 (570-133109-1). Nominal volume required by method is 1.0 L but the bottle used had only 867.4 ml.

preparation batch 320-666163
method: 8290_P_Sep
matrix: water

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-133109-1

Client Sample ID: EVBMP0007S020 — Lab Sample ID: 570-133109-1

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
2,3,7,8-TCDF	0.46	J q	12	0.33	pg/L	1		8290	Total/NA
1,2,3,7,8-PeCDD	0.62	J	58	0.46	pg/L	1		8290	Total/NA
1,2,3,7,8-PeCDF	0.57	J B	58	0.32	pg/L	1		8290	Total/NA
2,3,4,7,8-PeCDF	0.65	J	58	0.37	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDD	3.1	J B	58	0.47	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	0.81	J q	58	0.48	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	1.1	J q	58	0.42	pg/L	1		8290	Total/NA
1,2,3,4,7,8-HxCDF	0.98	J B	58	0.42	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDF	0.99	J B	58	0.41	pg/L	1		8290	Total/NA
2,3,4,6,7,8-HxCDF	0.88	J B	58	0.40	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	1.1	J q B	58	0.52	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	3.5	J B	58	0.40	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.9	J B	58	0.52	pg/L	1		8290	Total/NA
1,2,3,4,7,8,9-HpCDF	1.5	J B	58	0.61	pg/L	1		8290	Total/NA
OCDD	24	J q B	120	0.57	pg/L	1		8290	Total/NA
OCDF	5.0	J B	120	0.78	pg/L	1		8290	Total/NA
Copper	1.30	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Copper	1.14	J H	2.00	0.318	ug/L	1		200.8	Dissolved

Client Sample ID: EVBMP0008S023 — Lab Sample ID: 570-133109-2

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	2.2	J B	49	0.34	pg/L	1		8290	Total/NA
1,2,3,6,7,8-HxCDD	0.84	J	49	0.35	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDD	0.50	J	49	0.30	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.62	J B	49	0.30	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	5.7	J B	49	0.54	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.6	J q B	49	0.39	pg/L	1		8290	Total/NA
OCDD	76	J B	98	0.59	pg/L	1		8290	Total/NA
OCDF	4.8	J B	98	0.44	pg/L	1		8290	Total/NA
Copper	1.12	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.187	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.06	J H	2.00	0.318	ug/L	1		200.8	Dissolved
Turbidity	3.4		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	2.50		1.00	0.829	mg/L	1		SM 2540D	Total/NA

Client Sample ID: EVBMP0009S021 — Lab Sample ID: 570-133109-3

Analyte	Result	Qualifier	RL	EDL	Unit	Dil Fac	D	Method	Prep Type
1,2,3,4,7,8-HxCDD	2.5	J B	48	0.45	pg/L	1		8290	Total/NA
1,2,3,7,8,9-HxCDF	0.52	J B	48	0.39	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDD	6.4	J B	48	0.73	pg/L	1		8290	Total/NA
1,2,3,4,6,7,8-HpCDF	1.7	J B	48	0.48	pg/L	1		8290	Total/NA
OCDD	87	J B	96	0.81	pg/L	1		8290	Total/NA
OCDF	5.3	J B	96	0.85	pg/L	1		8290	Total/NA
Copper	1.24	J	2.00	0.318	ug/L	1		200.8	Total Recoverable
Lead	0.174	J	1.00	0.118	ug/L	1		200.8	Total Recoverable
Copper	1.03	J H	2.00	0.318	ug/L	1		200.8	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: EVBMP0009S021 (Continued)

Lab Sample ID: 570-133109-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Turbidity	1.6		0.05	0.05	NTU	1		SM 2130B	Total/NA
Total Suspended Solids	1.20		1.00	0.829	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS)

Client Sample ID: EVBMP0007S020
Lab Sample ID: 570-133109-1
Date Collected: 03/29/23 09:50
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		12	0.76	pg/L		04/07/23 08:17	04/14/23 18:37	1
2,3,7,8-TCDF	**0.46**	**J q**	12	0.33	pg/L		04/07/23 08:17	04/14/23 18:37	1
1,2,3,7,8-PeCDD	**0.62**	**J**	58	0.46	pg/L		04/07/23 08:17	04/14/23 18:37	1
1,2,3,7,8-PeCDF	**0.57**	**J B**	58	0.32	pg/L		04/07/23 08:17	04/14/23 18:37	1
2,3,4,7,8-PeCDF	**0.65**	**J**	58	0.37	pg/L		04/07/23 08:17	04/14/23 18:37	1
1,2,3,4,7,8-HxCDD	**3.1**	**J B**	58	0.47	pg/L		04/07/23 08:17	04/14/23 18:37	1
1,2,3,6,7,8-HxCDD	**0.81**	**J q**	58	0.48	pg/L		04/07/23 08:17	04/14/23 18:37	1
1,2,3,7,8,9-HxCDD	**1.1**	**J q**	58	0.42	pg/L		04/07/23 08:17	04/14/23 18:37	1
1,2,3,4,7,8-HxCDF	**0.98**	**J B**	58	0.42	pg/L		04/07/23 08:17	04/14/23 18:37	1
1,2,3,6,7,8-HxCDF	**0.99**	**J B**	58	0.41	pg/L		04/07/23 08:17	04/14/23 18:37	1
2,3,4,6,7,8-HxCDF	**0.88**	**J B**	58	0.40	pg/L		04/07/23 08:17	04/14/23 18:37	1
1,2,3,7,8,9-HxCDF	**1.1**	**J q B**	58	0.52	pg/L		04/07/23 08:17	04/14/23 18:37	1
1,2,3,4,6,7,8-HpCDD	**3.5**	**J B**	58	0.40	pg/L		04/07/23 08:17	04/14/23 18:37	1
1,2,3,4,6,7,8-HpCDF	**1.9**	**J B**	58	0.52	pg/L		04/07/23 08:17	04/14/23 18:37	1
1,2,3,4,7,8,9-HpCDF	**1.5**	**J B**	58	0.61	pg/L		04/07/23 08:17	04/14/23 18:37	1
OCDD	**24**	**J q B**	120	0.57	pg/L		04/07/23 08:17	04/14/23 18:37	1
OCDF	**5.0**	**J B**	120	0.78	pg/L		04/07/23 08:17	04/14/23 18:37	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*86*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-2,3,7,8-TCDF	*92*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-1,2,3,7,8-PeCDD	*89*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-1,2,3,7,8-PeCDF	*93*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-1,2,3,6,7,8-HxCDD	*89*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-2,3,4,7,8-PeCDF	*93*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-1,2,3,4,7,8-HxCDD	*89*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-1,2,3,4,7,8-HxCDF	*87*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*85*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-1,2,3,6,7,8-HxCDF	*102*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-OCDD	*91*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-1,2,3,7,8,9-HxCDF	*100*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-2,3,4,6,7,8-HxCDF	*101*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*89*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*
13C-OCDF	*97*		*40 - 135*	*04/07/23 08:17*	*04/14/23 18:37*	*1*

Client Sample ID: EVBMP0008S023
Lab Sample ID: 570-133109-2
Date Collected: 03/29/23 10:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.8	0.63	pg/L		04/07/23 08:17	04/14/23 19:25	1
2,3,7,8-TCDF	ND		9.8	0.24	pg/L		04/07/23 08:17	04/14/23 19:25	1
1,2,3,7,8-PeCDD	ND		49	0.37	pg/L		04/07/23 08:17	04/14/23 19:25	1
1,2,3,7,8-PeCDF	ND		49	0.23	pg/L		04/07/23 08:17	04/14/23 19:25	1
2,3,4,7,8-PeCDF	ND		49	0.26	pg/L		04/07/23 08:17	04/14/23 19:25	1
1,2,3,4,7,8-HxCDD	**2.2**	**J B**	49	0.34	pg/L		04/07/23 08:17	04/14/23 19:25	1
1,2,3,6,7,8-HxCDD	**0.84**	**J**	49	0.35	pg/L		04/07/23 08:17	04/14/23 19:25	1
1,2,3,7,8,9-HxCDD	**0.50**	**J**	49	0.30	pg/L		04/07/23 08:17	04/14/23 19:25	1
1,2,3,4,7,8-HxCDF	ND		49	0.24	pg/L		04/07/23 08:17	04/14/23 19:25	1
1,2,3,6,7,8-HxCDF	ND		49	0.23	pg/L		04/07/23 08:17	04/14/23 19:25	1

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0008S023
Date Collected: 03/29/23 10:05
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133109-2
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,4,6,7,8-HxCDF	ND		49	0.24	pg/L		04/07/23 08:17	04/14/23 19:25	1
1,2,3,7,8,9-HxCDF	**0.62**	**J B**	49	0.30	pg/L		04/07/23 08:17	04/14/23 19:25	1
1,2,3,4,6,7,8-HpCDD	**5.7**	**J B**	49	0.54	pg/L		04/07/23 08:17	04/14/23 19:25	1
1,2,3,4,6,7,8-HpCDF	**1.6**	**J q B**	49	0.39	pg/L		04/07/23 08:17	04/14/23 19:25	1
1,2,3,4,7,8,9-HpCDF	ND		49	0.47	pg/L		04/07/23 08:17	04/14/23 19:25	1
OCDD	**76**	**J B**	98	0.59	pg/L		04/07/23 08:17	04/14/23 19:25	1
OCDF	**4.8**	**J B**	98	0.44	pg/L		04/07/23 08:17	04/14/23 19:25	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*88*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-2,3,7,8-TCDF	*94*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-1,2,3,7,8-PeCDD	*92*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-1,2,3,7,8-PeCDF	*94*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-1,2,3,6,7,8-HxCDD	*89*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-2,3,4,7,8-PeCDF	*96*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-1,2,3,4,7,8-HxCDD	*93*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-1,2,3,4,7,8-HxCDF	*91*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*88*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*86*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-1,2,3,6,7,8-HxCDF	*104*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-OCDD	*95*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-1,2,3,7,8,9-HxCDF	*103*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-2,3,4,6,7,8-HxCDF	*104*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*92*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*
13C-OCDF	*101*		*40 - 135*	*04/07/23 08:17*	*04/14/23 19:25*	*1*

Client Sample ID: EVBMP0009S021
Date Collected: 03/29/23 10:20
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133109-3
Matrix: Water

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.6	0.79	pg/L		04/07/23 08:17	04/14/23 20:12	1
2,3,7,8-TCDF	ND		9.6	0.30	pg/L		04/07/23 08:17	04/14/23 20:12	1
1,2,3,7,8-PeCDD	ND		48	0.39	pg/L		04/07/23 08:17	04/14/23 20:12	1
1,2,3,7,8-PeCDF	ND		48	0.26	pg/L		04/07/23 08:17	04/14/23 20:12	1
2,3,4,7,8-PeCDF	ND		48	0.31	pg/L		04/07/23 08:17	04/14/23 20:12	1
1,2,3,4,7,8-HxCDD	**2.5**	**J B**	48	0.45	pg/L		04/07/23 08:17	04/14/23 20:12	1
1,2,3,6,7,8-HxCDD	ND		48	0.44	pg/L		04/07/23 08:17	04/14/23 20:12	1
1,2,3,7,8,9-HxCDD	ND		48	0.39	pg/L		04/07/23 08:17	04/14/23 20:12	1
1,2,3,4,7,8-HxCDF	ND		48	0.31	pg/L		04/07/23 08:17	04/14/23 20:12	1
1,2,3,6,7,8-HxCDF	ND		48	0.29	pg/L		04/07/23 08:17	04/14/23 20:12	1
2,3,4,6,7,8-HxCDF	ND		48	0.29	pg/L		04/07/23 08:17	04/14/23 20:12	1
1,2,3,7,8,9-HxCDF	**0.52**	**J B**	48	0.39	pg/L		04/07/23 08:17	04/14/23 20:12	1
1,2,3,4,6,7,8-HpCDD	**6.4**	**J B**	48	0.73	pg/L		04/07/23 08:17	04/14/23 20:12	1
1,2,3,4,6,7,8-HpCDF	**1.7**	**J B**	48	0.48	pg/L		04/07/23 08:17	04/14/23 20:12	1
1,2,3,4,7,8,9-HpCDF	ND		48	0.58	pg/L		04/07/23 08:17	04/14/23 20:12	1
OCDD	**87**	**J B**	96	0.81	pg/L		04/07/23 08:17	04/14/23 20:12	1
OCDF	**5.3**	**J B**	96	0.85	pg/L		04/07/23 08:17	04/14/23 20:12	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*87*		*40 - 135*	*04/07/23 08:17*	*04/14/23 20:12*	*1*
13C-2,3,7,8-TCDF	*94*		*40 - 135*	*04/07/23 08:17*	*04/14/23 20:12*	*1*

Method: SW846 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Client Sample ID: EVBMP0009S021 **Lab Sample ID: 570-133109-3**
Date Collected: 03/29/23 10:20 **Matrix: Water**
Date Received: 03/30/23 17:10

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	90		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-1,2,3,7,8-PeCDF	93		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-1,2,3,6,7,8-HxCDD	95		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-2,3,4,7,8-PeCDF	92		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-1,2,3,4,7,8-HxCDD	81		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-1,2,3,4,7,8-HxCDF	84		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-1,2,3,4,6,7,8-HpCDD	86		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-1,2,3,4,6,7,8-HpCDF	84		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-1,2,3,6,7,8-HxCDF	105		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-OCDD	91		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-1,2,3,7,8,9-HxCDF	103		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-2,3,4,6,7,8-HxCDF	103		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-1,2,3,4,7,8,9-HpCDF	90		40 - 135	04/07/23 08:17	04/14/23 20:12	1
13C-OCDF	97		40 - 135	04/07/23 08:17	04/14/23 20:12	1

Client Sample Results

Client: Jacobs Engineering Group, Inc.
Job ID: 570-133109-1
Project/Site: NASA SSFL CJ042 Stormwater

Method: EPA 200.8 - Metals (ICP/MS) - Total Recoverable

Client Sample ID: EVBMP0007S020
Lab Sample ID: 570-133109-1
Date Collected: 03/29/23 09:50
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/31/23 06:19	03/31/23 12:01	1
Copper	**1.30**	**J**	2.00	0.318	ug/L		03/31/23 06:19	03/31/23 12:01	1
Lead	ND		1.00	0.118	ug/L		03/31/23 06:19	03/31/23 12:01	1

Client Sample ID: EVBMP0008S023
Lab Sample ID: 570-133109-2
Date Collected: 03/29/23 10:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/31/23 06:19	03/31/23 12:03	1
Copper	**1.12**	**J**	2.00	0.318	ug/L		03/31/23 06:19	03/31/23 12:03	1
Lead	**0.187**	**J**	1.00	0.118	ug/L		03/31/23 06:19	03/31/23 12:03	1

Client Sample ID: EVBMP0009S021
Lab Sample ID: 570-133109-3
Date Collected: 03/29/23 10:20
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/31/23 06:19	03/31/23 12:06	1
Copper	**1.24**	**J**	2.00	0.318	ug/L		03/31/23 06:19	03/31/23 12:06	1
Lead	**0.174**	**J**	1.00	0.118	ug/L		03/31/23 06:19	03/31/23 12:06	1

Client: Jacobs Engineering Group, Inc.
Job ID: 570-133109-1
Project/Site: NASA SSFL CJ042 Stormwater

Method: EPA 200.8 - Metals (ICP/MS) - Dissolved

Client Sample ID: EVBMP0007S020
Lab Sample ID: 570-133109-1
Date Collected: 03/29/23 09:50
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/31/23 09:01	1
Copper	**1.14**	**J H**	2.00	0.318	ug/L			03/31/23 09:01	1
Lead	ND	H	1.00	0.118	ug/L			03/31/23 09:01	1

Client Sample ID: EVBMP0008S023
Lab Sample ID: 570-133109-2
Date Collected: 03/29/23 10:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/31/23 09:04	1
Copper	**1.06**	**J H**	2.00	0.318	ug/L			03/31/23 09:04	1
Lead	ND	H	1.00	0.118	ug/L			03/31/23 09:04	1

Client Sample ID: EVBMP0009S021
Lab Sample ID: 570-133109-3
Date Collected: 03/29/23 10:20
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	H	1.00	0.133	ug/L			03/31/23 09:06	1
Copper	**1.03**	**J H**	2.00	0.318	ug/L			03/31/23 09:06	1
Lead	ND	H	1.00	0.118	ug/L			03/31/23 09:06	1

Client: Jacobs Engineering Group, Inc.
Job ID: 570-133109-1
Project/Site: NASA SSFL CJ042 Stormwater

Method: EPA 245.1 - Mercury (CVAA)

Client Sample ID: EVBMP0007S020
Lab Sample ID: 570-133109-1
Date Collected: 03/29/23 09:50
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/31/23 15:48	04/03/23 18:42	1

Client Sample ID: EVBMP0008S023
Lab Sample ID: 570-133109-2
Date Collected: 03/29/23 10:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/31/23 15:48	04/03/23 18:44	1

Client Sample ID: EVBMP0009S021
Lab Sample ID: 570-133109-3
Date Collected: 03/29/23 10:20
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/31/23 15:48	04/03/23 18:46	1

Method: EPA 245.1 - Mercury (CVAA) - Dissolved

Client Sample ID: EVBMP0007S020
Lab Sample ID: 570-133109-1
Date Collected: 03/29/23 09:50
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/30/23 23:34	04/03/23 16:44	1

Client Sample ID: EVBMP0008S023
Lab Sample ID: 570-133109-2
Date Collected: 03/29/23 10:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/30/23 23:34	04/03/23 16:46	1

Client Sample ID: EVBMP0009S021
Lab Sample ID: 570-133109-3
Date Collected: 03/29/23 10:20
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	H	0.000200	0.000124	mg/L		03/30/23 23:34	04/03/23 16:51	1

General Chemistry

Client Sample ID: EVBMP0007S020
Lab Sample ID: 570-133109-1
Date Collected: 03/29/23 09:50
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (SM 2540D)	ND		1.00	0.829	mg/L			03/31/23 19:00	1

Client Sample ID: EVBMP0008S023
Lab Sample ID: 570-133109-2
Date Collected: 03/29/23 10:05
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	**3.4**		0.05	0.05	NTU			03/30/23 20:34	1
Total Suspended Solids (SM 2540D)	**2.50**		1.00	0.829	mg/L			03/31/23 19:00	1

Client Sample ID: EVBMP0009S021
Lab Sample ID: 570-133109-3
Date Collected: 03/29/23 10:20
Matrix: Water
Date Received: 03/30/23 17:10

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity (SM 2130B)	**1.6**		0.05	0.05	NTU			03/30/23 20:37	1
Total Suspended Solids (SM 2540D)	**1.20**		1.00	0.829	mg/L			03/31/23 19:00	1

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-133109-1

Method: ASTM D4464 - Particle Size Distribution of Catalytic Material (Laser light scattering)

Client Sample ID: EVBMP0007S020
Date Collected: 03/29/23 09:50
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133109-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			04/05/23 10:51	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			04/05/23 10:51	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			04/05/23 10:51	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			04/05/23 10:51	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			04/05/23 10:51	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			04/05/23 10:51	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			04/05/23 10:51	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			04/05/23 10:51	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			04/05/23 10:51	1

Client Sample ID: EVBMP0008S023
Date Collected: 03/29/23 10:05
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133109-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			04/05/23 11:02	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			04/05/23 11:02	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			04/05/23 11:02	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			04/05/23 11:02	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			04/05/23 11:02	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			04/05/23 11:02	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			04/05/23 11:02	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			04/05/23 11:02	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			04/05/23 11:02	1

Client Sample ID: EVBMP0009S021
Date Collected: 03/29/23 10:20
Date Received: 03/30/23 17:10

Lab Sample ID: 570-133109-3
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Clay (less than 0.00391 mm)	ND		0.01	0.01	%			04/05/23 11:13	1
Coarse Sand (0.5mm to 1mm)	ND		0.01	0.01	%			04/05/23 11:13	1
Fine Sand (0.125 to 0.25mm)	ND		0.01	0.01	%			04/05/23 11:13	1
Gravel (greater than 2 mm)	ND		0.01	0.01	%			04/05/23 11:13	1
Medium Sand (0.25 to 0.5 mm)	ND		0.01	0.01	%			04/05/23 11:13	1
Silt (0.00391 to 0.0625mm)	ND		0.01	0.01	%			04/05/23 11:13	1
Total Silt and Clay (0 to 0.0626mm)	ND		0.01	0.01	%			04/05/23 11:13	1
Very Coarse Sand (1 to 2mm)	ND		0.01	0.01	%			04/05/23 11:13	1
Very Fine Sand (0.0625 to 0.125 mm)	ND		0.01	0.01	%			04/05/23 11:13	1

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering group, Inc.

Date Sampled:	03/29/23
Date Received:	03/30/23
Work Order No:	570-133109
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0009S021		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering group, Inc.

Date Sampled:	03/29/23
Date Received:	03/30/23
Work Order No:	570-133109
Date Analyzed:	04/05/23
Method:	ASTM D4464M

Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0008S023		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

PARTICLE SIZE SUMMARY

(ASTM D422 / D4464M)

Jacobs Engineering group, Inc.

Date Sampled:	03/29/23
Date Received:	03/30/23
Work Order No:	570-133109
Date Analyzed:	04/05/23
Method:	ASTM D4464M

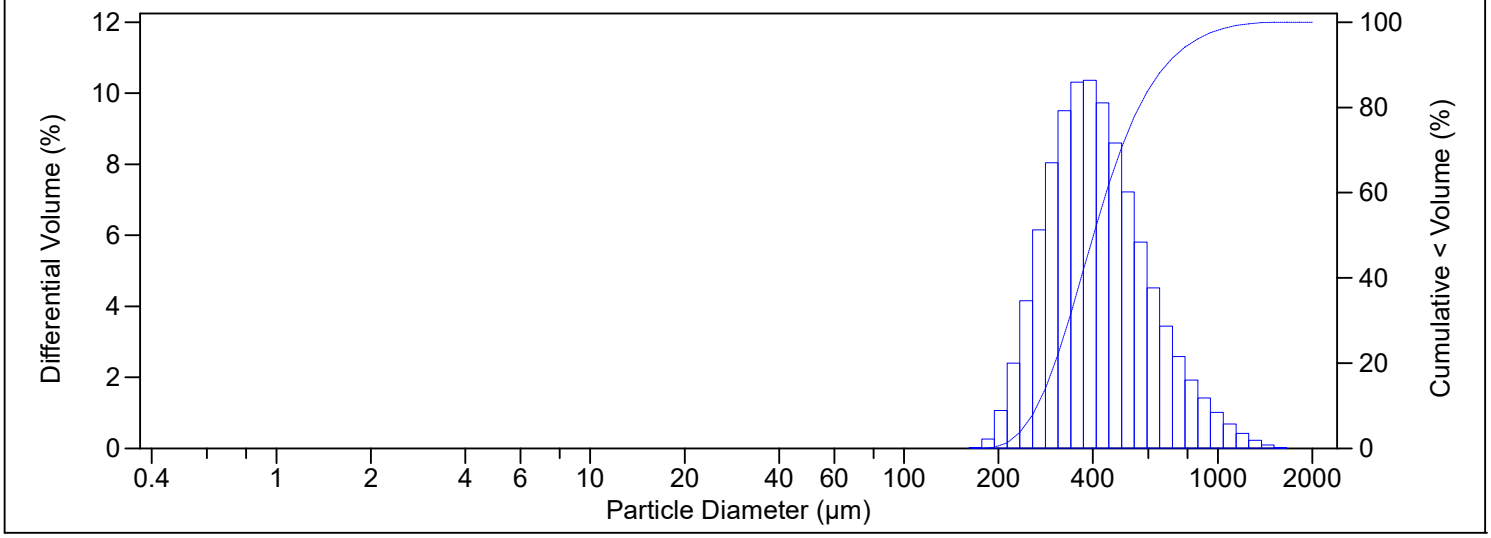
Project: NASA SSFL CJ042 Stormwater

Sample ID	Depth ft	Description	Mean Grain Size mm
EVBMP0007S020		NA	0.000

Particle Size Distribution, wt by percent								
Total Gravel	Very Coarse Sand	Coarse Sand	Medium Sand	Fine Sand	Very Fine Sand	Silt	Clay	Total Silt & Clay
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

V 3.0

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.27.17.$ls STD SAND_ 5 Apr 2023_11.27.17.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	17 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.71%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:26 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	12%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.27.17.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	446.6 µm	S.D.:	184.8 µm
Median:	401.6 µm	Variance:	34149 μm^2
Mean/Median ratio:	1.112	Skewness:	1.650 Right skewed
Mode:	391.0 µm	Kurtosis:	3.726 Leptokurtic

d_{10}: 265.5 µm d_{50}: 401.6 µm d_{90}: 687.4 µm

Folk and Ward Statistics (Phi)

Mean:	1.28	Median:	1.32	Deviation:	0.53
Skewness:	-0.13	Kurtosis:	1.01		

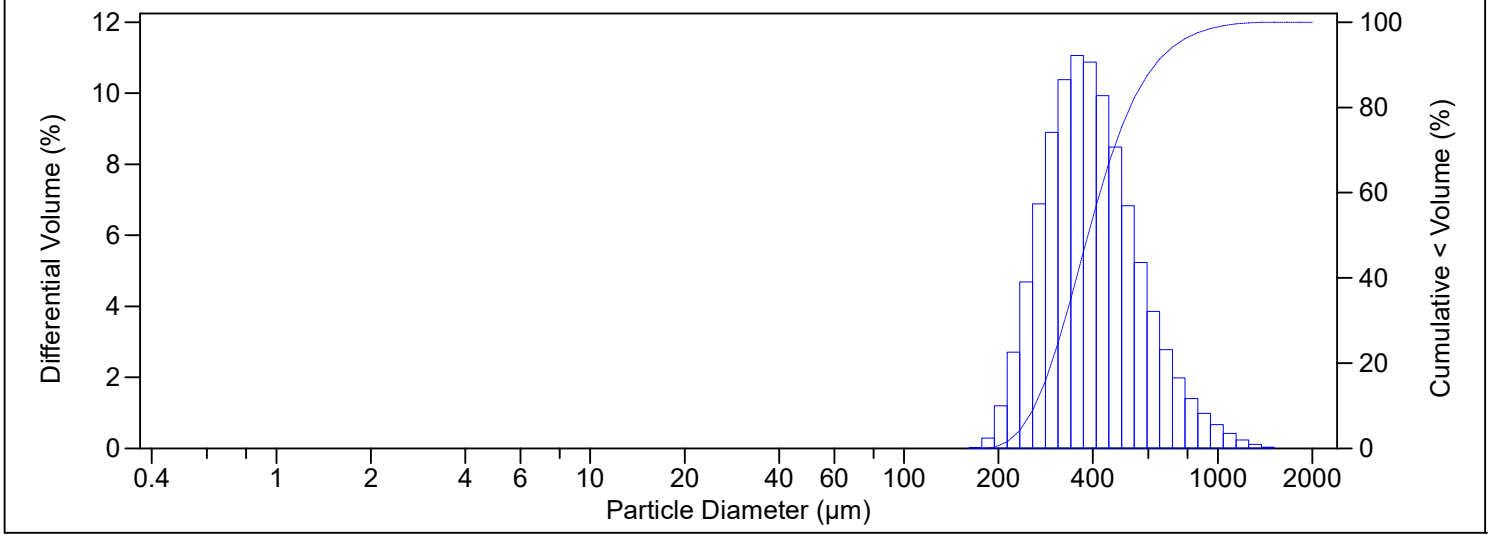
<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
241.0 µm	288.7 µm	318.9 µm	367.0 µm	401.6 µm	523.0 µm	599.7 µm	820.0 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.27.17 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	6.64
250	64.9
500	26.5
1000	1.92
2000	

STD SAND_ 5 Apr 2023_11.27.17.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.42
0.412	0	22.73	0	1255	0.23
0.452	0	24.95	0	1377	0.099
0.496	0	27.39	0	1512	0.021
0.545	0	30.07	0	1660	0.0010
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.016		
3.206	0	176.9	0.26		
3.519	0	194.2	1.07		
3.863	0	213.2	2.40		
4.241	0	234.1	4.16		
4.656	0	256.9	6.15		
5.111	0	282.1	8.04		
5.611	0	309.6	9.51		
6.159	0	339.9	10.3		
6.761	0	373.1	10.4		
7.422	0	409.6	9.73		
8.148	0	449.7	8.60		
8.944	0	493.6	7.22		
9.819	0	541.9	5.81		
10.78	0	594.9	4.52		
11.83	0	653.0	3.44		
12.99	0	716.9	2.58		
14.26	0	786.9	1.93		
15.65	0	863.9	1.42		
17.18	0	948.3	1.02		
18.86	0	1041	0.69		

File name:	C:\LS13320\STD SAND_ 5 Apr 2023_11.55.13.$ls STD SAND_ 5 Apr 2023_11.55.13.$ls		
File ID:	STD SAND		
Sample ID:	STD SAND		
Operator:	C6FB		
Run number:	19 Control Sample		
Comment 1:	ASTM D4464M, LPSA1		
Comment 2:	1986948		
Optical model:	Fraunhofer.rf780d		
Residual:	0.77%		
LS 13 320	Aqueous Liquid Module		
Start time:	11:54 5 Apr 2023	Run length:	60 seconds
Pump speed:	49		
Obscuration:	10%		
Fluid:	Water		
Software:	6.01	Firmware:	4.00



Volume Statistics (Arithmetic) STD SAND_ 5 Apr 2023_11.55.13.$ls

Calculations from 0.375 µm to 2000 µm

Volume:	100%		
Mean:	423.4 µm	S.D.:	164.0 µm
Median:	386.1 µm	Variance:	26894 µm^2
Mean/Median ratio:	1.097	Skewness:	1.674 Right skewed
Mode:	356.1 µm	Kurtosis:	4.130 Leptokurtic

d_{10}: 260.9 µm d_{50}: 386.1 µm d_{90}: 632.6 µm

Folk and Ward Statistics (Phi)

Mean:	1.34	Median:	1.37	Deviation:	0.50
Skewness:	-0.12	Kurtosis:	1.02		

<5%	<16%	<25%	<40%	<50%	<75%	<84%	<95%
237.9 µm	282.7 µm	310.5 µm	354.7 µm	386.1 µm	491.4 µm	559.5 µm	747.2 µm

Particle Diameter µm	STD SAND_ 5 Apr 2023 _11.55.13 .$ls Volume %
0.04	0
0.4	0
1.95	0
3.91	0
62.5	0
125	7.49
250	68.8
500	22.6
1000	1.11
2000	

STD SAND_ 5 Apr 2023_11.55.13.$ls

Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %	Channel Diameter (Lower) µm	Diff. Volume %
0.375	0	20.71	0	1143	0.23
0.412	0	22.73	0	1255	0.12
0.452	0	24.95	0	1377	0.040
0.496	0	27.39	0	1512	0.0034
0.545	0	30.07	0	1660	0
0.598	0	33.01	0	1822	0
0.657	0	36.24	0	2000	
0.721	0	39.78	0		
0.791	0	43.67	0		
0.869	0	47.94	0		
0.954	0	52.63	0		
1.047	0	57.77	0		
1.149	0	63.42	0		
1.261	0	69.62	0		
1.385	0	76.43	0		
1.520	0	83.90	0		
1.669	0	92.10	0		
1.832	0	101.1	0		
2.011	0	111.0	0		
2.208	0	121.8	0		
2.423	0	133.7	0		
2.660	0	146.8	0		
2.920	0	161.2	0.017		
3.206	0	176.9	0.29		
3.519	0	194.2	1.20		
3.863	0	213.2	2.71		
4.241	0	234.1	4.69		
4.656	0	256.9	6.88		
5.111	0	282.1	8.90		
5.611	0	309.6	10.4		
6.159	0	339.9	11.1		
6.761	0	373.1	10.9		
7.422	0	409.6	9.93		
8.148	0	449.7	8.48		
8.944	0	493.6	6.83		
9.819	0	541.9	5.23		
10.78	0	594.9	3.86		
11.83	0	653.0	2.78		
12.99	0	716.9	1.98		
14.26	0	786.9	1.41		
15.65	0	863.9	0.98		
17.18	0	948.3	0.67		
18.86	0	1041	0.42		

Isotope Dilution Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-133109-1

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		TCDD	TCDF	PeCDD	PeCDF	HxDD	PeCF	HxCDD	HxCDF
Lab Sample ID	Client Sample ID	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)
570-133109-1	EVBMP0007S020	86	92	89	93	89	93	89	87
570-133109-2	EVBMP0008S023	88	94	92	94	89	96	93	91
570-133109-3	EVBMP0009S021	87	94	90	93	95	92	81	84
LCS 320-666163/2-A	Lab Control Sample	87	92	92	94	90	91	80	84
LCSD 320-666163/3-A	Lab Control Sample Dup	84	89	87	90	98	89	83	88
MB 320-666163/1-A	Method Blank	88	95	93	94	94	95	87	88

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		HpCDD	HpCDF	HxDF	OCDD	HxCF	13CHxCF	HpCDF2	OCDF
Lab Sample ID	Client Sample ID	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)	(40-135)
570-133109-1	EVBMP0007S020	85	83	102	91	100	101	89	97
570-133109-2	EVBMP0008S023	88	86	104	95	103	104	92	101
570-133109-3	EVBMP0009S021	86	84	105	91	103	103	90	97
LCS 320-666163/2-A	Lab Control Sample	86	81	97	92	102	103	91	98
LCSD 320-666163/3-A	Lab Control Sample Dup	83	83	106	82	99	105	85	87
MB 320-666163/1-A	Method Blank	88	84	102	90	103	105	90	96

Surrogate Legend

TCDD = 13C-2,3,7,8-TCDD
TCDF = 13C-2,3,7,8-TCDF
PeCDD = 13C-1,2,3,7,8-PeCDD
PeCDF = 13C-1,2,3,7,8-PeCDF
HxDD = 13C-1,2,3,6,7,8-HxCDD
PeCF = 13C-2,3,4,7,8-PeCDF
HxCDD = 13C-1,2,3,4,7,8-HxCDD
HxCDF = 13C-1,2,3,4,7,8-HxCDF
HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
HxDF = 13C-1,2,3,6,7,8-HxCDF
OCDD = 13C-OCDD
HxCF = 13C-1,2,3,7,8,9-HxCDF
13CHxCF = 13C-2,3,4,6,7,8-HxCDF
HpCDF2 = 13C-1,2,3,4,7,8,9-HpCDF
OCDF = 13C-OCDF

Method: 8290 - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-666163/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 667880
Prep Batch: 666163

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10	0.79	pg/L		04/07/23 08:17	04/14/23 16:15	1
2,3,7,8-TCDF	ND		10	0.34	pg/L		04/07/23 08:17	04/14/23 16:15	1
1,2,3,7,8-PeCDD	ND		50	0.48	pg/L		04/07/23 08:17	04/14/23 16:15	1
1,2,3,7,8-PeCDF	0.5192	J	50	0.32	pg/L		04/07/23 08:17	04/14/23 16:15	1
2,3,4,7,8-PeCDF	ND		50	0.35	pg/L		04/07/23 08:17	04/14/23 16:15	1
1,2,3,4,7,8-HxCDD	2.473	J	50	0.47	pg/L		04/07/23 08:17	04/14/23 16:15	1
1,2,3,6,7,8-HxCDD	ND		50	0.49	pg/L		04/07/23 08:17	04/14/23 16:15	1
1,2,3,7,8,9-HxCDD	ND		50	0.43	pg/L		04/07/23 08:17	04/14/23 16:15	1
1,2,3,4,7,8-HxCDF	0.4860	J q	50	0.35	pg/L		04/07/23 08:17	04/14/23 16:15	1
1,2,3,6,7,8-HxCDF	0.5344	J	50	0.34	pg/L		04/07/23 08:17	04/14/23 16:15	1
2,3,4,6,7,8-HxCDF	0.5037	J	50	0.33	pg/L		04/07/23 08:17	04/14/23 16:15	1
1,2,3,7,8,9-HxCDF	0.6674	J q	50	0.41	pg/L		04/07/23 08:17	04/14/23 16:15	1
1,2,3,4,6,7,8-HpCDD	2.336	J	50	0.49	pg/L		04/07/23 08:17	04/14/23 16:15	1
1,2,3,4,6,7,8-HpCDF	1.492	J	50	0.44	pg/L		04/07/23 08:17	04/14/23 16:15	1
1,2,3,4,7,8,9-HpCDF	1.519	J	50	0.53	pg/L		04/07/23 08:17	04/14/23 16:15	1
OCDD	11.43	J q	100	0.53	pg/L		04/07/23 08:17	04/14/23 16:15	1
OCDF	4.087	J	100	0.53	pg/L		04/07/23 08:17	04/14/23 16:15	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*88*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-2,3,7,8-TCDF	*95*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-1,2,3,7,8-PeCDD	*93*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-1,2,3,7,8-PeCDF	*94*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-1,2,3,6,7,8-HxCDD	*94*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-2,3,4,7,8-PeCDF	*95*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-1,2,3,4,7,8-HxCDD	*87*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-1,2,3,4,7,8-HxCDF	*88*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*88*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*84*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-1,2,3,6,7,8-HxCDF	*102*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-OCDD	*90*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-1,2,3,7,8,9-HxCDF	*103*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-2,3,4,6,7,8-HxCDF	*105*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*90*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*
13C-OCDF	*96*		*40 - 135*	*04/07/23 08:17*	*04/14/23 16:15*	*1*

Lab Sample ID: LCS 320-666163/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 667880
Prep Batch: 666163

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2,3,7,8-TCDD	200	197.7		pg/L		99	66 - 146
2,3,7,8-TCDF	200	204.5		pg/L		102	67 - 153
1,2,3,7,8-PeCDD	1000	927.1		pg/L		93	71 - 131
1,2,3,7,8-PeCDF	1000	981.7		pg/L		98	69 - 131
2,3,4,7,8-PeCDF	1000	983.4		pg/L		98	68 - 131
1,2,3,4,7,8-HxCDD	1000	904.3		pg/L		90	64 - 131
1,2,3,6,7,8-HxCDD	1000	992.8		pg/L		99	66 - 148
1,2,3,7,8,9-HxCDD	1000	1002		pg/L		100	59 - 148

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-666163/2-A
Matrix: Water
Analysis Batch: 667880

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 666163

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,2,3,4,7,8-HxCDF			1000	911.7		pg/L		91	68 - 129		
1,2,3,6,7,8-HxCDF			1000	950.2		pg/L		95	69 - 134		
2,3,4,6,7,8-HxCDF			1000	941.1		pg/L		94	68 - 136		
1,2,3,7,8,9-HxCDF			1000	940.4		pg/L		94	68 - 134		
1,2,3,4,6,7,8-HpCDD			1000	908.9		pg/L		91	68 - 129		
1,2,3,4,6,7,8-HpCDF			1000	991.9		pg/L		99	68 - 143		
1,2,3,4,7,8,9-HpCDF			1000	936.1		pg/L		94	68 - 129		
OCDD			2000	1883		pg/L		94	64 - 142		
OCDF			2000	1885		pg/L		94	68 - 134		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*87*		*40 - 135*
13C-2,3,7,8-TCDF	*92*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*92*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*94*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*90*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*91*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*80*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*84*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*86*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*81*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*97*		*40 - 135*
13C-OCDD	*92*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*102*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*103*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*91*		*40 - 135*
13C-OCDF	*98*		*40 - 135*

Lab Sample ID: LCSD 320-666163/3-A
Matrix: Water
Analysis Batch: 667880

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 666163

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2,3,7,8-TCDD			200	207.4		pg/L		104	66 - 146	5	20
2,3,7,8-TCDF			200	215.2		pg/L		108	67 - 153	5	20
1,2,3,7,8-PeCDD			1000	980.6		pg/L		98	71 - 131	6	20
1,2,3,7,8-PeCDF			1000	1023		pg/L		102	69 - 131	4	20
2,3,4,7,8-PeCDF			1000	1038		pg/L		104	68 - 131	5	20
1,2,3,4,7,8-HxCDD			1000	964.8		pg/L		96	64 - 131	6	20
1,2,3,6,7,8-HxCDD			1000	1049		pg/L		105	66 - 148	6	20
1,2,3,7,8,9-HxCDD			1000	1006		pg/L		101	59 - 148	0	20
1,2,3,4,7,8-HxCDF			1000	1012		pg/L		101	68 - 129	10	20
1,2,3,6,7,8-HxCDF			1000	977.2		pg/L		98	69 - 134	3	20
2,3,4,6,7,8-HxCDF			1000	989.4		pg/L		99	68 - 136	5	20
1,2,3,7,8,9-HxCDF			1000	990.1		pg/L		99	68 - 134	5	20
1,2,3,4,6,7,8-HpCDD			1000	962.7		pg/L		96	68 - 129	6	20
1,2,3,4,6,7,8-HpCDF			1000	1043		pg/L		104	68 - 143	5	20
1,2,3,4,7,8,9-HpCDF			1000	999.6		pg/L		100	68 - 129	7	20
OCDD			2000	2006		pg/L		100	64 - 142	6	20

Method: 8290 - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCSD 320-666163/3-A
Matrix: Water
Analysis Batch: 667880

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 666163

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
OCDF			2000	2016		pg/L		101	68 - 134	7	20

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*84*		*40 - 135*
13C-2,3,7,8-TCDF	*89*		*40 - 135*
13C-1,2,3,7,8-PeCDD	*87*		*40 - 135*
13C-1,2,3,7,8-PeCDF	*90*		*40 - 135*
13C-1,2,3,6,7,8-HxCDD	*98*		*40 - 135*
13C-2,3,4,7,8-PeCDF	*89*		*40 - 135*
13C-1,2,3,4,7,8-HxCDD	*83*		*40 - 135*
13C-1,2,3,4,7,8-HxCDF	*88*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDD	*83*		*40 - 135*
13C-1,2,3,4,6,7,8-HpCDF	*83*		*40 - 135*
13C-1,2,3,6,7,8-HxCDF	*106*		*40 - 135*
13C-OCDD	*82*		*40 - 135*
13C-1,2,3,7,8,9-HxCDF	*99*		*40 - 135*
13C-2,3,4,6,7,8-HxCDF	*105*		*40 - 135*
13C-1,2,3,4,7,8,9-HpCDF	*85*		*40 - 135*
13C-OCDF	*87*		*40 - 135*

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 570-316386/1-A
Matrix: Water
Analysis Batch: 316551

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 316386

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L		03/31/23 06:19	03/31/23 11:25	1
Copper	ND		2.00	0.318	ug/L		03/31/23 06:19	03/31/23 11:25	1
Lead	ND		1.00	0.118	ug/L		03/31/23 06:19	03/31/23 11:25	1

Lab Sample ID: LCS 570-316386/2-A
Matrix: Water
Analysis Batch: 316551

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 316386

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium			80.0	82.00		ug/L		102	85 - 115
Copper			80.0	80.51		ug/L		101	85 - 115
Lead			80.0	82.67		ug/L		103	85 - 115

Lab Sample ID: LCSD 570-316386/3-A
Matrix: Water
Analysis Batch: 316551

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 316386

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium			80.0	83.63		ug/L		105	85 - 115	2	20
Copper			80.0	82.39		ug/L		103	85 - 115	2	20
Lead			80.0	83.77		ug/L		105	85 - 115	1	20

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 570-316389/1-A
Matrix: Water
Analysis Batch: 316490

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.00	0.133	ug/L			03/31/23 09:17	1
Copper	ND		2.00	0.318	ug/L			03/31/23 09:17	1
Lead	ND		1.00	0.118	ug/L			03/31/23 09:17	1

Lab Sample ID: LCS 570-316389/2-A
Matrix: Water
Analysis Batch: 316490

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	80.0	79.97		ug/L		100	85 - 115
Copper	80.0	78.80		ug/L		98	85 - 115
Lead	80.0	80.77		ug/L		101	85 - 115

Lab Sample ID: LCSD 570-316389/3-A
Matrix: Water
Analysis Batch: 316490

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	80.0	80.74		ug/L		101	85 - 115	1	20
Copper	80.0	79.49		ug/L		99	85 - 115	1	20
Lead	80.0	81.92		ug/L		102	85 - 115	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 570-316587/1-A
Matrix: Water
Analysis Batch: 317032

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 316587

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/31/23 15:48	04/03/23 18:02	1

Lab Sample ID: LCS 570-316587/2-A
Matrix: Water
Analysis Batch: 317032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 316587

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00800	0.008175		mg/L		102	85 - 115

Lab Sample ID: LCSD 570-316587/3-A
Matrix: Water
Analysis Batch: 317032

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 316587

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	0.00800	0.008426		mg/L		105	85 - 115	3	10

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: MB 570-316343/1-B
Matrix: Water
Analysis Batch: 317032

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 316344

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.000200	0.000124	mg/L		03/30/23 23:34	04/03/23 16:29	1

Lab Sample ID: LCS 570-316343/2-B
Matrix: Water
Analysis Batch: 317032

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 316344

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury			0.00800	0.008358		mg/L		104	85 - 115		

Lab Sample ID: LCSD 570-316343/3-B
Matrix: Water
Analysis Batch: 317032

Client Sample ID: Lab Control Sample Dup
Prep Type: Dissolved
Prep Batch: 316344

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury			0.00800	0.008271		mg/L		103	85 - 115	1	10

Lab Sample ID: 570-133109-3 MS
Matrix: Water
Analysis Batch: 317032

Client Sample ID: EVBMP0009S021
Prep Type: Dissolved
Prep Batch: 316344

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Mercury	ND	H	0.00800	0.007698		mg/L		96	85 - 115		

Lab Sample ID: 570-133109-3 MSD
Matrix: Water
Analysis Batch: 317032

Client Sample ID: EVBMP0009S021
Prep Type: Dissolved
Prep Batch: 316344

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	H	0.00800	0.008424		mg/L		105	85 - 115	9	10

Method: SM 2130B - Turbidity

Lab Sample ID: LCSSRM 570-316315/1
Matrix: Water
Analysis Batch: 316315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			1000	1000		NTU		100.0	99.0 - 101.0		

Lab Sample ID: LCSSRM 570-316315/2
Matrix: Water
Analysis Batch: 316315

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			10.0	10		NTU		100.0	99.0 - 101.0		

Method: SM 2130B - Turbidity (Continued)

Lab Sample ID: LCSSRM 570-316315/3
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 316315

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec Limits		
Turbidity			0.0200	ND		NTU		100.0	0.0 - 200.0		

Lab Sample ID: 570-133109-2 DU
Client Sample ID: EVBMP0008S023
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 316315

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Turbidity	3.4			3.4		NTU				0.6	25

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 570-316653/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 316653

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		1.00	0.829	mg/L			03/31/23 19:00	1

Lab Sample ID: LCS 570-316653/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 316653

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	92.00		mg/L		92	77 - 116		

Lab Sample ID: LCSD 570-316653/3
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 316653

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Suspended Solids			100	94.00		mg/L		94	77 - 116	2	10

Specialty Organics

Prep Batch: 666163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Total/NA	Water	8290	
570-133109-2	EVBMP0008S023	Total/NA	Water	8290	
570-133109-3	EVBMP0009S021	Total/NA	Water	8290	
MB 320-666163/1-A	Method Blank	Total/NA	Water	8290	
LCS 320-666163/2-A	Lab Control Sample	Total/NA	Water	8290	
LCSD 320-666163/3-A	Lab Control Sample Dup	Total/NA	Water	8290	

Analysis Batch: 667880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Total/NA	Water	8290	666163
570-133109-2	EVBMP0008S023	Total/NA	Water	8290	666163
570-133109-3	EVBMP0009S021	Total/NA	Water	8290	666163
MB 320-666163/1-A	Method Blank	Total/NA	Water	8290	666163
LCS 320-666163/2-A	Lab Control Sample	Total/NA	Water	8290	666163
LCSD 320-666163/3-A	Lab Control Sample Dup	Total/NA	Water	8290	666163

Metals

Filtration Batch: 316343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Dissolved	Water	Filtration	
570-133109-2	EVBMP0008S023	Dissolved	Water	Filtration	
570-133109-3	EVBMP0009S021	Dissolved	Water	Filtration	
MB 570-316343/1-B	Method Blank	Dissolved	Water	Filtration	
LCS 570-316343/2-B	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-316343/3-B	Lab Control Sample Dup	Dissolved	Water	Filtration	
570-133109-3 MS	EVBMP0009S021	Dissolved	Water	Filtration	
570-133109-3 MSD	EVBMP0009S021	Dissolved	Water	Filtration	

Prep Batch: 316344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Dissolved	Water	245.1	316343
570-133109-2	EVBMP0008S023	Dissolved	Water	245.1	316343
570-133109-3	EVBMP0009S021	Dissolved	Water	245.1	316343
MB 570-316343/1-B	Method Blank	Dissolved	Water	245.1	316343
LCS 570-316343/2-B	Lab Control Sample	Dissolved	Water	245.1	316343
LCSD 570-316343/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	316343
570-133109-3 MS	EVBMP0009S021	Dissolved	Water	245.1	316343
570-133109-3 MSD	EVBMP0009S021	Dissolved	Water	245.1	316343

Prep Batch: 316386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Total Recoverable	Water	200.8	
570-133109-2	EVBMP0008S023	Total Recoverable	Water	200.8	
570-133109-3	EVBMP0009S021	Total Recoverable	Water	200.8	
MB 570-316386/1-A	Method Blank	Total Recoverable	Water	200.8	
LCS 570-316386/2-A	Lab Control Sample	Total Recoverable	Water	200.8	
LCSD 570-316386/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	

Metals

Filtration Batch: 316389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Dissolved	Water	Filtration	
570-133109-2	EVBMP0008S023	Dissolved	Water	Filtration	
570-133109-3	EVBMP0009S021	Dissolved	Water	Filtration	
MB 570-316389/1-A	Method Blank	Dissolved	Water	Filtration	
LCS 570-316389/2-A	Lab Control Sample	Dissolved	Water	Filtration	
LCSD 570-316389/3-A	Lab Control Sample Dup	Dissolved	Water	Filtration	

Analysis Batch: 316490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Dissolved	Water	200.8	316389
570-133109-2	EVBMP0008S023	Dissolved	Water	200.8	316389
570-133109-3	EVBMP0009S021	Dissolved	Water	200.8	316389
MB 570-316389/1-A	Method Blank	Dissolved	Water	200.8	316389
LCS 570-316389/2-A	Lab Control Sample	Dissolved	Water	200.8	316389
LCSD 570-316389/3-A	Lab Control Sample Dup	Dissolved	Water	200.8	316389

Analysis Batch: 316551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Total Recoverable	Water	200.8	316386
570-133109-2	EVBMP0008S023	Total Recoverable	Water	200.8	316386
570-133109-3	EVBMP0009S021	Total Recoverable	Water	200.8	316386
MB 570-316386/1-A	Method Blank	Total Recoverable	Water	200.8	316386
LCS 570-316386/2-A	Lab Control Sample	Total Recoverable	Water	200.8	316386
LCSD 570-316386/3-A	Lab Control Sample Dup	Total Recoverable	Water	200.8	316386

Prep Batch: 316587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Total/NA	Water	245.1	
570-133109-2	EVBMP0008S023	Total/NA	Water	245.1	
570-133109-3	EVBMP0009S021	Total/NA	Water	245.1	
MB 570-316587/1-A	Method Blank	Total/NA	Water	245.1	
LCS 570-316587/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 570-316587/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	

Analysis Batch: 317032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Dissolved	Water	245.1	316344
570-133109-1	EVBMP0007S020	Total/NA	Water	245.1	316587
570-133109-2	EVBMP0008S023	Dissolved	Water	245.1	316344
570-133109-2	EVBMP0008S023	Total/NA	Water	245.1	316587
570-133109-3	EVBMP0009S021	Dissolved	Water	245.1	316344
570-133109-3	EVBMP0009S021	Total/NA	Water	245.1	316587
MB 570-316343/1-B	Method Blank	Dissolved	Water	245.1	316344
MB 570-316587/1-A	Method Blank	Total/NA	Water	245.1	316587
LCS 570-316343/2-B	Lab Control Sample	Dissolved	Water	245.1	316344
LCS 570-316587/2-A	Lab Control Sample	Total/NA	Water	245.1	316587
LCSD 570-316343/3-B	Lab Control Sample Dup	Dissolved	Water	245.1	316344
LCSD 570-316587/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	316587
570-133109-3 MS	EVBMP0009S021	Dissolved	Water	245.1	316344
570-133109-3 MSD	EVBMP0009S021	Dissolved	Water	245.1	316344

Client: Jacobs Engineering Group, Inc.
Job ID: 570-133109-1
Project/Site: NASA SSFL CJ042 Stormwater

General Chemistry

Analysis Batch: 316315

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-2	EVBMP0008S023	Total/NA	Water	SM 2130B	
570-133109-3	EVBMP0009S021	Total/NA	Water	SM 2130B	
LCSSRM 570-316315/1	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-316315/2	Lab Control Sample	Total/NA	Water	SM 2130B	
LCSSRM 570-316315/3	Lab Control Sample	Total/NA	Water	SM 2130B	
570-133109-2 DU	EVBMP0008S023	Total/NA	Water	SM 2130B	

Analysis Batch: 316653

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Total/NA	Water	SM 2540D	
570-133109-2	EVBMP0008S023	Total/NA	Water	SM 2540D	
570-133109-3	EVBMP0009S021	Total/NA	Water	SM 2540D	
MB 570-316653/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 570-316653/2	Lab Control Sample	Total/NA	Water	SM 2540D	
LCSD 570-316653/3	Lab Control Sample Dup	Total/NA	Water	SM 2540D	

Geotechnical

Analysis Batch: 317524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-133109-1	EVBMP0007S020	Total/NA	Water	D4464	
570-133109-2	EVBMP0008S023	Total/NA	Water	D4464	
570-133109-3	EVBMP0009S021	Total/NA	Water	D4464	
LCS 570-317524/17	Lab Control Sample	Total/NA	Water	D4464	
LCSD 570-317524/19	Lab Control Sample Dup	Total/NA	Water	D4464	

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Job ID: 570-133109-1
Project/Site: NASA SSFL CJ042 Stormwater

Client Sample ID: EVBMP0007S020
Lab Sample ID: 570-133109-1

Date Collected: 03/29/23 09:50
Matrix: Water
Date Received: 03/30/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			867.4 mL	20.0 uL	666163	04/07/23 08:17	CB	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	667880	04/14/23 18:37	DB	EET SAC
	Instrument ID: 12D5									
Dissolved	Filtration	Filtration			50 mL	50 mL	316389	03/31/23 06:32	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			316490	03/31/23 09:01	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	316386	03/31/23 06:19	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			316551	03/31/23 12:01	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	316343	03/30/23 23:00	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	316344	03/30/23 23:34	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			317032	04/03/23 16:44	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	316587	03/31/23 15:48	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			317032	04/03/23 18:42	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	316653	03/31/23 19:00	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	D4464		1			317524	04/05/23 10:51	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0008S023
Lab Sample ID: 570-133109-2

Date Collected: 03/29/23 10:05
Matrix: Water
Date Received: 03/30/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1015.8 mL	20.0 uL	666163	04/07/23 08:17	CB	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	667880	04/14/23 19:25	DB	EET SAC
	Instrument ID: 12D5									
Dissolved	Filtration	Filtration			50 mL	50 mL	316389	03/31/23 06:32	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			316490	03/31/23 09:04	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	316386	03/31/23 06:19	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			316551	03/31/23 12:03	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	316343	03/30/23 23:00	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	316344	03/30/23 23:34	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			317032	04/03/23 16:46	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	316587	03/31/23 15:48	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			317032	04/03/23 18:44	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			316315	03/30/23 20:34	TXA8	EET CAL 4
	Instrument ID: TUR4									

Lab Chronicle

Client: Jacobs Engineering Group, Inc.
Job ID: 570-133109-1
Project/Site: NASA SSFL CJ042 Stormwater

Client Sample ID: EVBMP0008S023
Lab Sample ID: 570-133109-2
Date Collected: 03/29/23 10:05
Matrix: Water
Date Received: 03/30/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	316653	03/31/23 19:00	BDH9	EET CAL 4
Total/NA	Analysis	D4464		1			317524	04/05/23 11:02	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Client Sample ID: EVBMP0009S021
Lab Sample ID: 570-133109-3
Date Collected: 03/29/23 10:20
Matrix: Water
Date Received: 03/30/23 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	8290			1038.5 mL	20.0 uL	666163	04/07/23 08:17	CB	EET SAC
Total/NA	Analysis	8290		1	1 Sample	1 Sample	667880	04/14/23 20:12	DB	EET SAC
	Instrument ID: 12D5									
Dissolved	Filtration	Filtration			50 mL	50 mL	316389	03/31/23 06:32	JP8N	EET CAL 4
Dissolved	Analysis	200.8		1			316490	03/31/23 09:06	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Total Recoverable	Prep	200.8			50 mL	50 mL	316386	03/31/23 06:19	JP8N	EET CAL 4
Total Recoverable	Analysis	200.8		1			316551	03/31/23 12:06	Y2WS	EET CAL 4
	Instrument ID: ICPMS09									
Dissolved	Filtration	Filtration			25 mL	25 mL	316343	03/30/23 23:00	CS5Z	EET CAL 4
Dissolved	Prep	245.1			25 mL	50 mL	316344	03/30/23 23:34	CS5Z	EET CAL 4
Dissolved	Analysis	245.1		1			317032	04/03/23 16:51	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Prep	245.1			25 mL	50 mL	316587	03/31/23 15:48	CS5Z	EET CAL 4
Total/NA	Analysis	245.1		1			317032	04/03/23 18:46	C0YH	EET CAL 4
	Instrument ID: HG8									
Total/NA	Analysis	SM 2130B		1			316315	03/30/23 20:37	TXA8	EET CAL 4
	Instrument ID: TUR4									
Total/NA	Analysis	SM 2540D		1	1000 mL	1000 mL	316653	03/31/23 19:00	BDH9	EET CAL 4
	Instrument ID: BAL71									
Total/NA	Analysis	D4464		1			317524	04/05/23 11:13	C6FB	EET CAL 4
	Instrument ID: NOEQUIP									

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: Jacobs Engineering Group, Inc. Job ID: 570-133109-1
Project/Site: NASA SSFL CJ042 Stormwater

Laboratory: Eurofins Calscience

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	3082	07-31-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8		Water	Cadmium
200.8		Water	Copper
200.8		Water	Lead
200.8	200.8	Water	Cadmium
200.8	200.8	Water	Copper
200.8	200.8	Water	Lead
245.1	245.1	Water	Mercury
D4464		Water	Clay (less than 0.00391 mm)
D4464		Water	Coarse Sand (0.5mm to 1mm)
D4464		Water	Fine Sand (0.125 to 0.25mm)
D4464		Water	Gravel (greater than 2 mm)
D4464		Water	Medium Sand (0.25 to 0.5 mm)
D4464		Water	Silt (0.00391 to 0.0625mm)
D4464		Water	Total Silt and Clay (0 to 0.0626mm)
D4464		Water	Very Coarse Sand (1 to 2mm)
D4464		Water	Very Fine Sand (0.0625 to 0.125 mm)
SM 2130B		Water	Turbidity

Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2897	01-22-24

Method Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-133109-1

Method	Method Description	Protocol	Laboratory
8290	Dioxins and Furans (HRGC/HRMS)	SW846	EET SAC
200.8	Metals (ICP/MS)	EPA	EET CAL 4
245.1	Mercury (CVAA)	EPA	EET CAL 4
SM 2130B	Turbidity	SM	EET CAL 4
SM 2540D	Solids, Total Suspended (TSS)	SM	EET CAL 4
D4464	Particle Size Distribution of Catalytic Material (Laser light scattering)	ASTM	EET CAL 4
200.8	Preparation, Total Recoverable Metals	EPA	EET CAL 4
245.1	Preparation, Mercury	EPA	EET CAL 4
8290	Separatory Funnel (Liquid-Liquid) Extraction of Dioxins and Furans	SW846	EET SAC
Filtration	Sample Filtration	None	EET CAL 4

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CAL 4 = Eurofins Calscience Tustin, 2841 Dow Avenue, Tustin, CA 92780, TEL (714)895-5494

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Sample Summary

Client: Jacobs Engineering Group, Inc.
Project/Site: NASA SSFL CJ042 Stormwater

Job ID: 570-133109-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
570-133109-1	EVBMP0007S020	Water	03/29/23 09:50	03/30/23 17:10
570-133109-2	EVBMP0008S023	Water	03/29/23 10:05	03/30/23 17:10
570-133109-3	EVBMP0009S021	Water	03/29/23 10:20	03/30/23 17:10

Chain of Custody Record

COC Number: CALS03292301

JACOBS

3/29/2023 12:18:30 PM

Project Name	SSFL	**Project Manager**	Randy Dean
Project	CJ042 Stormwater PO 148015891		
Location	Santa Susana Field Lab	**Sample Manager**	
Project Number	D3377900		
Task Order	42		
PO Number	148015891		
Turnaround Time	10 Days		

570-133109 Chain of Custody

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180.1/2130B	200.8/245.1	200.8/245.1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0007S020	28-Mar-23 9:50	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
TSS				4'C	☐	1	☐	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						
EVBMP0008S023	28-Mar-23 10:05	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4'C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

1

2

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN BENSON	03/29/23
Relinquished by		3/30/23 1005
Received by		3.30.23/1005
Relinquished by		3.30.23/1200
Received by	EC	3/30/23 1200
Relinquished by:	EC	3/30/23 1710
Recd by:		3/30/23 1710

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

2.2/2.1 SC12

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to
Mark Fesler
(530) 229-3273

Chain of Custody Record

COC Number: CALS03292301

JACOBS

3/29/2023 12:18:30 PM

Project Name	SSFL
Project	CJ042 Stormwater PO 148015891
Location	Santa Susana Field Lab
Project Number	D3377900
Task Order	42
PO Number	148015891
Turnaround Time	10 Days
Project Manager	Randy Dean
Sample Manager	

Sample ID	Sample Date/Time	Type	Matrix	Preservative	Field Filtered	# Containers	180.1/2130B	200.8/245.1	200.8/245.1F	ASTMD4464	SM2540	SW8290/1613B
EVBMP0009S021	28-Mar-23 10:20	N	Water									
Dioxins-17 congeners				4'C	☐	2	☐	☐	☐	☐	☐	☑
Turbidity TSS				4'C	☐	1	☑	☐	☐	☐	☑	☐
LAB FILTER - Dissolved Cd, Cu, Pb, Hg				4'C	☐	1	☐	☐	☑	☐	☐	☐
Cd, Cu, Pb, Hg				HNO3, 4'C	☐	1	☐	☑	☐	☐	☐	☐
Particle Size Distribution				4'C	☐	1	☐	☐	☐	☑	☐	☐
				Total Containers:		6						

3

MS = Matrix Spike **SD = Matrix Spike Duplicate**

	Signatures	Date/Time
Sampled by	BRYAN BENSON	3/29/23
Relinquished by		3/30/23 1045
Received by		3.30.23/1045
Relinquished by		3.30.23/1200
Received by	EC	3/30/23 1200
Relinquished by:	EC	3/30/23 1710
Rec'd by:		3/30/23 1716

Shipping Details

Shipment Method: FedEx

Airbill No:

Lab Name: Eurofins/Calscience

Lab Phone: (714) 895-5494

On Ice: yes / no **Cooler Temp** _____

ATTN:

Sample Custody
and
Lori Thompson

Special Instructions:

See attached table for congener list

Report Copy to

Mark Fesler
(530) 229-3273

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-213957.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-133109-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/12/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EVBMP0007S020 (570-133109-1)	3/29/23	09:50 Pacific		Water			X	2	
EVBMP0008S023 (570-133109-2)	3/29/23	10:05 Pacific		Water			X	2	
EVBMP0009S021 (570-133109-3)	3/29/23	10:20 Pacific		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	3/31/23 1252				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-213957.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-133109-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/12/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
EVBMP0007S020 (570-133109-1)	3/29/23	09:50 Pacific		Water			X	2	
EVBMP0008S023 (570-133109-2)	3/29/23	10:05 Pacific		Water			X	2	
EVBMP0009S021 (570-133109-3)	3/29/23	10:20 Pacific		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature]	3/31/23 1252		[signature]	4-1-23 09:15	EETSAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Calscience
2841 Dow Avenue, Suite 100
Tustin, CA 92780
Phone: 714-895-5494

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Thompson, Lori	Carrier Tracking No(s):	COC No: 570-213957.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Lori.Thompson@et.eurofinsus.com	State of Origin: California	Page: Page 1 of 1
Company: Eurofins Environment Testing Northern Ca		Accreditations Required (See note): State - California		Job #: 570-133109-1
Address: 880 Riverside Parkway, ,	Due Date Requested: 4/12/2023			
City: West Sacramento	TAT Requested (days):			
State, Zip: CA, 95605				
Phone: 916-373-5600(Tel) 916-372-1059(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA SSFL CJ042 Stormwater	Project #: 57006621			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8290/8290_P_Sep (MOD) 17 Isomers List	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X		X	
EVBMP0007S020 (570-133109-1)	3/29/23	09:50 Pacific		Water			X	2	
EVBMP0008S023 (570-133109-2)	3/29/23	10:05 Pacific		Water			X	2	
EVBMP0009S021 (570-133109-3)	3/29/23	10:20 Pacific		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Calscience places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Calscience laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Calscience attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Calscience.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		3/31/23 1252			4-1-23 / 09:14	EETSAC
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-133109-1

Login Number: 133109

List Source: Eurofins Calscience

List Number: 1

Creator: Ortiz-Luis, Michael

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Jacobs Engineering Group, Inc.

Job Number: 570-133109-1

Login Number: 133109
List Number: 2
Creator: Simmons, Jason C

List Source: Eurofins Sacramento
List Creation: 04/01/23 12:04 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	Seal
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	1.4c 4.1c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

BOEING VALIDATION REPORTS

Haley & Aldrich, Inc.
600 South Meyer Ave
Suite 100
Tucson, AZ 85701
520.289.8621

Data Usability Summary Report

Project Name: The Boeing Company, Santa Susana Field Laboratory, ISRA and BMP

Project Description: First Quarter 2023

Sample Date(s): November 2022 through March 2023

Analytical Laboratory: Eurofins Calscience – Tustin, CA

Validation Performed by: Therese Rowland, Kristina Ilina

Validation Reviewed by: Vanessa Godard

Validation Date: 10 June 2023

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDG) listed in Section 1.1. This DUSR is organized into the following sections:

1. **First Quarter 2023**
2. **Explanations**
3. **Glossary**
4. **Abbreviations**
5. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the U.S. Environmental Protection Agency (USEPA) using the following reference materials:

- National Functional Guidelines (NFG) for Inorganic Data Review.
- NFG for Organic Data Review.
- USEPA Contract Laboratory Program (CLP) NFG for Chlorinated Dioxin/Furan Data Review.
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see References Section).

Data reported in this sampling event were reported to the laboratory estimated detection limit (EDL) or method detection limit (MDL). Results found between the EDL or MDL and laboratory reporting limit (RL) are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOP). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQO) for the project and therefore usable; any exceptions are noted in the following pages.

1. First Quarter 2023

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers listed in Table 1.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol.

- Samples were subcontracted to Eurofins Sacramento in West Sacramento, California.

Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- The collection date for samples BGBMP0003_20230110 and LXBMP0011_20230110 was corrected to 01/10/2023 in the lab.
- The samples EPBBC_20230322 and EPBLLC_20230315 names do not match in original and subcontracted COCs.
- SDG 570-132013-3, 570-132015-3: The Field Sampler's name was not listed on the COC.

Analyses were performed on the samples listed in Table 2. Method holding times are listed in Table 3.

1.2 CASE NARRATIVE

The laboratory report case narrative lists various additional quality control issues such as internal standard exceedances and initial calibration verification (ICV) and/or continuing calibration verification (CCV) exceedances. Since these additional quality control issues were not required for the project's DQOs, these quality control issues were not reviewed.

The laboratory report case narratives included the following issues:

- SDG 570-129285-3, 570-132015-3: The ending resolution check indicated that the instrument was slightly less than 10,000 resolutions. The samples were evaluated for high mass fragmentation breakthrough, and none was found. There is no adverse impact on the data.

1.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

1.4 REPORTING LIMITS AND SAMPLE DILUTIONS

The RLs for the samples within this SDG met or were below the minimum RL requirements specified by the project-specific QAPP with the following exceptions:

- Elevated RLs are provided for the samples with insufficient volume provided for preparation.
- Elevated RLs are provided for the samples which required the dilution due to the nature of the sample matrix.

1.5 SURROGATE RECOVERY COMPLIANCE

Refer to section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory specified quality control limits.

1.6 LABORATORY CONTROL SAMPLES

Refer to section E 1.3. Compounds associated with the laboratory control samples/laboratory control sample duplicates (LCS/LCSD) analyses exhibited recoveries and relative percent differences (RPD) within the specified limits with the following exceptions:

SDG #	Sample Type	Method	Batch ID	Analyte	%R	Qualifier	Affected Samples
570-123671-2	LCS	E1613B	647614	1,2,3,7,8,9-HxCDD	202%	J/UJ	EPBLLC_011023 EPBMC_010923 EPBBC_010923 EPBMC_011023

1.7 MATRIX SPIKE SAMPLES

Refer to section E 1.4. No client samples were used for matrix spike/matrix spike duplicate (MS/MSD) analysis in this SDG.

1.8 BLANK SAMPLE ANALYSIS

Refer to section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred with the exceptions summarized in Table 4.

1.9 DUPLICATE SAMPLE ANALYSIS

Refer to section E 1.6. The laboratory did not analyze any laboratory duplicates as per the method or laboratory SOP.

1.10 PRECISION AND ACCURACY

Refer to section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

1.11 DIOXIN/FURAN ESTIMATED MAXIMUM POSSIBLE CONCENTRATION (EMPC)

Refer to section E 1.9. A result previously qualified as a non-detect for method blank contamination was not further qualified as an EMPC. A summary of remaining EMPC flags can be found in Table 5.

1.12 COMPOUND IDENTIFICATION

The second-column confirmation analysis for isomer 2,3,7,8-TCDF did not confirm the initial result for samples listed in Table 6. As the confirmation column is more specific for the detection of 2,3,7,8-TCDF, the confirmation results were retained, and the initial result rejected (R) as duplicate data.

1.13 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this DUSR were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable. A summary of qualifiers applied to this data set are shown in Table 7.

2. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.2 Surrogate Recovery Compliance
  - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determining the efficiency of the extraction procedure by evaluating the percent recovery (%R) of the compounds.
- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
  - Field blanks are prepared to identify contamination that may have been introduced during field activity. Equipment blanks are prepared to identify contamination that may have been introduced while decontaminating sampling equipment. Trip blanks are prepared when volatile analysis is requested to identify contamination that may have been introduced during transport.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.

- E 1.9 Dioxin/Furan Estimated Maximum Possible Concentration
  - An Estimated Maximum Possible Concentration (EMPC) is a worst-case estimate of the concentration for a dioxin/furan based on all identification criteria being met except the ion abundance ratio criteria, or if a peak representing a chlorinated diphenyl ether was detected.

3. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - % SURVIVAL percent survival
  - µg/L microgram per liter
  - mg/kg milligrams per kilogram
  - mg/L milligram per liter
  - mL/L milliliters per liter
  - mpn/100mL most probable number per 100 milliliters
  - NTU nephelometric turbidity unit
  - pCi/L picocuries per liter
  - µmhos/cm micromhos per centimeter
- Matrices:
  - WM Stormwater
  - WMQ Water Quality control matrix
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)
- Fractions:
  - D Dissolved (filtered)
  - N Normal (method cannot be filtered)
  - T Total (unfiltered)

4. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DQO	data quality objective
DUSR	Data Usability Summary Report
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/ Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
NH_3	Ammonia
PCB	Polychlorinated Biphenyl
PDS	Post Digestion Spike
PEM	Performance Evaluation Mixture
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RER	Relative Error Ratio
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factors
RT	Retention Time
SAP	sampling analysis plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Laboratory Standard Operating Procedures
SPE	Solid Phase Extraction
SVOC	Semi-Volatile Organic Compounds
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
amu	atomic mass unit
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compounds

5. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Laboratory Qualifiers:

BA	Relative percent difference out of control.
BU	Analyzed out of holding time.
BV	Sample received after holding time expired.
EY	Result exceeds normal dynamic range; reported as a minimum estimate.
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
J,DX	Results found between the EDL or MDL and laboratory RL.
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS).
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS).
LQ	LCS/LCSD recovery above method control limits.
MB	Analyte present in the method blank.
PI	Primary and confirm results varied by > than 40% RPD.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio; the measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
U	Result is less than the sample detection limit.

- Validation Notes:

--	Based on validation of the data, a qualifier was not required.
*1	Improper preservation of sample.
*III	Unusual problems found with the data that have been described in the validation report.
B	Laboratory method blank contamination.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
DNQ	Detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit).
E	Duplicates show poor agreement.
H	Holding times were exceeded.
L1	Laboratory control standard (LCS)/laboratory control standard duplicate (LCSD), relative percent difference (RPD) was outside the control limit.
Q	Matrix spike (MS) recovery outside of control limits.
RPD	Pesticides and PCB Confirmation Column RPD Exceeded.

- Validation Qualifiers:

=	No Qualifier.
J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
J-	The result is an estimated quantity, but the result may be biased low.
J+	The result is an estimated quantity, but the result may be biased high.
R	The sample results were rejected as unusable; the compound may or may not be present in the sample.
U	The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or “ND”.
UJ	The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

Attachments:

Table 1 – SDGS Summary
Table 2 – Sample Management
Table 3 – Method Description
Table 4 – Method Blanks
Table 5 – Dioxin-Furan EMPC
Table 6 – Compound Identification
Table 7 – Summary of Qualifiers

References

1. United States Environmental Protection Agency (USEPA), 2011. USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Chlorinated Dibenzo-p-Dioxins (CDDs) and Chlorinated Dibenzofurans (CDFs) Data Review. EPA-540-R-11-016. September.

2. USEPA, 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-542-R-20-006. November 2020.

3. USEPA, 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-20-005. November 2020.

4. Haley & Aldrich, Inc, 2015. Quality Assurance Project Field Plan for Santa Susana Field Laboratory Stormwater Sampling Program. December.

TABLES

TABLE 1
SDGS SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#
5701162652
5701204612
5701204663
5701204713
5701225242
5701226872
5701229952
5701229993
5701230092
5701236712
5701239002
5701239012
5701239023
5701242522
5701242592
5701242602
5701242622
5701242633
5701257462
5701290054
5701290444
5701290454
5701290464
5701292853
5701310734
5701312624
5701312644
5701314494
5701320133
5701320153
5701321404
5701323163
5701323334
5701323364
5701323374

TABLE 2
SAMPLE MANAGEMENT
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Method(s)
B1BMP009_20221108	N	570-116265-1	11/08/2022	WM	A
LPBMP0002_DUP_20221108	N	570-116265-10	11/08/2022	WM	A
EPSW001IE01_20221108	N	570-116265-11	11/08/2022	WM	A
B1BMP010_20221108	N	570-116265-2	11/08/2022	WM	A
B1BMP011_20221108	N	570-116265-3	11/08/2022	WM	A
ILBMP0004_20221108	N	570-116265-4	11/08/2022	WM	A
ILBMP0005_20221108	N	570-116265-5	11/08/2022	WM	A
ILBMP0008_20221108	N	570-116265-6	11/08/2022	WM	A
LPBMP0002_20221108	N	570-116265-7	11/08/2022	WM	A
LPBMP0003_20221108	N	570-116265-8	11/08/2022	WM	A
LPBMP0004_20221108	N	570-116265-9	11/08/2022	WM	A
EPSW001IE01_20221211	N	570-120461-1	12/11/2022	WM	A
A1BMP0002_20221211	N	570-120466-1	12/11/2022	WM	A
A1BMP0003_20221211	N	570-120466-2	12/11/2022	WM	A
ILBMP0002_20221211	N	570-120466-3	12/11/2022	WM	A
EPNDSW04_20221211	N	570-120466-4	12/11/2022	WM	A
EPNDSW04_20221211-02	N	570-120466-5	12/11/2022	WM	A
BGBMP0003_20221211	N	570-120471-1	12/11/2022	WM	A
ILBMP0004_20230103	N	570-122524-1	01/03/2023	WM	A
ILBMP0005_20230103	N	570-122524-2	01/03/2023	WM	A
ILBMP0008_20230103	N	570-122524-3	01/03/2023	WM	A
LPBMP0002_20230103	N	570-122524-4	01/03/2023	WM	A
LPBMP0003_20230103	N	570-122524-5	01/03/2023	WM	A
LPBMP0004_20230103	N	570-122524-6	01/03/2023	WM	A
EPBBC_20230105	N	570-122687-1	01/05/2023	WM	A
A1BMP0002_20230104	N	570-122995-1	01/04/2023	WM	A
A1BMP0003_20230104	N	570-122995-2	01/04/2023	WM	A
B1BMP0009_20230104	N	570-122995-3	01/04/2023	WM	A
B1BMP0010_20230104	N	570-122995-4	01/04/2023	WM	A
B1BMP0011_20230104	N	570-122995-5	01/04/2023	WM	A
ILBMP0002_20230104	N	570-122995-6	01/04/2023	WM	A
EPNDSW04_20230104	N	570-122995-7	01/04/2023	WM	A
EPSW001IE01_20230104	N	570-122999-1	01/04/2023	WM	A
A1BPSW0001_20230104	N	570-122999-2	01/04/2023	WM	A
BGBMP0003_20230104	N	570-123009-1	01/04/2023	WM	A
EPBLLC_011023	N	570-123671-1	01/10/2023	WM	A
EPBMC_010923	N	570-123671-2	01/09/2023	WM	A
EPBBC_010923	N	570-123671-3	01/09/2023	WM	A
EPBMC_011023	N	570-123671-4	01/10/2023	WM	A
LXBMP0010_20230110	N	570-123900-1	01/10/2023	WM	A
LXBMP0012_20230110	N	570-123900-2	01/10/2023	WM	A
BGBMP0003_20230110	N	570-123901-1	01/10/2023	WM	A
LXBMP0011_20230110	N	570-123901-2	01/10/2023	WM	A
EPSW001IE01_20230110	N	570-123902-1	01/10/2023	WM	A
A1BPSW0001_20230110	N	570-123902-2	01/10/2023	WM	A
EPBLLC_011523	N	570-124252-1	01/15/2023	WM	A
EPBMC_011523	N	570-124252-2	01/15/2023	WM	A
EPBBC_011523	N	570-124252-3	01/15/2023	WM	A

TABLE 2
SAMPLE MANAGEMENT
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Method(s)
LXBMP0010_20230114	N	570-124259-1	01/14/2023	WM	A
LXBMP0012_20230114	N	570-124259-2	01/14/2023	WM	A
LXBMP0011_20230114	N	570-124260-1	01/14/2023	WM	A
BGBMP0003_20230114	N	570-124262-1	01/15/2023	WM	A
EPSW001IE01_20230114	N	570-124263-1	01/14/2023	WM	A
A1BPSW0001_20230114	N	570-124263-2	01/14/2023	WM	A
EPBLLC_20230130	N	570-125746-1	01/30/2023	WM	A
EPBBC_20230130	N	570-125746-2	01/30/2023	WM	A
BGBMP0003_20230225	N	570-129005-1	02/25/2023	WM	A
EPBMC_20230226	N	570-129044-1	02/26/2023	WM	A
EPBLLC_20230226	N	570-129045-1	02/26/2023	WM	A
EPBBC_20230226	N	570-129046-1	02/26/2023	WM	A
EPSW001IE01_20230224	N	570-129285-1	02/24/2023	WM	A
A1BPSW0001_20230224	N	570-129285-2	02/24/2023	WM	A
BGMP0003_20230314	N	570-131073-1	03/14/2023	WM	A
EPBLLC_20230315	N	570-131262-1	03/15/2023	WM	A
EPBBC_20230315	N	570-131264-1	03/15/2023	WM	A
EPBMC_20230316	N	570-131449-1	03/16/2023	WM	A
EPSW001IE01_20230321	N	570-132013-1	03/21/2023	WM	A
EPSW001IE01_20230314	N	570-132015-1	03/14/2023	WM	A
BGBMP0003_20230322	N	570-132140-1	03/22/2023	WM	A
FGD-20230322	N	570-132316-1	03/22/2023	WM	A
CC-20230322	N	570-132316-2	03/22/2023	WM	A
EPBMC_20230323	N	570-132333-1	03/23/2023	WM	A
EPBLLC_20230323	N	570-132336-1	03/23/2023	WM	A
EPBBC_20230322	N	570-132337-1	03/22/2023	WM	A

TABLE 3
METHOD DESCRIPTION
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Letter Code	Analytic Method	Method Description	Holding Time
A	E1613B	United States Environmental Protection Agency Standard Method for High Resolution Analysis of Dioxins/Furans	1 year, preserved

TABLE 4
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Batch ID	Analyte Detected in Blank	Concentration (µg/L)	Qualifier	Affected Samples
636198	1,2,3,4,6,7,8-HpCDD	0.00000438 J,DX q	Result U	B1BMP010_20221108, B1BMP011_20221108, ILBMP0005_20221108
636198	1,2,3,4,6,7,8-HpCDF	0.00000442 J,DX	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, ILBMP0004_20221108, ILBMP0005_20221108
636198	1,2,3,4,7,8,9-HpCDF	0.00000322 J,DX	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, ILBMP0004_20221108, ILBMP0008_20221108, LPBMP0002_20221108
636198	1,2,3,4,7,8-HxCDD	0.00000393 J,DX q	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, ILBMP0004_20221108, ILBMP0005_20221108, ILBMP0008_20221108, LPBMP0002_20221108
636198	1,2,3,4,7,8-HxCDF	0.00000277 J,DX q	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, ILBMP0004_20221108, ILBMP0005_20221108, ILBMP0008_20221108, LPBMP0002_20221108
636198	1,2,3,6,7,8-HxCDD	0.00000364 J,DX	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, ILBMP0004_20221108, ILBMP0005_20221108, ILBMP0008_20221108, LPBMP0002_20221108
636198	1,2,3,6,7,8-HxCDF	0.00000312 J,DX	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, ILBMP0004_20221108, ILBMP0005_20221108, ILBMP0008_20221108, LPBMP0002_20221108
636198	1,2,3,7,8,9-HxCDD	0.00000364 J,DX	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, ILBMP0004_20221108, ILBMP0005_20221108, ILBMP0008_20221108, LPBMP0002_20221108
636198	1,2,3,7,8,9-HxCDF	0.00000525 J,DX	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, ILBMP0004_20221108, ILBMP0005_20221108, ILBMP0008_20221108, LPBMP0002_20221108
636198	1,2,3,7,8-PeCDD	0.00000311 J,DX	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, LPBMP0002_20221108
636198	1,2,3,7,8-PeCDF	0.00000399 J,DX	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, ILBMP0004_20221108, ILBMP0005_20221108, ILBMP0008_20221108, LPBMP0002_20221108
636198	2,3,4,6,7,8-HxCDF	0.00000331 J,DX q	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, ILBMP0004_20221108, ILBMP0005_20221108, ILBMP0008_20221108, LPBMP0002_20221108
636198	2,3,4,7,8-PeCDF	0.00000250 J,DX	Result U	B1BMP009_20221108, B1BMP011_20221108, ILBMP0008_20221108, LPBMP0002_20221108
636198	OCDD	0.0000222 J,DX q	Result U	ILBMP0005_20221108
636198	OCDF	0.00000600 J,DX	Result U	B1BMP009_20221108, B1BMP010_20221108, B1BMP011_20221108, ILBMP0004_20221108, ILBMP0005_20221108, LPBMP0002_20221108, EPSW001IF01_20221108

TABLE 5
DIOXIN-FURAN EMPC
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG #	Lab ID	Analyte	Concentration (µg/L)	Qualifier	Affected Samples
5701162652	570-116265-8	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	8.7E-07	UJ	LPBMP0003_20221108
5701204663	570-120466-5	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.4E-06	UJ	EPNDSW04_20221211-02
5701204713	570-120471-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	6.4E-07	UJ	BGBMP0003_20221211
5701225242	570-122524-1	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.1E-06	UJ	ILBMP0004_20230103
5701225242	570-122524-1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.2E-05	UJ	ILBMP0004_20230103
5701225242	570-122524-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.3E-06	UJ	ILBMP0004_20230103
5701225242	570-122524-2	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-06	UJ	ILBMP0005_20230103
5701225242	570-122524-2	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	UJ	ILBMP0005_20230103
5701225242	570-122524-2	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.0E-07	UJ	ILBMP0005_20230103
5701225242	570-122524-3	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.1E-06	UJ	ILBMP0008_20230103
5701225242	570-122524-3	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.7E-06	UJ	ILBMP0008_20230103
5701225242	570-122524-3	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.1E-06	UJ	ILBMP0008_20230103
5701225242	570-122524-4	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	9.5E-07	UJ	LPBMP0002_20230103
5701225242	570-122524-4	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	8.8E-07	UJ	LPBMP0002_20230103
5701225242	570-122524-4	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.2E-06	UJ	LPBMP0002_20230103
5701225242	570-122524-4	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.6E-07	UJ	LPBMP0002_20230103
5701225242	570-122524-5	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	UJ	LPBMP0003_20230103
5701225242	570-122524-5	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.7E-07	UJ	LPBMP0003_20230103
5701225242	570-122524-6	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.1E-07	UJ	LPBMP0004_20230103
5701225242	570-122524-6	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-07	UJ	LPBMP0004_20230103
5701226872	570-122687-1	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.8E-06	UJ	EPBBC_20230105
5701229952	570-122995-1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	6.3E-06	UJ	A1BMP0002_20230104
5701229952	570-122995-1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	9.3E-07	UJ	A1BMP0002_20230104
5701229952	570-122995-2	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6.4E-07	UJ	A1BMP0003_20230104
5701229952	570-122995-3	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.1E-06	UJ	B1BMP0009_20230104
5701229952	570-122995-5	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	5.2E-07	UJ	B1BMP0011_20230104
5701229952	570-122995-6	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.3E-07	UJ	ILBMP0002_20230104
5701229993	570-122999-2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.3E-07	UJ	A1BPSW0001_20230104
5701236712	570-123671-1	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.2E-07	UJ	EPBLLC_011023
5701242522	570-124252-3	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.6E-07	UJ	EPBBC_011523
5701242522	570-124252-3	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.3E-07	UJ	EPBBC_011523
5701242592	570-124259-1	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4.5E-07	UJ	LXBMP0010_20230114
5701242592	570-124259-2	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.3E-07	UJ	LXBMP0012_20230114
5701242602	570-124260-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.9E-07	UJ	LXBMP0011_20230114
5701242633	570-124263-1	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.6E-06	UJ	EPSW001IE01_20230114
5701242633	570-124263-2	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2.2E-06	UJ	A1BPSW0001_20230114
5701290454	570-129045-1	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.3E-06	UJ	EPBLLC_20230226
5701292853	570-129285-1	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.9E-06	UJ	EPSW001IE01_20230224
5701292853	570-129285-1	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.0E-06	UJ	EPSW001IE01_20230224

TABLE 5
DIOXIN-FURAN EMPC
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG #	Lab ID	Analyte	Concentration (µg/L)	Qualifier	Affected Samples
5701292853	570-129285-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.1E-06	UJ	EPSW001IE01_20230224
5701292853	570-129285-1	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.0E-06	UJ	EPSW001IE01_20230224
5701312624	570-131262-1	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.3E-06	UJ	EPBLLC_20230315
5701312644	570-131264-1	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.2E-06	UJ	EPBBC_20230315
5701312644	570-131264-1	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.0E-06	UJ	EPBBC_20230315
5701312644	570-131264-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.2E-07	UJ	EPBBC_20230315
5701312644	570-131264-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	9.8E-07	UJ	EPBBC_20230315
5701312644	570-131264-1	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	7.3E-07	UJ	EPBBC_20230315
5701312644	570-131264-1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	9.9E-07	UJ	EPBBC_20230315
5701320153	570-132015-1	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.5E-06	UJ	EPSW001IE01_20230314
5701320153	570-132015-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.0E-06	UJ	EPSW001IE01_20230314
5701320153	570-132015-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	8.5E-07	UJ	EPSW001IE01_20230314
5701321404	570-132140-1	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.6E-06	UJ	BGBMP0003_20230322
5701323163	570-132316-1	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-06	UJ	FGD-20230322
5701323163	570-132316-1	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-06	UJ	FGD-20230322
5701323163	570-132316-1	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	9.2E-07	UJ	FGD-20230322
5701323163	570-132316-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.4E-06	UJ	FGD-20230322
5701323163	570-132316-2	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.6E-06	UJ	CC-20230322
5701323163	570-132316-2	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	7.6E-06	UJ	CC-20230322
5701323163	570-132316-2	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	8.8E-07	UJ	CC-20230322
5701323334	570-132333-1	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.5E-06	UJ	EPBMC_20230323
5701323334	570-132333-1	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6E-07	UJ	EPBMC_20230323
5701323364	570-132336-1	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.5E-07	UJ	EPBLLC_20230323
5701323364	570-132336-1	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.9E-07	UJ	EPBLLC_20230323
5701323364	570-132336-1	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	UJ	EPBLLC_20230323
5701323374	570-132337-1	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	9.7E-06	UJ	EPBBC_20230322
5701323374	570-132337-1	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	7.3E-07	UJ	EPBBC_20230322
5701323374	570-132337-1	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.3E-06	UJ	EPBBC_20230322
5701323374	570-132337-1	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.0E-07	UJ	EPBBC_20230322
5701323374	570-132337-1	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	7.2E-07	UJ	EPBBC_20230322
5701323374	570-132337-1	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	9.5E-07	UJ	EPBBC_20230322
5701323374	570-132337-1	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.2E-07	UJ	EPBBC_20230322

TABLE 6
COMPOUND IDENTIFICATION
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG #	Lab ID	Analysis Date/Time	Analyte	Qualification
5701204612	570-120461-1	1/21/2023 5:34	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	The laboratory reanalyzed the sample due to Calibration Curve Exceedance. The original results are marked nonreportable and the reanalysis results are accepted.
5701204663	570-120466-5	1/21/2023 9:35		
5701204713	570-120471-1	1/21/2023 10:23		
5701225242	570-122524-1	1/29/2023 4:54		
5701225242	570-122524-2	2/1/2023 4:49		
5701226872	570-122687-1	1/24/2023 7:41		
5701229952	570-122995-1	1/27/2023 18:20		
5701229952	570-122995-2	1/27/2023 19:06		
5701229952	570-122995-3	1/27/2023 19:53		
5701229952	570-122995-4	1/27/2023 20:39		
5701229952	570-122995-5	1/27/2023 21:26		
5701229952	570-122995-6	1/27/2023 22:12		
5701229952	570-122995-7	1/28/2023 6:11		
5701229993	570-122999-1	2/7/2023 17:45		
5701230092	570-123009-1	1/28/2023 6:57		
5701239002	570-123900-1	1/28/2023 20:21		
5701239002	570-123900-2	1/28/2023 21:07		
5701239012	570-123901-1	1/28/2023 21:54		
5701239012	570-123901-2	1/28/2023 22:40		
5701242522	570-124252-1	2/6/2023 21:21		
5701242522	570-124252-2	2/5/2023 17:53		
5701242522	570-124252-3	2/5/2023 18:40		
5701242592	570-124259-1	2/5/2023 19:26		
5701242592	570-124259-2	2/5/2023 20:13		
5701242602	570-124260-1	2/5/2023 20:59		
5701242622	570-124262-1	2/5/2023 21:46		
5701242633	570-124263-1	2/5/2023 22:32		
5701242633	570-124263-2	2/5/2023 23:19		
5701257462	570-125746-1	2/8/2023 17:27		
5701290454	570-129045-1	3/20/2023 19:14		
5701292853	570-129285-1	3/21/2023 13:24		
5701320153	570-132015-1	4/11/2023 17:47		

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.9E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.6E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	8.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	6.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	3.5E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	7.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	7.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	8.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	9.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.9E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	6.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.3E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	7.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.2E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.3E-05	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.3E-04	MB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.3E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	9.3E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.6E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	3.5E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.9E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.1E-04	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	9.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.8E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.8E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.0E-04	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	6.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-05	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	8.7E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701162652	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.5E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701162652	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.3E-04	MB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	5.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204612	EPSW001IE01	EPSW001IE01_20221211	12/11/2022	570-120461-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.1E-06	J,DXMBq	R	D	µg/L	Report ND at sample concentration
5701204663	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	9.3E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	8.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	9.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	8.8E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	7.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.9E-04	MB	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.0E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	9.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	9.9E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204663	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	8.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211	12/11/2022	570-120466-4	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211	12/11/2022	570-120466-4	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211	12/11/2022	570-120466-4	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.8E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211	12/11/2022	570-120466-4	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.4E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211	12/11/2022	570-120466-4	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211	12/11/2022	570-120466-4	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211	12/11/2022	570-120466-4	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.9E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211	12/11/2022	570-120466-4	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211	12/11/2022	570-120466-4	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211	12/11/2022	570-120466-4	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	8.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	5.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.9E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.4E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701204663	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5.9E-06	J,DXMB	R	D	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.2E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.8E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	8.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	9.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.6E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	7.4E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.5E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	6.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.5E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	6.4E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701204713	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.0E-06	J,DXMB	R	D	µg/L	
5701225242	ILBMP0004	ILBMP0004_20230103	1/3/2023	570-122524-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0004	ILBMP0004_20230103	1/3/2023	570-122524-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0004	ILBMP0004_20230103	1/3/2023	570-122524-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0004	ILBMP0004_20230103	1/3/2023	570-122524-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.1E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	ILBMP0004	ILBMP0004_20230103	1/3/2023	570-122524-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.2E-05	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	ILBMP0004	ILBMP0004_20230103	1/3/2023	570-122524-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.3E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	ILBMP0004	ILBMP0004_20230103	1/3/2023	570-122524-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.8E-06	J,DX	R	D	µg/L	
5701225242	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.8E-04	MB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.5E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.0E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.1E-06	J,DX	R	D	µg/L	
5701225242	ILBMP0008	ILBMP0008_20230103	1/3/2023	570-122524-3	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.8E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0008	ILBMP0008_20230103	1/3/2023	570-122524-3	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.1E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	ILBMP0008	ILBMP0008_20230103	1/3/2023	570-122524-3	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0008	ILBMP0008_20230103	1/3/2023	570-122524-3	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.7E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	ILBMP0008	ILBMP0008_20230103	1/3/2023	570-122524-3	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701225242	ILBMP0008	ILBMP0008_20230103	1/3/2023	570-122524-3	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.1E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3.4E-04	MB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.8E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	9.5E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	8.8E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.2E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.6E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	LPBMP0003	LPBMP0003_20230103	1/3/2023	570-122524-5	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0003	LPBMP0003_20230103	1/3/2023	570-122524-5	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.8E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0003	LPBMP0003_20230103	1/3/2023	570-122524-5	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0003	LPBMP0003_20230103	1/3/2023	570-122524-5	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	9.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0003	LPBMP0003_20230103	1/3/2023	570-122524-5	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0003	LPBMP0003_20230103	1/3/2023	570-122524-5	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0003	LPBMP0003_20230103	1/3/2023	570-122524-5	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	LPBMP0003	LPBMP0003_20230103	1/3/2023	570-122524-5	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.7E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	LPBMP0004	LPBMP0004_20230103	1/3/2023	570-122524-6	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0004	LPBMP0004_20230103	1/3/2023	570-122524-6	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.5E-04	MB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0004	LPBMP0004_20230103	1/3/2023	570-122524-6	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	4.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0004	LPBMP0004_20230103	1/3/2023	570-122524-6	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0004	LPBMP0004_20230103	1/3/2023	570-122524-6	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	6.8E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0004	LPBMP0004_20230103	1/3/2023	570-122524-6	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.5E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701225242	LPBMP0004	LPBMP0004_20230103	1/3/2023	570-122524-6	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.1E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701225242	LPBMP0004	LPBMP0004_20230103	1/3/2023	570-122524-6	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701225242	LPBMP0004	LPBMP0004_20230103	1/3/2023	570-122524-6	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701226872	EPBBC	EPBBC_20230105	1/5/2023	570-122687-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	6.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701226872	EPBBC	EPBBC_20230105	1/5/2023	570-122687-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	3.0E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701226872	EPBBC	EPBBC_20230105	1/5/2023	570-122687-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701226872	EPBBC	EPBBC_20230105	1/5/2023	570-122687-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701226872	EPBBC	EPBBC_20230105	1/5/2023	570-122687-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701226872	EPBBC	EPBBC_20230105	1/5/2023	570-122687-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.6E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701226872	EPBBC	EPBBC_20230105	1/5/2023	570-122687-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701226872	EPBBC	EPBBC_20230105	1/5/2023	570-122687-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.8E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701226872	EPBBC	EPBBC_20230105	1/5/2023	570-122687-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.5E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701226872	EPBBC	EPBBC_20230105	1/5/2023	570-122687-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701226872	EPBBC	EPBBC_20230105	1/5/2023	570-122687-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.5E-06	J,DXMB	R	D	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	9.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	9.7E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	4.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	6.3E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.5E-06	J,DX	R	D	µg/L	
5701229952	A1BMP0002	A1BMP0002_20230104	1/4/2023	570-122995-1	E1613B	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	9.3E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	4.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.8E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	6.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	5.2E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	6.2E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.8E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.0E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6.4E-07	J,DXq	R	D	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	6.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.3E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.4E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	9.8E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.1E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.9E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701229952	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5.6E-07	J,DX	R	D	µg/L	
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.8E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	6.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.6E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	6.5E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	8.6E-07	J,DX	R	D	µg/L	
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.8E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	9.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	9.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.3E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	5.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.4E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5.4E-07	J,DX	R	D	µg/L	
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	4.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	6.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	7.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.4E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	7.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.3E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.8E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701229952	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6.4E-07	J,DX	R	D	µg/L	
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.9E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229952	EPNDSW04	EPNDSW04_20230104	1/4/2023	570-122995-7	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6.3E-07	J,DXMB	R	D	µg/L	Report ND at sample concentration
5701229993	EPSW001IE01	EPSW001IE01_20230104	1/4/2023	570-122999-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	EPSW001IE01	EPSW001IE01_20230104	1/4/2023	570-122999-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	9.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	EPSW001IE01	EPSW001IE01_20230104	1/4/2023	570-122999-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	EPSW001IE01	EPSW001IE01_20230104	1/4/2023	570-122999-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	EPSW001IE01	EPSW001IE01_20230104	1/4/2023	570-122999-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	EPSW001IE01	EPSW001IE01_20230104	1/4/2023	570-122999-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	EPSW001IE01	EPSW001IE01_20230104	1/4/2023	570-122999-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229993	EPSW001IE01	EPSW001IE01_20230104	1/4/2023	570-122999-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	EPSW001IE01	EPSW001IE01_20230104	1/4/2023	570-122999-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	8.4E-07	J,DX	R	D	µg/L	
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	8.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	8.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.5E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.0E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	7.2E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	6.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701229993	A1BPSW0001	A1BPSW0001_20230104	1/4/2023	570-122999-2	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.3E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.5E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	8.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	6.1E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.8E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.4E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.3E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.4E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.0E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.8E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.9E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701230092	BGBMP0003	BGBMP0003_20230104	1/4/2023	570-123009-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.5E-07	J,DXMBq	R	D	µg/L	Report ND at sample concentration
5701236712	EPBLLC	EPBLLC_011023	1/10/2023	570-123671-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.5E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236712	EPBLLC	EPBLLC_011023	1/10/2023	570-123671-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236712	EPBLLC	EPBLLC_011023	1/10/2023	570-123671-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	6.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236712	EPBLLC	EPBLLC_011023	1/10/2023	570-123671-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULQ	UJ	L	µg/L	
5701236712	EPBLLC	EPBLLC_011023	1/10/2023	570-123671-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701236712	EPBMC	EPBMC_010923	1/9/2023	570-123671-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701236712	EPBMC	EPBMC_010923	1/9/2023	570-123671-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.7E-04	MB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701236712	EPBMC	EPBMC_010923	1/9/2023	570-123671-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	8.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236712	EPBMC	EPBMC_010923	1/9/2023	570-123671-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULQ	UJ	L	µg/L	
5701236712	EPBBC	EPBBC_010923	1/9/2023	570-123671-3	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	6.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236712	EPBBC	EPBBC_010923	1/9/2023	570-123671-3	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236712	EPBBC	EPBBC_010923	1/9/2023	570-123671-3	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701236712	EPBBC	EPBBC_010923	1/9/2023	570-123671-3	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULQ	UJ	L	µg/L	
5701236712	EPBMC	EPBMC_011023	1/10/2023	570-123671-4	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236712	EPBMC	EPBMC_011023	1/10/2023	570-123671-4	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701236712	EPBMC	EPBMC_011023	1/10/2023	570-123671-4	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.9E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701236712	EPBMC	EPBMC_011023	1/10/2023	570-123671-4	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	ND	ULQ	UJ	L	µg/L	
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	9.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.8E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.4E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	5.0E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0010	LXBMP0010_20230110	1/10/2023	570-123900-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3.1E-07	J,DXqMB	R	D	µg/L	Report ND at sample concentration
5701239002	LXBMP0012	LXBMP0012_20230110	1/10/2023	570-123900-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0012	LXBMP0012_20230110	1/10/2023	570-123900-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0012	LXBMP0012_20230110	1/10/2023	570-123900-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0012	LXBMP0012_20230110	1/10/2023	570-123900-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.6E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0012	LXBMP0012_20230110	1/10/2023	570-123900-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0012	LXBMP0012_20230110	1/10/2023	570-123900-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0012	LXBMP0012_20230110	1/10/2023	570-123900-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.9E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0012	LXBMP0012_20230110	1/10/2023	570-123900-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.5E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0012	LXBMP0012_20230110	1/10/2023	570-123900-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.0E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0012	LXBMP0012_20230110	1/10/2023	570-123900-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.4E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239002	LXBMP0012	LXBMP0012_20230110	1/10/2023	570-123900-2	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3.3E-07	J,DXMB	R	D	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	9.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	3.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.8E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.0E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	2.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239012	BGBMP0003	BGBMP0003_20230110	1/10/2023	570-123901-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.0E-06	J,DXMB	R	D	µg/L	
5701239012	LXBMP0011	LXBMP0011_20230110	1/10/2023	570-123901-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239012	LXBMP0011	LXBMP0011_20230110	1/10/2023	570-123901-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.1E-05	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239012	LXBMP0011	LXBMP0011_20230110	1/10/2023	570-123901-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	9.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239012	LXBMP0011	LXBMP0011_20230110	1/10/2023	570-123901-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701239012	LXBMP0011	LXBMP0011_20230110	1/10/2023	570-123901-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	3.6E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239012	LXBMP0011	LXBMP0011_20230110	1/10/2023	570-123901-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239012	LXBMP0011	LXBMP0011_20230110	1/10/2023	570-123901-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.6E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239012	LXBMP0011	LXBMP0011_20230110	1/10/2023	570-123901-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701239012	LXBMP0011	LXBMP0011_20230110	1/10/2023	570-123901-2	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239012	LXBMP0011	LXBMP0011_20230110	1/10/2023	570-123901-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239012	LXBMP0011	LXBMP0011_20230110	1/10/2023	570-123901-2	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.1E-07	J,DXMB	R	D	µg/L	
5701239023	EPSW001IE01	EPSW001IE01_20230110	1/10/2023	570-123902-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	7.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239023	EPSW001IE01	EPSW001IE01_20230110	1/10/2023	570-123902-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701239023	EPSW001IE01	EPSW001IE01_20230110	1/10/2023	570-123902-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239023	EPSW001IE01	EPSW001IE01_20230110	1/10/2023	570-123902-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239023	EPSW001IE01	EPSW001IE01_20230110	1/10/2023	570-123902-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239023	EPSW001IE01	EPSW001IE01_20230110	1/10/2023	570-123902-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239023	EPSW001IE01	EPSW001IE01_20230110	1/10/2023	570-123902-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.5E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701239023	EPSW001IE01	EPSW001IE01_20230110	1/10/2023	570-123902-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701239023	A1BPSW0001	A1BPSW0001_20230110	1/10/2023	570-123902-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239023	A1BPSW0001	A1BPSW0001_20230110	1/10/2023	570-123902-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.0E-04	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239023	A1BPSW0001	A1BPSW0001_20230110	1/10/2023	570-123902-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239023	A1BPSW0001	A1BPSW0001_20230110	1/10/2023	570-123902-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	9.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239023	A1BPSW0001	A1BPSW0001_20230110	1/10/2023	570-123902-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	6.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701239023	A1BPSW0001	A1BPSW0001_20230110	1/10/2023	570-123902-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	8.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.3E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	7.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	6.8E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	4.6E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	4.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	5.1E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4.0E-07	J,DXMB	R	D	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	4.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	8.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.9E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	8.3E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.6E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	9.2E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	J,DX	J	DNQ	µg/L	
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	8.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	9.6E-07	J,DX	J	DNQ	µg/L	
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.5E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	8.5E-07	J,DX	J	DNQ	µg/L	
5701242522	EPBMC	EPBMC_011523	1/15/2023	570-124252-2	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	5.2E-07	J,DXMB	R	D	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	8.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	8.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.1E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.2E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.0E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.6E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.3E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701242522	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6.2E-07	J,DXMB	R	D	µg/L	Report ND at sample concentration
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	6.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.9E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.1E-06	J,DX	J	DNQ	µg/L	
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	7.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	7.6E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.2E-06	J,DX	J	DNQ	µg/L	
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	8.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	7.2E-07	J,DX	J	DNQ	µg/L	
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6.0E-07	J,DX	J	DNQ	µg/L	
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4.7E-07	J,DXMB	R	D	µg/L	
5701242592	LXBMP0010	LXBMP0010_20230114	1/14/2023	570-124259-1	E1613B	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	4.5E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	8.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	5.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	2.6E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	6.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.3E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	3.9E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	6.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.2E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242592	LXBMP0012	LXBMP0012_20230114	1/14/2023	570-124259-2	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.9E-07	J,DXMB	R	D	µg/L	
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	5.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.4E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	3.3E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	8.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.4E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.4E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	2.9E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701242602	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	3.4E-07	J,DXMB	R	D	µg/L	Report ND at sample concentration
5701242622	BGBMP0003	BGBMP0003_20230114	1/15/2023	570-124262-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242622	BGBMP0003	BGBMP0003_20230114	1/15/2023	570-124262-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	8.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242622	BGBMP0003	BGBMP0003_20230114	1/15/2023	570-124262-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	6.7E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242622	BGBMP0003	BGBMP0003_20230114	1/15/2023	570-124262-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242622	BGBMP0003	BGBMP0003_20230114	1/15/2023	570-124262-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.2E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242622	BGBMP0003	BGBMP0003_20230114	1/15/2023	570-124262-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242622	BGBMP0003	BGBMP0003_20230114	1/15/2023	570-124262-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.4E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242622	BGBMP0003	BGBMP0003_20230114	1/15/2023	570-124262-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	3.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242622	BGBMP0003	BGBMP0003_20230114	1/15/2023	570-124262-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242622	BGBMP0003	BGBMP0003_20230114	1/15/2023	570-124262-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242622	BGBMP0003	BGBMP0003_20230114	1/15/2023	570-124262-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	4.4E-07	J,DXMB	R	D	µg/L	Report ND at sample concentration
5701242633	EPSW001IE01	EPSW001IE01_20230114	1/14/2023	570-124263-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	7.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	EPSW001IE01	EPSW001IE01_20230114	1/14/2023	570-124263-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	EPSW001IE01	EPSW001IE01_20230114	1/14/2023	570-124263-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	EPSW001IE01	EPSW001IE01_20230114	1/14/2023	570-124263-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	EPSW001IE01	EPSW001IE01_20230114	1/14/2023	570-124263-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	6.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	EPSW001IE01	EPSW001IE01_20230114	1/14/2023	570-124263-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	8.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	EPSW001IE01	EPSW001IE01_20230114	1/14/2023	570-124263-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	9.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	EPSW001IE01	EPSW001IE01_20230114	1/14/2023	570-124263-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	1.6E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701242633	EPSW001IE01	EPSW001IE01_20230114	1/14/2023	570-124263-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	6.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	EPSW001IE01	EPSW001IE01_20230114	1/14/2023	570-124263-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	6.6E-07	J,DXMB	R	D	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.0E-05	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.8E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	6.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.3E-06	J,DXMB	R	D	µg/L	Report ND at sample concentration
5701242633	A1BPSW0001	A1BPSW0001_20230114	1/14/2023	570-124263-2	E1613B	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	2.2E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.3E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	5.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.2E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.5E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	5.8E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.2E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	6.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	3.9E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	4.0E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBLLC	EPBLLC_20230130	1/30/2023	570-125746-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.5E-07	J,DXMBq	R	D	µg/L	
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.6E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	8.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.5E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	6.2E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.3E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	6.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	5.8E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	3.0E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701257462	EPBBC	EPBBC_20230130	1/30/2023	570-125746-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.7E-07	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	8.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.2E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.4E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290054	BGBMP0003	BGBMP0003_20230225	2/25/2023	570-129005-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.0E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290444	EPBMC	EPBMC_20230226	2/26/2023	570-129044-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.4E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290444	EPBMC	EPBMC_20230226	2/26/2023	570-129044-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	7.7E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290444	EPBMC	EPBMC_20230226	2/26/2023	570-129044-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290444	EPBMC	EPBMC_20230226	2/26/2023	570-129044-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290444	EPBMC	EPBMC_20230226	2/26/2023	570-129044-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290444	EPBMC	EPBMC_20230226	2/26/2023	570-129044-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290454	EPBLLC	EPBLLC_20230226	2/26/2023	570-129045-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.1E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290454	EPBLLC	EPBLLC_20230226	2/26/2023	570-129045-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.1E-05	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290454	EPBLLC	EPBLLC_20230226	2/26/2023	570-129045-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.4E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290454	EPBLLC	EPBLLC_20230226	2/26/2023	570-129045-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290454	EPBLLC	EPBLLC_20230226	2/26/2023	570-129045-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.9E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290454	EPBLLC	EPBLLC_20230226	2/26/2023	570-129045-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	6.8E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290454	EPBLLC	EPBLLC_20230226	2/26/2023	570-129045-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.3E-06	J,DXq	R	D	µg/L	Report ND at sample concentration
5701290464	EPBBC	EPBBC_20230226	2/26/2023	570-129046-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290464	EPBBC	EPBBC_20230226	2/26/2023	570-129046-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9.9E-05	MB	U	B	µg/L	Report ND at sample concentration
5701290464	EPBBC	EPBBC_20230226	2/26/2023	570-129046-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290464	EPBBC	EPBBC_20230226	2/26/2023	570-129046-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290464	EPBBC	EPBBC_20230226	2/26/2023	570-129046-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701290464	EPBBC	EPBBC_20230226	2/26/2023	570-129046-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	9.7E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701290464	EPBBC	EPBBC_20230226	2/26/2023	570-129046-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	4.4E-07	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.6E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.2E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.5E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.9E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.0E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	3.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.1E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	2.3E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	2.8E-06	J,DX	J	DNQ	µg/L	
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.6E-06	J,DX	J	DNQ	µg/L	
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.4E-06	J,DX	J	DNQ	µg/L	
5701292853	EPSW001IE01	EPSW001IE01_20230224	2/24/2023	570-129285-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	2.0E-06	J,DXq	R	D	µg/L	Report ND at sample concentration
5701292853	A1BPSW0001	A1BPSW0001_20230224	2/24/2023	570-129285-2	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.6E-05	J,DX	J	DNQ	µg/L	
5701292853	A1BPSW0001	A1BPSW0001_20230224	2/24/2023	570-129285-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.2E-05	J,DX	J	DNQ	µg/L	
5701292853	A1BPSW0001	A1BPSW0001_20230224	2/24/2023	570-129285-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	7.5E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701292853	A1BPSW0001	A1BPSW0001_20230224	2/24/2023	570-129285-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.7E-05	J,DX	J	DNQ	µg/L	
5701292853	A1BPSW0001	A1BPSW0001_20230224	2/24/2023	570-129285-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701292853	A1BPSW0001	A1BPSW0001_20230224	2/24/2023	570-129285-2	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.5E-05	J,DX	J	DNQ	µg/L	
5701292853	A1BPSW0001	A1BPSW0001_20230224	2/24/2023	570-129285-2	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	2.4E-06	J,DX	J	DNQ	µg/L	
5701292853	A1BPSW0001	A1BPSW0001_20230224	2/24/2023	570-129285-2	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	2.6E-06	J,DX	J	DNQ	µg/L	
5701292853	A1BPSW0001	A1BPSW0001_20230224	2/24/2023	570-129285-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.3E-05	J,DX	J	DNQ	µg/L	
5701292853	A1BPSW0001	A1BPSW0001_20230224	2/24/2023	570-129285-2	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	1.2E-06	J,DX	J	DNQ	µg/L	
5701310734	BGBMP0003	BGMP0003_20230314	3/14/2023	570-131073-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.6E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701310734	BGBMP0003	BGMP0003_20230314	3/14/2023	570-131073-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.5E-05	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701310734	BGBMP0003	BGMP0003_20230314	3/14/2023	570-131073-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.6E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701312624	EPBLLC	EPBLLC_20230315	3/15/2023	570-131262-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.3E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701312624	EPBLLC	EPBLLC_20230315	3/15/2023	570-131262-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	2.0E-05	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701312624	EPBLLC	EPBLLC_20230315	3/15/2023	570-131262-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701312624	EPBLLC	EPBLLC_20230315	3/15/2023	570-131262-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.6E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701312624	EPBLLC	EPBLLC_20230315	3/15/2023	570-131262-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701312644	EPBBC	EPBBC_20230315	3/15/2023	570-131264-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.9E-05	J,DX	J	DNQ	µg/L	
5701312644	EPBBC	EPBBC_20230315	3/15/2023	570-131264-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	9.6E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701312644	EPBBC	EPBBC_20230315	3/15/2023	570-131264-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	4.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701312644	EPBBC	EPBBC_20230315	3/15/2023	570-131264-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	1.2E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701312644	EPBBC	EPBBC_20230315	3/15/2023	570-131264-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.0E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701312644	EPBBC	EPBBC_20230315	3/15/2023	570-131264-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.9E-06	J,DXqMB	U	B	µg/L	Report ND at sample concentration
5701312644	EPBBC	EPBBC_20230315	3/15/2023	570-131264-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	7.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701312644	EPBBC	EPBBC_20230315	3/15/2023	570-131264-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	9.8E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701312644	EPBBC	EPBBC_20230315	3/15/2023	570-131264-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	7.3E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701312644	EPBBC	EPBBC_20230315	3/15/2023	570-131264-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	9.9E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701312644	EPBBC	EPBBC_20230315	3/15/2023	570-131264-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.1E-07	J,DX	J	DNQ	µg/L	
5701314494	EPBMC	EPBMC_20230316	3/16/2023	570-131449-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.8E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701314494	EPBMC	EPBMC_20230316	3/16/2023	570-131449-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	1.9E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701320133	EPSW001IE01	EPSW001IE01_20230321	3/21/2023	570-132013-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	8.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701320133	EPSW001IE01	EPSW001IE01_20230321	3/21/2023	570-132013-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.4E-04	MB	U	B	µg/L	Report ND at sample concentration
5701320133	EPSW001IE01	EPSW001IE01_20230321	3/21/2023	570-132013-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701320133	EPSW001IE01	EPSW001IE01_20230321	3/21/2023	570-132013-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	3.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701320133	EPSW001IE01	EPSW001IE01_20230321	3/21/2023	570-132013-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	6.9E-07	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701320133	EPSW001IE01	EPSW001IE01_20230321	3/21/2023	570-132013-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701320133	EPSW001IE01	EPSW001IE01_20230321	3/21/2023	570-132013-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701320133	EPSW001IE01	EPSW001IE01_20230321	3/21/2023	570-132013-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701320133	EPSW001IE01	EPSW001IE01_20230321	3/21/2023	570-132013-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	4.4E-07	J,DX	J	DNQ	µg/L	
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	4.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	4.5E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.0E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.0E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	6.8E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.0E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	7.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration

TABLE 7
SUMMARY OF QUALIFIERS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	5.9E-06	J,DX	J	DNQ	µg/L	
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	8.5E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.1E-06	J,DXMB	R	D	µg/L	
5701320153	EPSW001IE01	EPSW001IE01_20230314	3/14/2023	570-132015-1	E1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	1.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701321404	BGBMP0003	BGBMP0003_20230322	3/22/2023	570-132140-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	1.1E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701321404	BGBMP0003	BGBMP0003_20230322	3/22/2023	570-132140-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.9E-04	MB	U	B	µg/L	Report ND at sample concentration
5701321404	BGBMP0003	BGBMP0003_20230322	3/22/2023	570-132140-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	4.8E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701321404	BGBMP0003	BGBMP0003_20230322	3/22/2023	570-132140-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.3E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701321404	BGBMP0003	BGBMP0003_20230322	3/22/2023	570-132140-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.9E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701321404	BGBMP0003	BGBMP0003_20230322	3/22/2023	570-132140-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	1.6E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323163	FGD	FGD_20230322	3/22/2023	570-132316-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	3.7E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701323163	FGD	FGD_20230322	3/22/2023	570-132316-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.8E-05	J,DX	J	DNQ	µg/L	
5701323163	FGD	FGD_20230322	3/22/2023	570-132316-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	1.1E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323163	FGD	FGD_20230322	3/22/2023	570-132316-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	2.4E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323163	FGD	FGD_20230322	3/22/2023	570-132316-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	9.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323163	FGD	FGD_20230322	3/22/2023	570-132316-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	4.4E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323163	FGD	FGD_20230322	3/22/2023	570-132316-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	4.8E-06	J,DX	J	DNQ	µg/L	
5701323163	CC	CC_20230322	3/22/2023	570-132316-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	2.6E-05	J,DX	J	DNQ	µg/L	
5701323163	CC	CC_20230322	3/22/2023	570-132316-2	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	5.4E-05	J,DX	J	DNQ	µg/L	
5701323163	CC	CC_20230322	3/22/2023	570-132316-2	E1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	2.1E-05	J,DX	J	DNQ	µg/L	
5701323163	CC	CC_20230322	3/22/2023	570-132316-2	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	1.6E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323163	CC	CC_20230322	3/22/2023	570-132316-2	E1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	7.6E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323163	CC	CC_20230322	3/22/2023	570-132316-2	E1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	1.8E-05	J,DX	J	DNQ	µg/L	
5701323163	CC	CC_20230322	3/22/2023	570-132316-2	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	8.8E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323334	EPBMC	EPBMC_20230323	3/23/2023	570-132333-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	6.2E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701323334	EPBMC	EPBMC_20230323	3/23/2023	570-132333-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	3.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701323334	EPBMC	EPBMC_20230323	3/23/2023	570-132333-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	1.5E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323334	EPBMC	EPBMC_20230323	3/23/2023	570-132333-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.8E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701323334	EPBMC	EPBMC_20230323	3/23/2023	570-132333-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.2E-06	J,DX	J	DNQ	µg/L	
5701323334	EPBMC	EPBMC_20230323	3/23/2023	570-132333-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	1.6E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323364	EPBLLC	EPBLLC_20230323	3/23/2023	570-132336-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.4E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701323364	EPBLLC	EPBLLC_20230323	3/23/2023	570-132336-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	1.4E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701323364	EPBLLC	EPBLLC_20230323	3/23/2023	570-132336-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	3.5E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323364	EPBLLC	EPBLLC_20230323	3/23/2023	570-132336-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	2.1E-06	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701323364	EPBLLC	EPBLLC_20230323	3/23/2023	570-132336-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	3.9E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323364	EPBLLC	EPBLLC_20230323	3/23/2023	570-132336-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.1E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323374	EPBBC	EPBBC_20230322	3/22/2023	570-132337-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	2.0E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701323374	EPBBC	EPBBC_20230322	3/22/2023	570-132337-1	E1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	9.3E-05	J,DXMB	U	B	µg/L	Report ND at sample concentration
5701323374	EPBBC	EPBBC_20230322	3/22/2023	570-132337-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)	9.7E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323374	EPBBC	EPBBC_20230322	3/22/2023	570-132337-1	E1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)	7.0E-06	J,DXMBq	U	B	µg/L	Report ND at sample concentration
5701323374	EPBBC	EPBBC_20230322	3/22/2023	570-132337-1	E1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)	7.3E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323374	EPBBC	EPBBC_20230322	3/22/2023	570-132337-1	E1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	1.3E-06	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323374	EPBBC	EPBBC_20230322	3/22/2023	570-132337-1	E1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	8.0E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323374	EPBBC	EPBBC_20230322	3/22/2023	570-132337-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	7.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323374	EPBBC	EPBBC_20230322	3/22/2023	570-132337-1	E1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	7.0E-07	J,DX	J	DNQ	µg/L	
5701323374	EPBBC	EPBBC_20230322	3/22/2023	570-132337-1	E1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	9.5E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration
5701323374	EPBBC	EPBBC_20230322	3/22/2023	570-132337-1	E1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	3.2E-07	J,DXq	UJ	*III	µg/L	Report ND at sample concentration

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Data Usability Summary Report

Project Name: The Boeing Company, Santa Susana Field Laboratory, ISRA and BMP

Project Description: First Quarter 2023 for ISRA-BMP Radiological Water Samples

Sample Date(s): 10 January 2023

Analytical Laboratory: Eurofins Calscience, Tustin, CA

Validation Performed by: Kristina Ilina

Validation Reviewed by: Vanessa Godard

Validation Date: 10 June 2023

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDG) listed. This DUSR is organized into the following sections:

1. **First Quarter 2023 ISRA-BMP Radiological Water Samples**
2. **Explanations**
3. **Glossary**
4. **Abbreviations**
5. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the U.S. Environmental Protection Agency (USEPA) using the following reference materials:

- Evaluation of Radiochemical Data Usability by J.G. Paar.
- NFG for Organic Data Review.
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see references section).

Radiological data reported in this sampling event were reported to the Minimum Detectable Concentration (MDC).

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOP). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQO) for the project and therefore usable; any exceptions are noted in the following pages.

1. First Quarter 2023 ISRA-BMP Radiological Water Samples

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers:

- 5701162653;
- 5701226875;
- 5701229994;
- 5701230095;
- 5701236715;
- 5701239015;
- 5701239024;
- 5701242525;
- 5701242605; and
- 5701242625.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol.

- Sample analyses were subcontracted to Eurofins St. Louis - Earth City, Missouri.

Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- SDG 570129015: One of two containers for the following sample was received broken for sample LXBMP0011_20230110.
- SDG 5701236715: The report (revision 1) was revised due to the sample IDs were updated to match the COC for sample #2 and #3.
- SDGs 5701239015 and 5701239024: All samples were mistakenly preserved upon receipt. Therefore, laboratory could not perform dissolved solids analysis.

Analyses were performed on the samples shown in Table 1. Analytical methods performed are displayed in Table 2.

1.2 CASE NARRATIVE

The laboratory report case narratives included the issues shown in Table 3.

1.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol with the following exceptions:

- The cooler containing the following samples, 570-123901-1 and 570-123902-2, was received warm. No temperature requirements were found in the method SOPs, therefore no qualification was necessary.

1.4 REPORTING LIMITS AND SAMPLE DILUTIONS

The MDCs for the samples within this SDG met or were below the minimum reporting limit (RL) requirements specified by the project specific sampling analysis plan. Results qualified with "G" for the samples where MDC is greater than the requested RL are acceptable.

1.5 LABORATORY CONTROL SAMPLES

Refer to section E 1.3. Compounds associated with the laboratory control samples/laboratory control sample duplicates (LCS/LCSD) analyses associated with client samples exhibited recoveries and relative error ratios (RER) within the specified limits with the following exceptions:

SDG #	Sample Type	Method	Batch ID	Analyte	%R	Qualifier	Affected Samples
5701239015	LCS/LCSD	E904.0	Prep Batch 597487	Radium-228	142%/135%	NA	None, samples are ND
5701239015 5701236715 5701242525 5701242605 5701242625	LCS	E904.0	Prep Batch 597622	Radium-228	126%	NA	None, samples are ND
5701226875 5701230095	LCS	E904.0	Prep Batch 596471	Radium-228	128%	NA	None, samples are ND
5701236715	LCS	E904.0	Prep Batch 597175	Radium-228	126%	NA	570-123671-1 No qualification necessary as the sample is held to laboratory in-house statistical limits of (62 to 148 percent) per method requirements.

1.6 MATRIX SPIKE SAMPLES

Refer to section E 1.4. The sample(s) below were used for matrix spike/matrix spike blank (MS/MSB)

Lab Sample Number	Matrix Spike/ Matrix Spike Duplicate Sample Client ID	Method(s)
570-123671-2	EPBMC_010923	E900
570-123671-3	EPBBC_010923	E900
570-123902-2	A1BPSW0001_20230110	E900

The MS recoveries were within the specified limits.

1.7 BLANK SAMPLE ANALYSIS

Refer to section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred with the exceptions shown in Table 4.

1.8 DUPLICATE SAMPLE ANALYSIS

Refer to section E 1.6. The following sample(s) were used for laboratory duplicate analysis and the normalized absolute difference for each sample pair was less than 1.96.

Lab Sample Number	Laboratory Duplicate Sample Client ID	Method(s)
570-116265-11	EPSW001IE01_20221108	E901.1
570-122687-1	EPBBC_20230105	E901.1
570-123009-1	BGBMP0003_20230104	E901.1
570-123671-1	EPBLLC_011023	E901.1
570-123671-2	EPBMC_010923	E900, HASL-300 U Mod
570-123671-3	EPBBC_010923	E900
570-123901-1	BGBMP0003_20230110	E901.1
570-123901-2	LXBMP0011_20230110	E901.1
570-123902-2	A1BPSW0001_20230110	E900, HASL-300 U Mod
570-124252-1	EPBLLC_011523	E901.1

1.9 PRECISION AND ACCURACY

Refer to section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

1.10 NEGATIVE RESULT CHECK

Refer to section E 1.24. Negative sample results were reviewed, and their absolute values found to be less than their 2s counting uncertainties.

1.11 CHEMICAL YIELD – TRACERS AND CARRIERS

Refer to section E 1.25. The reviewer verified that at least one carrier or tracer was reported per sample and that percent yields were within the laboratory control limits with the following exceptions:

Method	Sample ID	Lab ID	Carrier	%Yield	Qualification
E904.0	EPBLLC_011523	570-124252-1	Yttrium	28%	UJ
E904.0	LXBMP0011_20230114	570-124260-1	Yttrium	38.5%	UJ

Compounds targeted by Yttrium Radium-228

1.12 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable as no data was rejected. A summary of qualifiers applied to this data set is shown in Table 5.

2. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
  - For radiological isotope data, the normalized difference was calculated between the spike result and the expected value to determine if the results differed significantly when compared to their respective TPU.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For radiological isotope data, the normalized difference was calculated between the spike result and the expected value to determine if the results differed significantly when compared to their respective TPU.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
  - No statistical evaluation of radiological isotope method blanks needs to be performed if either of the following conditions are met:
    - Method blank is less than its MDC or less than its 2s counting uncertainty.
    - Method blank result is greater than its MDC with the sample result less than its MDC.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The percent recovery and relative error ratios (RER) were evaluated for each duplicate sample pair to monitor the reproducibility of the data.
- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.

- E 1.24 Negative Results
  - Radiological data can produce negative results, and if those results have absolute values greater than their 2s counting uncertainty it is an indication that the instrument background has shifted. The implication of an unstable background is a possible negative bias in the sample result.
- E 1.25 Chemical Yield
  - Tracers and carriers are used in radiochemical separations methods to evaluate chemical separation. Chemical yield is evaluated by recovering the chemical species spiked into samples. Yield is evaluated radiometrically with a tracer and gravimetrically with a carrier. Each sample is spiked with either a carrier or tracer, and sample results are adjusted for yields greater or less than 100 percent. A low yield indicates tracer losses and radionuclide of interest through sample separation. A high yield indicates instrumental problems or contamination.

3. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - % SURVIVAL percent survival
  - µg/L microgram per liter
  - mg/kg milligrams per kilogram
  - mg/L milligram per liter
  - mL/L milliliters per liter
  - mpn/100mL most probable number per 100 milliliters
  - NTU nephelometric turbidity unit
  - pCi/L picocuries per liter
  - µmhos/cm micromhos per centimeter
- Matrices:
  - WM Stormwater
  - WMQ Water Quality control matrix
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)
- Fractions:
  - D Dissolved (filtered)
  - N Normal (method cannot be filtered)
  - T Total (unfiltered)

4. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DQO	data quality objective
DUSR	Data Usability Summary Report
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/ Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
NH_3	Ammonia
PCB	Polychlorinated Biphenyl
PDS	Post Digestion Spike
PEM	Performance Evaluation Mixture
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RER	Relative Error Ratio
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factors
RT	Retention Time
SAP	sampling analysis plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Laboratory Standard Operating Procedures
SPE	Solid Phase Extraction
SVOC	Semi-Volatile Organic Compounds
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
amu	atomic mass unit
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compounds

5. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Laboratory Qualifiers:

BA	Relative percent difference out of control.
BU	Analyzed out of holding time.
BV	Sample received after holding time expired.
EY	Result exceeds normal dynamic range; reported as a minimum estimate.
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
J,DX	Results found between the EDL or MDL and laboratory RL.
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS).
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS).
LQ	LCS/LCSD recovery above method control limits.
MB	Analyte present in the method blank.
PI	Primary and confirm results varied by > than 40% RPD.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio; the measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
U	Result is less than the sample detection limit.

- Validation Notes:

--	Based on validation of the data, a qualifier was not required.
*1	Improper preservation of sample.
*III	Unusual problems found with the data that have been described in the validation report.
B	Laboratory method blank contamination.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
DNQ	Detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit).
E	Duplicates show poor agreement.
H	Holding times were exceeded.
L1	Laboratory control standard (LCS)/laboratory control standard duplicate (LCSD), relative percent difference (RPD) was outside the control limit.
Q	Matrix spike (MS) recovery outside of control limits.
RPD	Pesticides and PCB Confirmation Column RPD Exceeded.

- Validation Qualifiers:

=	No Qualifier.
J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
J-	The result is an estimated quantity, but the result may be biased low.
J+	The result is an estimated quantity, but the result may be biased high.
R	The sample results were rejected as unusable; the compound may or may not be present in the sample.
U	The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or “ND”.
UJ	The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

References

1. J.G. Paar, 1997. Evaluation of Radiochemical Data Usability. April 1997.
2. Haley & Aldrich, Inc, 2015. Quality Assurance Project Field Plan for Santa Susana Field Laboratory Stormwater Sampling Program. December.

Attachments:

Table 1 – Sample Management
Table 2 – Method Holding Times
Table 3 – Case Narrative
Table 4 – Method Blanks
Table 5 – System Performance Summary

TABLES

TABLE 1
SAMPLE MANAGEMENT
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Methods
EPSW001IE01_20221108	N	570-116265-11	11/8/2022	WM	A, B, F, G
EPBBC_20230105	N	570-122687-1	1/5/2023	WM	A, B, C, D, E, F, G
EPSW001IE01_20230104	N	570-122999-1	1/4/2023	WM	A, B, F, G
A1BPSW0001_20230104	N	570-122999-2	1/4/2023	WM	A, B, F, G
BGBMP0003_20230104	N	570-123009-1	1/4/2023	WM	A, B, C, D, E, F, G
EPBLLC_011023	N	570-123671-1	1/10/2023	WM	A, B, C, D, E, F, G
EPBMC_010923	N	570-123671-2	1/9/2023	WM	A, B, C, D, E, F, G
EPBBC_010923	N	570-123671-3	1/9/2023	WM	A, B, C, D, E, F, G
EPBMC_011023	N	570-123671-4	1/10/2023	WM	A, B, C, D, E, F, G
BGBMP0003_20230110	N	570-123901-1	1/10/2023	WM	A, B, C, D, E, F, G
LXBMP0011_20230110	N	570-123901-2	1/10/2023	WM	A, B, C, D, E, F, G
EPSW001IE01_20230110	N	570-123902-1	1/10/2023	WM	A, B, F, G
A1BPSW0001_20230110	N	570-123902-2	1/10/2023	WM	A, B, F, G
EPBLLC_011523	N	570-124252-1	1/15/2023	WM	A, B, C, D, E, F, G
EPBMC_011523	N	570-124252-2	1/15/2023	WM	A, B, C, D, E, F, G
EPBBC_011523	N	570-124252-3	1/15/2023	WM	A, B, C, D, E, F, G
LXBMP0011_20230114	N	570-124260-1	1/14/2023	WM	A, B, C, D, E, F, G
BGBMP0003_20230114	N	570-124262-1	1/15/2023	WM	A, B, C, D, E, F, G

TABLE 2
METHOD HOLDING TIMES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Method Holding Times			
A	E900	GROSS ALPHA AND GROSS BETA RADIOACTIVITY	180 days, unpreserved*
B	E901.1	GAMMA EMITTING RADIONUCLIDES	180 days, unpreserved*
C	E903.0	ALPHA-EMITTING RADIUM ISOTOPES	180 days, unpreserved*
D	E904.0	RADIUM-228	180 days, unpreserved*
E	E905.0	RADIOACTIVE STRONTIUM	180 days, unpreserved*
F	E906.0	TRITIUM	180 days, unpreserved
G	HASL-300 U Mod	ISOTOPIC URANIUM IN BIOLOGICAL AND ENVIRONMENTAL MATERIALS	180 days, unpreserved*

Notes:

** preserved to correct pH at the laboratory.*

TABLE 3
CASE NARRATIVE
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Method	Analyte	Batch	Affected Samples	Case Narrative
E900	Gross Alpha Beta	Prep Batch 160-598084	570-123902-1	The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass. Analytical results are reported with the detection limit achieved.
E900	Gross Alpha Beta	Prep Batch 160-596518	570-122999-1	
E900	Gross Alpha Beta	Prep Batch 598534	570-124252-1 570-124252-2 570-124252-3	
E900	Gross Alpha Beta	Prep Batch 160-597281	570-122687-1	The detection goal was not met for the following sample due to a reduction of the sample size attributed to high residual mass. Analytical results are reported with the detection limit achieved.
E900	Gross Alpha Beta	batch 598080	570-123671-1 570-123671-3 570-123671-4	
E900	Gross Alpha Beta	batch 598080	570-123671-3 DU	The detection goal was not met for the sample duplicate. However the purpose of the DUP is to demonstrate batch precision. The precision was within control limits demonstrating no adverse effect from the discrepancy.
E900	Gross Alpha Beta	Prep batch 160-598184	570-123671-2	The detection goal was not met for the following sample(s). The samples and batch QC were prepped at full volume. Matrix interferences are suspected because the method blank achieved the detection goal demonstrating acceptable sample preparation and instrument performance . Analytical results are reported with the detection limit achieved.
E903.0	Radium-226	Prep Batch 160-597154	570-123671-1 570-123671-2 570-123671-3	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E903.0	Radium-226	Prep Batch 160-596421	570-123009-1	
E903.0	Radium-226	Prep Batch 160-598000	570-124252-1 570-124252-2 570-124252-3 570-124260-1 570-124262-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E903.0	Radium-226	Prep Batch 160-597480	570-123901-1	

TABLE 3
CASE NARRATIVE
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Method	Analyte	Batch	Affected Samples	Case Narrative
E904.0	Radium-228	batch 597175	570-123671-1 570-123671-3 570-123671-4	The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences. Analytical results are reported with the detection limit achieved.
E904.0	Radium-228	Prep Batch 160-597487	570-123901-1	
E904.0	Radium-228	Prep Batch 160-597622	570-123901-2 570-124252-1 570-124252-2 570-124252-3 570-124260-1 570-124262-1	The detection goal was not met for the following sample(s). Sample was prepped at a reduced volume due to the presence of matrix interferences. Analytical results are reported with the detection limit achieved.
E904.0	Radium-228	Prep Batch 160-596471	570-122687-1 570-123009-1	The following sample(s) did not meet the requested limit (RL) due to the reduced sample volume attributed to the presence of matrix interference. During preparation the analyst visually noted matrix effects.
E904.0	Radium-228	Prep Batch 160-598012	570-124252-1 570-124252-2 570-124252-3 570-124260-1 570-124262-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E904.0	Radium-228	Prep Batch 160-597175	570-123671-1 570-123671-2 570-123671-3	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E904.0	Radium-228	Prep Batch 160-596471	570-122687-1 570-123009-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E904.0	Radium-228	Prep Batch 160-596421	570-122687-1	
E904.0	Radium-228	Prep Batch 160-597487	570-123901-1	
E905.0	Strontium-90	Prep Batch 160-597176	570-123671-1 570-123671-2 570-123671-3 570-123671-4	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.

TABLE 3
CASE NARRATIVE
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Method	Analyte	Batch	Affected Samples	Case Narrative
E905.0	Strontium-90	Prep Batch 160-597624	570-123901-1 570-123671-1 570-123671-2 570-123671-3 570-123671-4 570-124252-1 570-124252-2 570-124252-3 570-124260-1 570-124262-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-598093	570-123901-2 570-123671-1 570-123671-2 570-123671-3 570-123671-4	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-596746	570-122687-1 570-123009-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-597060	570-123009-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E905.0	Strontium-90	Prep Batch 160-598605	570-122687-1	
E905.0	Strontium-90	Prep Batch 160-598546	570-124252-1 570-124252-2 570-124252-3 570-124260-1 570-124262-1	The following sample was prepared at a reduced aliquot due to Matrix. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead of a sample duplicate (DUP) to demonstrate batch precision.
E905.0	Strontium-90			Insufficient sample volume was available to perform a sample duplicate for the following samples. A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision
E905.0	Strontium-90	Prep Batch 160-597060	570-123009-1	
E905.0	Strontium-90	Prep Batch 160-598605	570-122687-1	

TABLE 3
CASE NARRATIVE
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Method	Analyte	Batch	Affected Samples	Case Narrative
HASL-300 U Mod	Uranium	Prep Batch 160-597806	570-123901-1 570-123901-2 570-123902-1 570-123009-1 570-123671-1 570-123671-2 570-123671-3 570-123671-4	The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels
HASL-300 U Mod	Uranium	Prep Batch 160-591668	570-116265-11	The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels
HASL-300 U Mod	Uranium	Prep Batch 160-597259	570-122687-1 570-122999-1 570-123009-1	The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels
HASL-300 U Mod	Uranium	Prep Batch 160-597538	570-122687-1 570-122999-1 570-123671-1 570-123671-3 570-123671-4	The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels
HASL-300 U Mod	Uranium	Prep Batch 160-597078	570-124252-1 570-124252-2 570-124252-3 570-124260-1 570-124262-1	The following sample was prepared at a reduced aliquot due to discoloration and heavy sediment levels
HASL-300 U Mod	Uranium	batch 597538	570-123671-1 570-123671-4	The detection goal was not met for the following sample(s). Sample were prepped at a reduced volume due to the presence of matrix interferences. Analytical results are reported with the detection limit achieved.

TABLE 4
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	Batch ID	Analyte Detected in Blank	Concentration	Qualifier (pCi/L)	Affected Samples
MB	160-59774	Radium-228	0.8428	NA	None, samples are ND
MB	160-597806	Dissolved Uranium	0.142	J	570-123671-2
				U	570-123009-1 570-123671-3 570-123671-4 570-123902-2
	160-597806	Total Uranium	0.142	U	570-123902-1
MB	160-598078	Dissolved Uranium	0.1667	NA	570-124252-1, 570-124252-2, 570-124252-3 The normalized absolute difference is greater than 2.58. No qualification necessary.
	160-598078	Total Uranium	0.1667	J	570-124252-3
				U	570-124260-1
				NA	570-124252-1, 570-124252-2 The normalized absolute difference is greater than 2.58. No qualification necessary.

TABLE 5
SYSTEM PERFORMANCE SUMMARY
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701242525	EPBBC	EPBBC_011523	1/15/2023	570-124252-3	HASL-300 U Mod	Total Uranium	1.78		J	B	pCi/L	
5701242605	LXBMP0011	LXBMP0011_20230114	44940.4375	570-124260-1	HASL-300 U Mod	Total Uranium	0.408		U	B	pCi/L	Report ND at sample concentration
5701239024	EPSW001IE01	EPSW001IE01_20230110	1/10/2023	570-123902-1	HASL-300 U Mod	Total Uranium	1.93		U	B	pCi/L	Report ND at sample concentration
5701242525	EPBLLC	EPBLLC_011523	1/15/2023	570-124252-1	E904.0	Radium-228	3.25	U G	UJ	*III	pCi/L	
5701236715	EPBMC	EPBMC_010923	44935.54514	570-123671-2	HASL-300 U Mod	Uranium-238	1.17		J	B	pCi/L	
5701236715	EPBBC	EPBBC_010923	1/9/2023	570-123671-3	HASL-300 U Mod	Uranium-238	1.12		U	B	pCi/L	Report ND at sample concentration
5701242605	LXBMP0011	LXBMP0011_20230114	1/14/2023	570-124260-1	E904.0	Radium-228	-0.115	U G	UJ	*III	pCi/L	
5701236715	EPBMC	EPBMC_011023	44936.45833	570-123671-4	HASL-300 U Mod	Uranium-238	0.89		U	B	pCi/L	Report ND at sample concentration
5701230095	BGBMP0003	BGBMP0003_20230104	44930.29167	570-123009-1	HASL-300 U Mod	Uranium-238	0.251		U	B	pCi/L	Report ND at sample concentration
5701239024	A1BPSW0001	A1BPSW0001_20230110	44936.5	570-123902-2	HASL-300 U Mod	Uranium-238	0.356		U	B	pCi/L	Report ND at sample concentration

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Data Usability Summary Report

Project Name: The Boeing Company, Santa Susana Field Laboratory, ISRA and BMP

Project Description: First Quarter 2023 for ISRA-BMP Radiological Water Samples

Sample Date(s): November 2022 through January 2023

Analytical Laboratory: Eurofins Calscience Environmental Laboratories, Inc. – Tustin, CA

Validation Performed by: Kristina Ilina

Validation Reviewed by: Vanessa Godard

Validation Date: 10 June 2023

Haley & Aldrich, Inc. prepared this Data Usability Summary Report (DUSR) to summarize the review and validation of the analytical results for Sample Delivery Group(s) (SDG) listed. This DUSR is organized into the following sections:

1. **Sample Delivery Group**
2. **Explanations**
3. **Glossary**
4. **Abbreviations**
5. **Qualifiers**

References

This data validation and usability assessment was performed per the guidance and requirements established by the U.S. Environmental Protection Agency (USEPA) using the following reference materials:

- National Functional Guidelines (NFG) for Organic Data Review.
- NFG for Inorganic Data Review.
- The project-specific Quality Assurance Project Plan (QAPP), herein referred to as the specified limits (see references section).

Data reported in this sampling event were reported to the laboratory method detection limit (MDL). Results found between the MDL and reporting limit (RL) are flagged J as estimated.

Sample data were qualified in accordance with the laboratory's standard operating procedures (SOP). The results presented in each laboratory report were found to be compliant with the data quality objectives (DQO) for the project and therefore usable; any exceptions are noted in the following pages.

1. Sample Delivery Group

1.1 SAMPLE MANAGEMENT

This DUSR summarizes the review of SDG numbers:

- 5701162651;
- 5701204661;
- 5701204711;
- 5701225241;
- 5701225244;
- 5701226873;
- 5701229951;
- 5701229954; and
- 5701229992.

Samples were collected, preserved, and shipped following standard chain of custody (COC) protocol. Samples were also received appropriately, identified correctly, and analyzed according to the COC. Issues noted with sample management are listed below:

- The following sample LPBMP0004_20221108 (570-116265-9) had a cracked lid, which could not be replaced. Container lid was taped up to prevent leakage or volume loss. There was no leakage or volume lost.

Analyses were performed on the samples listed in Table 1. Method holding times are listed in Table 2.

1.2 CASE NARRATIVE

The laboratory report case narrative lists various quality control exceedances (e.g., continuing calibration blank) not evaluated by this review thus, no qualifiers were applied to the reported results. However, the laboratory did note the following:

- SDG 570-116265-1, 570-120466-1: The laboratory received 250 milliliter (mL) plastic with HNO3 instead of 250 mL unpreserved plastic container for dissolved metals analysis. Aliquot was taken from 1 liter (L) Amber glass container for dissolved metals.
- SDG 570-120466-1: The laboratory received 1 L unpreserved Amber instead of 250 mL unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis. Aliquot was taken from 1 L Amber glass container.
- SDG 570-120471-1:
  - The following sample was received with insufficient preservation at a pH of >2 SU: BGBMP0003_20221211 (570-120471-1). The sample was preserved to the appropriate pH in the laboratory.
  - The laboratory received 500 mL unpreserved plastic instead of 500 mL plastic with/NaOH container for CN analysis on the following sample: BGBMP0003_20221211 (570-120471-1). CN container was preserved at the lab.

- The laboratory received 1 L unpreserved Amber instead of 250 mL unpreserved clear glass 1631 Mercury container for dissolved Mercury analysis on the following sample: BGBMP0003_20221211 (570-120471-1). Aliquot was taken from 1 L Amber glass container.
- The following volatile sample was diluted due to foaming at the time of purging during the original sample analysis for 624.1: BGBMP0003_20221211 (570-120471-1). Elevated RLs are provided.
- Methods 625.1, 625.1SIM, insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 570-290331. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

1.3 HOLDING TIMES/PRESERVATION

The samples arrived at the laboratory at the proper temperature and were prepared and analyzed within the holding time and preservation criteria specified per method protocol.

- Method 200.8 requires filtration within 15 minutes of field sampling. Data was not qualified in this set of samples and were filtered outside of the 15-minute limit. Other exceptions are listed in Table 3.

1.4 REPORTING LIMITS AND SAMPLE DILUTIONS

The RLs for the samples within this SDG met or were below the minimum RL requirements specified by the project specific QAPP.

1.5 SURROGATE RECOVERY COMPLIANCE

Refer to section E 1.2. The percent recovery (%R) for each surrogate compound added to each project sample were determined to be within the laboratory specified quality control (QC) limits.

1.6 LABORATORY CONTROL SAMPLES

Refer to section E 1.3. Compounds associated with the LCS/LCSD analyses associated with client samples exhibited recoveries and relative percent differences (RPDs) within the specified limits.

1.7 MATRIX SPIKE SAMPLES

Refer to section E 1.4. The sample(s) below were used for MS/MSD:

Lab Sample Number	Matrix Spike/ Matrix Spike Duplicate Sample Client ID	Method(s)
570-116265-1	B1BMP009_20221108	E200.8
570-120466-5	EPNDSW04_20221211-02	E200.8
570-120471-1	BGBMP0003_20221211	E218.6
570-122524-1	ILBMP0004_20230103	E200.8
570-122524-2	ILBMP0005_20230103	E200.8
570-122524-4	LPBMP0002_20230103	E1631
570-122995-7	EPNDSW04_20230104	E200.8
570-122995-7	EPNDSW04_20230104	E1631

1.8 BLANK SAMPLE ANALYSIS

Refer to section E 1.5. Method blank samples had no detections, indicating that no contamination from laboratory activities occurred, with any exceptions noted in Table 4. The analysis of the blank samples for field quality control was free of target compounds.

1.9 DUPLICATE SAMPLE ANALYSIS

Refer to section E 1.6. The samples listed below were used for laboratory duplicate analysis and the RPDs were all below 20 percent (or the absolute difference rule was satisfied if detects were less than 5 times the RL).

Lab Sample Number	Laboratory Duplicate Sample Client ID	Method(s)
570-116265-11	EPSW001IE01_20221108	SM2540D
570-120466-5	EPNDSW04_20221211-02	SM2540D

The following sample(s) were used for field duplicate analysis. RPDs were all below 35 percent for water (or the absolute difference rule was satisfied if detects were less than 5 times the RL). Any exceptions are noted below and qualified.

Primary Sample ID	Duplicate Sample ID	Method(s)
EPNDSW04_20221211	EPNDSW04_20221211-02	E200.8, SM2540D
LPBMP0002_20221108	LPBMP0002_DUP_20221108	E200.8, SM2540D

Method(s): E200.8, SM2540D				
Analyte (µg/L)	Primary Sample ID	Duplicate Sample ID	% RPD	Qualification
	LPBMP0002_20221108	LPBMP0002_DUP_20221108		
Copper	4.8	7.6	NA	J/UJ, Abs. Diff. > RL
Lead	3.4	2.1	NA	J/UJ, Abs. Diff. > RL
Method(s): SM2540D				
Analyte (mg/L)	Primary Sample ID	Duplicate Sample ID	% RPD	Qualification
	LPBMP0002_20221108	LPBMP0002_DUP_20221108		
Total Suspended Solids (TSS)	33	22	40	J/UJ, RPD>35

1.10 PRECISION AND ACCURACY

Refer to section E 1.7. Where required by the method, some measurement of analytical accuracy and precision was reported for each method with the site samples.

1.11 SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The results presented in this report were found to comply with the DQOs for the project and the guidelines specified by the analytical method. Based on the review of this report, the data are useable and acceptable as no data was rejected except for rejected data noted in Table 5. A summary of qualifiers applied to this data set is shown in Table 5.

2. Explanations

The following explanations include more detailed information regarding each of the sections in the DUSR above. Not all sections in the Explanations are represented:

- E 1.2 Surrogate Recovery Compliance
  - Surrogates, also known as system monitoring compounds, are compounds added to each sample prior to sample preparation to determining the efficiency of the extraction procedure by evaluating the percent recovery (%R) of the compounds.
- E 1.3 Laboratory Control Samples
  - The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) analyses are used to assess the precision and accuracy of the analytical method independent of matrix interferences.
- E 1.4 Matrix Spike Samples
  - Matrix spike/matrix spike duplicate (MS/MSD) data are used to assess the precision and accuracy of the analytical method and evaluate the effects of the sample matrix on the sample preparation procedures and measurement methodologies.
  - For inorganic methods, when a matrix spike recovery falls outside of the control limits and the sample result is less than four times the spike added, a post digestion spike (PDS) is performed.
- E 1.5 Blank Sample Analysis
  - Method blanks are prepared by the analytical laboratory and analyzed concurrently with the project samples to assess possible laboratory contamination.
  - Field blanks are prepared to identify contamination that may have been introduced during field activity. Equipment blanks are prepared to identify contamination that may have been introduced while decontaminating sampling equipment. Trip blanks are prepared when volatile analysis is requested to identify contamination that may have been introduced during transport.
- E 1.6 Laboratory and Field Duplicate Sample Analysis
  - The laboratory duplicate sample analysis is used by the laboratory at the time of the analysis to demonstrate acceptable method precision. The RPD or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.
  - The field duplicate sample analysis is used to assess the precision of the field sampling procedures and analytical method. The relative percent difference (RPD) or absolute difference was evaluated for each duplicate sample pair to monitor the reproducibility of the data.

- E 1.7 Precision and Accuracy
  - Precision measures the reproducibility of repetitive measurements. In a laboratory environment, this will be measured by determining the relative percent difference (RPD) found between a primary and a duplicate sample. This can be an LCS/LCSD pair, a MS/MSD pair, a laboratory duplicate performed on a site sample, or a field duplicate collected and analyzed concurrently with a site sample.
  - Accuracy is a statistical measurement of the correctness of a measured value and includes components of random error (variability caused by imprecision) and systematic error. In a laboratory environment, this will be measured by determining the percent recovery (%R) of certain spiked compounds. This can be assessed using LCS, blank spike (BS), MS, and/or surrogate recoveries.

3. Glossary

Not all of the following symbols, acronyms, or qualifiers occur in this document.

- Sample Types:
  - EB Equipment Blank Sample
  - FB Field Blank Sample
  - FD Field Duplicate Sample
  - N Primary Sample
  - TB Trip Blank Sample
- Units:
  - % SURVIVAL percent survival
  - µg/L microgram per liter
  - mg/kg milligrams per kilogram
  - mg/L milligram per liter
  - mL/L milliliters per liter
  - mpn/100mL most probable number per 100 milliliters
  - NTU nephelometric turbidity unit
  - pCi/L picocuries per liter
  - µmhos/cm micromhos per centimeter
- Matrices:
  - WM Stormwater
  - WMQ Water Quality control matrix
- Table Footnotes:
  - NA Not applicable
  - ND Non-detect
  - NR Not reported
- Common Symbols:
  - % percent
  - < less than
  - ≤ less than or equal to
  - > greater than
  - ≥ greater than or equal to
  - = equal
  - °C degrees Celsius
  - ± plus or minus
  - ~ approximately
  - x times (multiplier)
- Fractions:
  - D Dissolved (filtered)
  - N Normal (method cannot be filtered)
  - T Total (unfiltered)

4. Abbreviations

%D	Percent Difference
%R	Percent Recovery
%RSD	Percent Relative Standard Deviation
2s	2 sigma
4,4-DDT	4 4-dichlorodiphenyltrichloroethane
Abs Diff	Absolute Difference
amu	atomic mass unit
BPJ	Best Professional Judgement
BS	Blank Spike
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
CCVL	Continuing Calibration Verification Low
COC	Chain of Custody
COM	Combined Isotope Calculation
Cr (VI)	Hexavalent Chromium
CRI	Collision Reaction Interface
DQO	data quality objective
DUSR	Data Usability Summary Report
EMPC	Estimated Maximum Possible Concentration
FBK	Field Blank Contamination
FDP	Field Duplicate
GC	Gas Chromatograph
GC/MS	Gas Chromatography/Mass Spectrometry
GPC	Gel Permeation Chromatography
HCl	Hydrochloric Acid
ICAL	Initial Calibration
ICB	Initial Calibration Blank
ICP/MS	Inductively Coupled Plasma/ Mass Spectrometry
ICV	Initial Calibration Verification
ICVL	Initial Calibration Verification Low
IPA	Isopropyl Alcohol
LC	Laboratory Control
LCS/LCSD	Laboratory Control Sample/Laboratory Control Sample Duplicate
MDC	Minimum Detectable Concentration
MDL	Laboratory Method Detection Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NFG	National Functional Guidelines
NH_3	Ammonia
PCB	Polychlorinated Biphenyl
PDS	Post Digestion Spike
PEM	Performance Evaluation Mixture
QAPP	Quality Assurance Project Plan
QC	Quality Control
QSM	Quality Systems Manual
R^2	R-squared value
Ra-226	Radium-226
Ra-228	Radium-228
RESC	Resolution Check Measure
RER	Relative Error Ratio
RL	Laboratory Reporting Limit
RPD	Relative Percent Difference
RRF	Relative Response Factors
RT	Retention Time
SAP	sampling analysis plan
SDG	Sample Delivery Group
SIM	Selected ion monitoring
SOP	Laboratory Standard Operating Procedures
SPE	Solid Phase Extraction
SVOC	Semi-Volatile Organic Compounds
TIC	Tentatively Identified Compound
TKN	Total Kjeldahl Nitrogen
TPH	Total Petroleum Hydrocarbon
TPU	Total Propagated Uncertainty
amu	atomic mass unit
USEPA	U.S. Environmental Protection Agency
VOC	Volatile Organic Compounds

5. Qualifiers

The qualifiers below are from the USEPA National Functional Guidelines and the data in the DUSR may contain these qualifiers:

- Laboratory Qualifiers:

BA	Relative percent difference out of control.
BU	Analyzed out of holding time.
BV	Sample received after holding time expired.
EY	Result exceeds normal dynamic range; reported as a minimum estimate.
F1	MS and/or MSD recovery exceeds control limits.
G	The Sample MDC is greater than the requested RL.
J,DX	Results found between the EDL or MDL and laboratory RL.
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS).
LN	MS and/or MSD below acceptance limits. See Blank Spike (LCS).
LQ	LCS/LCSD recovery above method control limits.
MB	Analyte present in the method blank.
PI	Primary and confirm results varied by > than 40% RPD.
q	The reported result is the estimated maximum possible concentration of this analyte, quantitated using the theoretical ion ratio; the measured ion ratio does not meet qualitative identification criteria and indicates a possible interference.
U	Result is less than the sample detection limit.

- Validation Notes:

--	Based on validation of the data, a qualifier was not required.
*1	Improper preservation of sample.
*III	Unusual problems found with the data that have been described in the validation report.
B	Laboratory method blank contamination.
D	The analysis with this flag should not be used because another more technically sound analysis is available.
DNQ	Detected but not quantified (constituent value greater than or equal to the laboratory method detection limit and less than the laboratory reporting limit).
E	Duplicates show poor agreement.
H	Holding times were exceeded.
L1	Laboratory control standard (LCS)/laboratory control standard duplicate (LCSD), relative percent difference (RPD) was outside the control limit.
Q	Matrix spike (MS) recovery outside of control limits.
RPD	Pesticides and PCB Confirmation Column RPD Exceeded.

- Validation Qualifiers:

=	No Qualifier.
J	The compound was positively identified; however, the associated numerical value is an estimated concentration only.
J-	The result is an estimated quantity, but the result may be biased low.
J+	The result is an estimated quantity, but the result may be biased high.
R	The sample results were rejected as unusable; the compound may or may not be present in the sample.
U	The compound was analyzed for but not detected. The associated value is either the compound quantitation limit if not detected by the analytical instrument or could be the reported or blank concentration if qualified by blank contamination. This can also be displayed as less than the associated compound quantitation limit (<RL or <MDL), or “ND”.
UJ	The compound was not detected above the reported sample quantitation limit; however, the reported limit is estimated and may or may not represent the actual limit of quantitation.

References

1. United States Environmental Protection Agency (USEPA), 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-542-R-20-006. November 2020.
2. USEPA, 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. EPA-540-R-20-005. November 2020.
3. Haley & Aldrich, Inc, 2015. Quality Assurance Project Field Plan for Santa Susana Field Laboratory Stormwater Sampling Program. December.

Attachments:

Table 1 – Sample Management
Table 2 – Method Holding Times
Table 3 – Holding Times
Table 4 – Method Blanks
Table 5 – System Performance

TABLES

TABLE 1
SAMPLE MANAGEMENT
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Sample ID	Sample Type	Lab ID	Sample Date	Matrix	Method(s)
B1BMP009_20221108	N	570-116265-1	11/08/2022	WM	A, B
B1BMP010_20221108	N	570-116265-2	11/08/2022	WM	A, B
B1BMP011_20221108	N	570-116265-3	11/08/2022	WM	A, B
ILBMP0004_20221108	N	570-116265-4	11/08/2022	WM	A, B
ILBMP0005_20221108	N	570-116265-5	11/08/2022	WM	A, B
ILBMP0008_20221108	N	570-116265-6	11/08/2022	WM	A, B
LPBMP0002_20221108	N	570-116265-7	11/08/2022	WM	A, B
LPBMP0003_20221108	N	570-116265-8	11/08/2022	WM	A, B
LPBMP0004_20221108	N	570-116265-9	11/08/2022	WM	A, B
LPBMP0002_DUP_20221108	FD	570-116265-10	11/08/2022	WM	A, B
EPSW001IE01_20221108	N	570-116265-11	11/08/2022	WM	A, B, C, D
A1BMP0002_20221211	N	570-120466-1	12/11/2022	WM	A, B
A1BMP0003_20221211	N	570-120466-2	12/11/2022	WM	A, B
ILBMP0002_20221211	N	570-120466-3	12/11/2022	WM	A, B
EPNDSW04_20221211	N	570-120466-4	12/11/2022	WM	A, B
EPNDSW04_20221211-02	FD	570-120466-5	12/11/2022	WM	A, B
BGBMP0003_20221211	N	570-120471-1	12/11/2022	WM	A, B, C, D, E, F, G, H, I
ILBMP0004_20230103	N	570-122524-1	01/03/2023	WM	A, B, J
ILBMP0005_20230103	N	570-122524-2	01/03/2023	WM	A, B, J
ILBMP0008_20230103	N	570-122524-3	01/03/2023	WM	A, B, J
LPBMP0002_20230103	N	570-122524-4	01/03/2023	WM	A, B, J
LPBMP0003_20230103	N	570-122524-5	01/03/2023	WM	A, B, J
LPBMP0004_20230103	N	570-122524-6	01/03/2023	WM	A, B, J
EPBBC_20230105	N	570-122687-1	01/05/2023	WM	J
A1BMP0002_20230104	N	570-122995-1	01/04/2023	WM	A, B, J
A1BMP0003_20230104	N	570-122995-2	01/04/2023	WM	A, B, J
B1BMP0009_20230104	N	570-122995-3	01/04/2023	WM	A, B, J
B1BMP0010_20230104	N	570-122995-4	01/04/2023	WM	A, B, J
B1BMP0011_20230104	N	570-122995-5	01/04/2023	WM	A, B, J
ILBMP0002_20230104	N	570-122995-6	01/04/2023	WM	A, B, J
EPNDSW04_20230104	N	570-122995-7	01/04/2023	WM	A, B, J

TABLE 2
METHOD HOLDING TIMES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Method Holding Times			
A	E200.8	Metals (by Mass Spectrometer)	180 days for liquid, preserved
B	SM2540D	Total Suspended Solids	7 days for liquid unpreserved
C	E200.7	Metals	180 days for liquid, preserved
D	E300	Inorganic Anions	28 days for liquid unpreserved
E	E625.1SIM	Base/Neutral and Acid by gas chromatography/mass spectrometry (GC/MS) by SIM	7 days / 40 days
F	E218.6	Hexavalent Chromium	28 days for liquid, preserved 24 hours for liquid unpreserved
G	SM4500-CN-E	Total Cyanides	14 days preserved
H	E314.0	Perchlorate using Ion Chromatography	28 days
I	E624.1	Volatile Organics GC/MS	7 days unpreserved (CVE and Acrolein) 14 days preserved (all other volatile organic compounds)
J	E1631	Determination of Total Mercury	28 days preserved

TABLE 3
HOLDING TIMES
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG #	Method	Matrix	Holding Time	Preservation	Sample ID, Violation, Qualification
5701204711	E300 (Nitrite, Nitrate)	Water	48 hours	unpreserved	The sample 570-120471-1 was analyzed outside the holding time due to the exceeded lab capacity. Qualified J+/UJ
5701204711	E218.6 Chromium VI	Water	28 days preserved 24 hours unpreserved	to pH 9.3-9.7 with ammonium buffer solution	The sample 570-120471-1 was received and analyzed outside of holding time. Qualified J/UJ
5701204711	E200.7	Water	180 days	preserved	The sample 570-120471-1 was received unpreserved, the pH was greater than 2, preserved at the lab prior to analysis. No qualification necessary.
5701204711	E200.8	Water	180 days	preserved	
5701204711	SM4500-CN-E	Water	14 days	to pH>10 with NaOH	The sample 570-120471-1 was received unpreserved, preserved at the lab prior to analysis. No qualification necessary.

TABLE 4
METHOD BLANKS
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

Blank Type	SDG	Batch ID	Analyte Detected in Blank	Concentration	Qualifier	Affected Samples
MB	5701162651	280926	Manganese, Total	7.2 J	NA	None, samples are >RL and>10x Blank
MB	5701204711	289800	Iron, Total	8.5 J	Result U	570-120471-1
MB	5701204711	291076	Boron, Dissolved	7.8 J	RL U	570-120471-1
MB	5701225244	414910	Mercury	0.000112 J	NA	None, samples are >RL and>10x Blank
MB	5701229951	295467	Copper, Total	0.329 J	NA	None, samples are >RL and>10x Blank
MB	5701229951	295467	Lead, Total	0.510 J	RL U	570-122995-2, 570-122995-3, 570-122995-5
MB	5701229951	295467	Lead, Total	0.510 J	J+	570-122995-6

TABLE 5
SYSTEM PERFORMANCE
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701162651	B1BMP0009	B1BMP009_20221108	11/8/2022	570-116265-1	E200.8	Cadmium	0.25	J,DX	J	DNQ	µg/L	
5701162651	LPBMP0002	LPBMP0002_DUP_20221108	11/8/2022	570-116265-10	E200.8	Lead	0.25	J,DXBU	J	DNQ	µg/L	
5701162651	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E200.8	Cadmium	0.25	J,DX	J	DNQ	µg/L	
5701162651	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E200.8	Lead	0.46	J,DXBU	J	DNQ	µg/L	
5701162651	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E200.7	Manganese	27	J,DXBU	J	DNQ	µg/L	
5701162651	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E300	Sulfate	0.84	J,DX	J	DNQ	mg/L	
5701162651	EPSW001IE01	EPSW001IE01_20221108	11/8/2022	570-116265-11	E200.7	Zinc	93	J,DX	J	DNQ	µg/L	
5701162651	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E200.8	Lead	0.72	J,DX	J	DNQ	µg/L	
5701162651	B1BMP0010	B1BMP010_20221108	11/8/2022	570-116265-2	E200.8	Lead	0.13	J,DXBU	J	DNQ	µg/L	
5701162651	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E200.8	Lead	0.74	J,DX	J	DNQ	µg/L	
5701162651	B1BMP0011	B1BMP011_20221108	11/8/2022	570-116265-3	E200.8	Lead	0.18	J,DXBU	J	DNQ	µg/L	
5701162651	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E200.8	Cadmium	0.2	J,DX	J	DNQ	µg/L	
5701162651	ILBMP0004	ILBMP0004_20221108	11/8/2022	570-116265-4	E200.8	Lead	0.23	J,DXBU	J	DNQ	µg/L	
5701162651	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E200.8	Lead	0.85	J,DX	J	DNQ	µg/L	
5701162651	ILBMP0005	ILBMP0005_20221108	11/8/2022	570-116265-5	E200.8	Lead	0.25	J,DXBU	J	DNQ	µg/L	
5701162651	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E200.8	Cadmium	0.33	J,DX	J	DNQ	µg/L	
5701162651	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E200.8	Cadmium	0.22	J,DXBU	J	DNQ	µg/L	
5701162651	ILBMP0008	ILBMP0008_20221108	11/8/2022	570-116265-6	E200.8	Lead	0.23	J,DXBU	J	DNQ	µg/L	
5701162651	LPBMP0002	LPBMP0002_20221108	11/8/2022	570-116265-7	E200.8	Lead	0.24	J,DXBU	J	DNQ	µg/L	
5701162651	LPBMP0003	LPBMP0003_20221108	11/8/2022	570-116265-8	E200.8	Lead	0.24	J,DXBU	J	DNQ	µg/L	
5701162651	LPBMP0004	LPBMP0004_20221108	11/8/2022	570-116265-9	E200.8	Lead	0.38	J,DXBU	J	DNQ	µg/L	
5701204661	A1BMP0002	A1BMP0002_20221211	12/11/2022	570-120466-1	E200.8	Cadmium	0.14	J,DXBU	J	DNQ	µg/L	
5701204661	A1BMP0003	A1BMP0003_20221211	12/11/2022	570-120466-2	E200.8	Lead	0.28	J,DXBU	J	DNQ	µg/L	
5701204661	ILBMP0002	ILBMP0002_20221211	12/11/2022	570-120466-3	E200.8	Lead	0.7	J,DXBU	J	DNQ	µg/L	
5701204661	EPNDSW04	EPNDSW04_20221211	12/11/2022	570-120466-4	E200.8	Lead	0.8	J,DXBU	J	DNQ	µg/L	
5701204661	EPNDSW04	EPNDSW04_20221211-02	12/11/2022	570-120466-5	E200.8	Lead	0.67	J,DXBU	J	DNQ	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E200.8	Antimony	0.43	J,DXBU	J	DNQ	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E200.8	Arsenic	0.39	J,DX	J	DNQ	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E200.8	Arsenic	0.44	J,DXBU	J	DNQ	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E200.7	Boron	32	JDXBUMB	J	DNQ	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E200.7	Boron	34	J,DX	J	DNQ	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E200.8	Chromium	0.36	J,DX	J	DNQ	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E200.8	Chromium	0.3	J,DXBU	J	DNQ	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E218.6	Chromium VI (Hexavalent)	0.019	JDXBUBV	J	H	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E218.6	Chromium VI (Hexavalent)	0.061	J,DXBU	J	H	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E200.8	Copper	1.9	J,DX	J	DNQ	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E200.8	Copper	1.7	J,DXBU	J	DNQ	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E200.8	Iron	56	MB	U	B	µg/L	Report as Result U. Prior to validation, MDL was 3.7 and RL was 20
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E200.8	Nickel	0.46	J,DX	J	DNQ	µg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E300	Nitrate (as N)	4.7	BU	J+	H	mg/L	
5701204711	BGBMP0003	BGBMP0003_20221211	12/11/2022	570-120471-1	E300	Nitrite (as N)	ND	UBU	UJ	H	mg/L	
5701225241	ILBMP0004	ILBMP0004_20230103	1/3/2023	570-122524-1	E200.8	Cadmium	0.150	J,DX	J	DNQ	µg/L	
5701225241	ILBMP0004	ILBMP0004_20230103	1/3/2023	570-122524-1	E200.8	Lead	0.18	J,DXBU	J	DNQ	µg/L	
5701225241	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E200.8	Cadmium	0.140	J,DX	J	DNQ	µg/L	
5701225241	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E200.8	Cadmium	0.160	J,DXBU	J	DNQ	µg/L	
5701225241	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E200.8	Lead	0.620	J,DX	J	DNQ	µg/L	
5701225241	ILBMP0005	ILBMP0005_20230103	1/3/2023	570-122524-2	E200.8	Lead	0.21	J,DXBU	J	DNQ	µg/L	

TABLE 5
SYSTEM PERFORMANCE
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY

SDG#	Location	Sample ID	Sample Date	Lab ID	Method	Analyte	Result	Laboratory Qualifier	Final Validated Qualifier	Validation Note	Unit	Notes
5701225241	ILBMP0008	ILBMP0008_20230103	1/3/2023	570-122524-3	E200.8	Cadmium	0.170	J,DX	J	DNQ	µg/L	
5701225241	ILBMP0008	ILBMP0008_20230103	1/3/2023	570-122524-3	E200.8	Cadmium	0.140	J,DXBU	J	DNQ	µg/L	
5701225241	ILBMP0008	ILBMP0008_20230103	1/3/2023	570-122524-3	E200.8	Lead	0.9300	J,DX	J	DNQ	µg/L	
5701225241	ILBMP0008	ILBMP0008_20230103	1/3/2023	570-122524-3	E200.8	Lead	0.15	J,DXBU	J	DNQ	µg/L	
5701225241	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E200.8	Lead	0.54	J,DX	J	DNQ	µg/L	
5701225241	LPBMP0002	LPBMP0002_20230103	1/3/2023	570-122524-4	E200.8	Lead	0.15	J,DXBU	J	DNQ	µg/L	
5701225241	LPBMP0003	LPBMP0003_20230103	1/3/2023	570-122524-5	E200.8	Lead	0.540	J,DX	J	DNQ	µg/L	
5701225241	LPBMP0003	LPBMP0003_20230103	1/3/2023	570-122524-5	E200.8	Lead	0.15	J,DXBU	J	DNQ	µg/L	
5701225241	LPBMP0004	LPBMP0004_20230103	1/3/2023	570-122524-6	E200.8	Lead	0.280	J,DX	J	DNQ	µg/L	
5701225241	LPBMP0004	LPBMP0004_20230103	1/3/2023	570-122524-6	E200.8	Lead	0.37	J,DXBU	J	DNQ	µg/L	
5701229951	A1BMP0003	A1BMP0003_20230104	1/4/2023	570-122995-2	E200.8	Lead	0.34	J,DXMB	U	B	µg/L	Report as RL U. Prior to validation, MDL was 0.12
5701229951	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E200.8	Lead	0.61	J,DXMB	U	B	µg/L	Report as RL U. Prior to validation, MDL was 0.12
5701229951	B1BMP0009	B1BMP0009_20230104	1/4/2023	570-122995-3	E200.8	Lead	0.18	J,DXBU	J	DNQ	µg/L	
5701229951	B1BMP0010	B1BMP0010_20230104	1/4/2023	570-122995-4	E200.8	Lead	0.22	J,DXBU	J	DNQ	µg/L	
5701229951	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E200.8	Lead	0.54	J,DXMB	U	B	µg/L	Report as RL U. Prior to validation, MDL was 0.12
5701229951	B1BMP0011	B1BMP0011_20230104	1/4/2023	570-122995-5	E200.8	Lead	0.19	J,DXBU	J	DNQ	µg/L	
5701229951	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E200.8	Cadmium	0.42	J,DX	J	DNQ	µg/L	
5701229951	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E200.8	Cadmium	0.15	J,DXBU	J	DNQ	µg/L	
5701229951	ILBMP0002	ILBMP0002_20230104	1/4/2023	570-122995-6	E200.8	Lead	2.2	MB	J+	B	µg/L	

NASA VALIDATION REPORTS

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-116620-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**A2540D**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0003S033	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0003S033								
Total Suspended Solids	**54.8**			1.66	2		mg/L	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-116620-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**D4464(M)**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0003S033	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

No spikes in this SDG. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Laboratory Control Sample: No spikes in this SDG. No spike dupes in this SDG.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0003S033								
Clay (less than 0.00391 mm)	**7.87**			0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	**3.56**			0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	**63.32**			0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	**71.19**			0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	**25.25**			0.01	0.01		PERCENT	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-116620-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**E200.8**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0003S033	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

These analytes had Method Blank detects: Copper.

Blank Type	Blank ID	Analyte	Result	Report Limit	Lab Flag	Units	SDG
LB	MB 570-280956/1-A	Copper	0.449	2	J	ug/L	570-11662(

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Method Blanks: These analytes had Method Blank detects: Copper.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0003S033								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**4.86**		B	0.318	2		ug/L	LB>MDL (None)
	4.86		B	0.318	2		ug/L	RemoveBLabFlag (=)
Copper, Dissolved	**1.85**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**6.25**			0.118	1		ug/L	
Lead, Dissolved	**0.193**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
LB>MDL	Laboratory blank contamination greater than the method detection limit	Blank
RemoveBLabFlag	Lab B flag removed - analyte not detected in sample	Blank
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-116620-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**E245.1**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0003S033	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0003S033								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-116620-2**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**8290**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0003S033	N	1			

1. Case Narrative / Items of Interest

The following items were noted: >ICLinearRange; EMPC; LB<RL; LCSRPD

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, 2,3,4,6,7,8-HxCDF, OCDD, OCDF.

Blank Type	Blank ID	Analyte	Result	Report Limit	Lab Flag	Units	SDG
LB	MB 320-634814/1-A	1,2,3,4,6,7,8-HpCDD	3.349	50	J	pg/L	570-116620
LB	MB 320-634814/1-A	1,2,3,4,6,7,8-HpCDF	3.123	50	J	pg/L	570-116620
LB	MB 320-634814/1-A	1,2,3,4,7,8,9-HpCDF	2.554	50	J	pg/L	570-116620
LB	MB 320-634814/1-A	1,2,3,4,7,8-HxCDD	3.214	50	J	pg/L	570-116620
LB	MB 320-634814/1-A	1,2,3,4,7,8-HxCDF	1.443	50	J q	pg/L	570-116620
LB	MB 320-634814/1-A	1,2,3,6,7,8-HxCDD	1.533	50	J q	pg/L	570-116620
LB	MB 320-634814/1-A	1,2,3,6,7,8-HxCDF	1.222	50	J	pg/L	570-116620
LB	MB 320-634814/1-A	1,2,3,7,8,9-HxCDD	2.134	50	J	pg/L	570-116620
LB	MB 320-634814/1-A	1,2,3,7,8,9-HxCDF	1.286	50	J q	pg/L	570-116620
LB	MB 320-634814/1-A	2,3,4,6,7,8-HxCDF	1.446	50	J	pg/L	570-116620
LB	MB 320-634814/1-A	OCDD	10.28	100	J	pg/L	570-116620
LB	MB 320-634814/1-A	OCDF	5.654	100	J	pg/L	570-116620

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG. All reported EMPC values were qualifed as estimated non-detects

Matrix / Analyte	*Sample ID*	*LR Type*	*Result*	*Qualifier*	*Reason*
WATER	1,2,3,7,8-PeCDD				
	EVBMP0003S033		3.6 pg/L	UJ	EMPC
WATER	2,3,7,8-TCDF				
	EVBMP0003S033		2.1 pg/L	UJ	EMPC

4. Laboratory Control Sample

All recovery acceptance criteria were met. These LCS RPD analytes were out of control: 1,2,3,7,8,9-HxCDF (BS), 13C-1,2,3,7,8,9-HxCDF (BS), 13C-2,3,4,7,8-PeCDF (BS), 13C-OCDF (BS), 2,3,4,7,8-PeCDF (BS), OCDF (BS).

5. Surrogates

All acceptance criteria were met.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV. The linear calibration range of the instrument was exceeded for OCDD due to concentration of target analyte. Result was qualified as estimated

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

Flagging Category

Result greater than linear calibration range

Instrument	*Date*	*Field ID*	*Analyte*	*Validation Flag*
		EVBMP0003S033	OCDD	J

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Method Blanks: These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, 2,3,4,6,7,8-HxCDF, OCDD, OCDF.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0003S033								
1,2,3,4,6,7,8-HpCDD	**4900**		B	25	48		pg/L	LB>MDL (None)
1,2,3,4,6,7,8-HpCDF	**810**		B	8.7	48		pg/L	LB>MDL (None)
1,2,3,4,7,8,9-HpCDF	**49**		B	9.2	48		pg/L	LB>MDL (None)
1,2,3,4,7,8-HxCDD	**33**	J	J B	2.1	48		pg/L	RemoveBLabFlag (J)
	33	J	J B	2.1	48		pg/L	LB>MDL (None)
1,2,3,4,7,8-HxCDF	**40**	J	J B	2.4	48		pg/L	RemoveBLabFlag (J)
	40	J	J B	2.4	48		pg/L	LB>MDL (None)
1,2,3,6,7,8-HxCDD	**250**		B	2.3	48		pg/L	LB>MDL (None)
1,2,3,6,7,8-HxCDF	**23**	J	J B	2.3	48		pg/L	RemoveBLabFlag (J)
	23	J	J B	2.3	48		pg/L	LB>MDL (None)
1,2,3,7,8,9-HxCDD	**72**		B	2	48		pg/L	LB>MDL (None)
1,2,3,7,8,9-HxCDF	3.4	U	J B	2.5	48		pg/L	RemoveBLabFlag (J)
	3.4	U	J B	2.5	48		pg/L	LB<RL (U)
	3.4	U	J B	2.5	48		pg/L	LCSRPD (J)
1,2,3,7,8-PeCDD	3.6	UJ	J q	0.94	48		pg/L	EMPC (UJ)
1,2,3,7,8-PeCDF	**3.4**	J	J	0.82	48		pg/L	
2,3,4,6,7,8-HxCDF	**21**	J	J B	2.2	48		pg/L	RemoveBLabFlag (J)
	21	J	J B	2.2	48		pg/L	LB>MDL (None)
2,3,4,7,8-PeCDF	**4.7**	J	J	1	48		pg/L	LCSRPD (J)
2,3,7,8-TCDD	0.5	U	U	0.5	9.6		pg/L	
2,3,7,8-TCDF	2.1	UJ	J q	0.25	9.6		pg/L	EMPC (UJ)
OCDD	**68000**	J	G E B	100	100		pg/L	>ICLinearRange (J)
OCDF	**2700**	J	B	3.9	96		pg/L	LB>MDL (None)
	2700	J	B	3.9	96		pg/L	LCSRPD (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
LB<RL	Laboratory blank contamination less than the reporting limit	Blank
LB>MDL	Laboratory blank contamination greater than the method detection limit	Blank
RemoveBLabFlag	Lab B flag removed - analyte not detected in sample	Blank
>ICLinearRange	Result greater than linear calibration range	Calibration
LCSRPD	LCS RPD criteria exceeded	LaboratoryControlSample
EMPC	Estimated Maximum Possible Concentration	Matrix

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-120399-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**A2130B**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0012S011	N	1			
A2BMP0012S011	LR	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

All acceptance criteria were met.

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0012S011								
Turbidity	**3.7**			0.05	0.05		NTU	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-120399-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**A2540D**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0012S011	N	1			
EVBMP0003S034	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0012S011								
Total Suspended Solids	**6.57**			1.18	1.43		mg/L	
Field ID: EVBMP0003S034								
Total Suspended Solids	**65.5**			4.14	5		mg/L	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-120399-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**D4464(M)**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0012S011	N	1			
EVBMP0003S034	N	1			
EVBMP0003S034	LR	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

Laboratory Duplicates were not examined by AutoDV.

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

No spikes in this SDG. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Laboratory Control Sample: No spikes in this SDG. No spike dupes in this SDG.
Laboratory Duplicate: Laboratory Duplicates were not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0012S011								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0003S034								
Clay (less than 0.00391 mm)	**5.47**			0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	**5.06**			0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	**14.75**			0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	**14.11**			0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	**41.2**			0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	**46.67**			0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	**19.41**			0.01	0.01		PERCENT	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-120399-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**E200.8**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0012S011	N	1			
EVBMP0003S034	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0012S011								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**2.33**			0.318	2		ug/L	
Copper, Dissolved	**2.37**		H	0.318	2		ug/L	InvalidLabFlag (=)
Lead	**1.34**			0.118	1		ug/L	
Lead, Dissolved	**0.159**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)
Field ID: EVBMP0003S034								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**4.23**			0.318	2		ug/L	
Copper, Dissolved	**1.09**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**3.58**			0.118	1		ug/L	
Lead, Dissolved	**0.232**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-120399-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**E245.1**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0012S011	N	1			
EVBMP0003S034	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0012S011								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0003S034								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-120399-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**8290**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0012S011	N	1			
EVBMP0003S034	N	1			

1. Case Narrative / Items of Interest

The following items were noted: EMPC; LB<RL; LCSRPD

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, OCDD, OCDF.

Blank Type	Blank ID	Analyte	Result	Report Limit	Lab Flag	Units	SDG
LB	MB 320-643486/1-A	1,2,3,4,6,7,8-HpCDD	2.664	50	J q	pg/L	570-120399
LB	MB 320-643486/1-A	1,2,3,4,6,7,8-HpCDF	2.818	50	J	pg/L	570-120399
LB	MB 320-643486/1-A	1,2,3,4,7,8,9-HpCDF	1.858	50	J q	pg/L	570-120399
LB	MB 320-643486/1-A	1,2,3,4,7,8-HxCDD	1.904	50	J q	pg/L	570-120399
LB	MB 320-643486/1-A	1,2,3,7,8,9-HxCDD	0.8592	50	J	pg/L	570-120399
LB	MB 320-643486/1-A	1,2,3,7,8,9-HxCDF	0.7447	50	J	pg/L	570-120399
LB	MB 320-643486/1-A	OCDD	4.844	100	J	pg/L	570-120399
LB	MB 320-643486/1-A	OCDF	1.953	100	J q	pg/L	570-120399

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG. All reported EMPC values were qualified as estimated non-detects

Matrix / Analyte	*Sample ID*	*LR Type*	*Result*	*Qualifier*	*Reason*
WATER	1,2,3,4,7,8,9-HpCDF				
	A2BMP0012S011		1.1 pg/L	UJ	EMPC

WATER	1,2,3,4,7,8-HxCDD			
	A2BMP0012S011	2.7 pg/L	UJ	EMPC
WATER	1,2,3,6,7,8-HxCDD			
	A2BMP0012S011	1.4 pg/L	UJ	EMPC
	EVBMP0003S034	3.4 pg/L	UJ	EMPC
WATER	2,3,4,6,7,8-HxCDF			
	A2BMP0012S011	0.86 pg/L	UJ	EMPC

4. Laboratory Control Sample

All acceptance criteria were met. These LCS RPD analytes were out of control: 13C-OCDF (BS), OCDF (BS).

5. Surrogates

All acceptance criteria were met.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Method Blanks: These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, OCDD, OCDF.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0012S011								
1,2,3,4,6,7,8-HpCDD	**16**	J	J B	0.39	69		pg/L	LB>MDL (None)
	16	J	J B	0.39	69		pg/L	RemoveBLabFlag (J)
1,2,3,4,6,7,8-HpCDF	3.7	U	J B	0.14	69		pg/L	RemoveBLabFlag (J)
	3.7	U	J B	0.14	69		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	1.1	UJ	J B q	0.15	69		pg/L	RemoveBLabFlag (J)
	1.1	UJ	J B q	0.15	69		pg/L	LB<RL (U)
	1.1	UJ	J B q	0.15	69		pg/L	EMPC (UJ)
1,2,3,4,7,8-HxCDD	2.7	UJ	J B q	0.099	69		pg/L	RemoveBLabFlag (J)
	2.7	UJ	J B q	0.099	69		pg/L	LB<RL (U)
	2.7	UJ	J B q	0.099	69		pg/L	EMPC (UJ)
1,2,3,4,7,8-HxCDF	**1.3**	J	J	0.12	69		pg/L	RemoveBLabFlag (J)
1,2,3,6,7,8-HxCDD	1.4	UJ	J q	0.11	69		pg/L	RemoveBLabFlag (J)
	1.4	UJ	J q	0.11	69		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDF	**0.9**	J	J	0.12	69		pg/L	RemoveBLabFlag (J)
1,2,3,7,8,9-HxCDD	1.9	U	J B	0.095	69		pg/L	RemoveBLabFlag (J)
	1.9	U	J B	0.095	69		pg/L	LB<RL (U)
1,2,3,7,8,9-HxCDF	1.7	U	J B	0.12	69		pg/L	RemoveBLabFlag (J)
	1.7	U	J B	0.12	69		pg/L	LB<RL (U)
1,2,3,7,8-PeCDD	0.23	U	U	0.23	69		pg/L	
1,2,3,7,8-PeCDF	0.071	U	U	0.071	69		pg/L	
2,3,4,6,7,8-HxCDF	0.86	UJ	J q	0.11	69		pg/L	RemoveBLabFlag (J)
	0.86	UJ	J q	0.11	69		pg/L	EMPC (UJ)
2,3,4,7,8-PeCDF	0.077	U	U	0.077	69		pg/L	
2,3,7,8-TCDD	0.044	U	U	0.044	14		pg/L	
2,3,7,8-TCDF	0.02	U	U	0.02	14		pg/L	
OCDD	**230**		B	0.37	140		pg/L	RemoveBLabFlag (=)
	230		B	0.37	140		pg/L	LB>MDL (None)
OCDF	8.5	U	J B	0.14	140		pg/L	LB<RL (U)
	8.5	U	J B	0.14	140		pg/L	LCSRPD (J)
	8.5	U	J B	0.14	140		pg/L	RemoveBLabFlag (J)
Field ID: EVBMP0003S034								
1,2,3,4,6,7,8-HpCDD	**44**	J	J B	0.55	67		pg/L	RemoveBLabFlag (J)
	44	J	J B	0.55	67		pg/L	LB>MDL (None)
1,2,3,4,6,7,8-HpCDF	10	U	J B	0.27	67		pg/L	RemoveBLabFlag (J)
	10	U	J B	0.27	67		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	1.1	U	J B	0.29	67		pg/L	RemoveBLabFlag (J)
	1.1	U	J B	0.29	67		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDD	3.1	U	J B	0.2	67		pg/L	RemoveBLabFlag (J)
	3.1	U	J B	0.2	67		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.13	U	U	0.13	67		pg/L	
1,2,3,6,7,8-HxCDD	3.4	UJ	J q	0.22	67		pg/L	RemoveBLabFlag (J)
	3.4	UJ	J q	0.22	67		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDF	0.14	U	U	0.14	67		pg/L	
1,2,3,7,8,9-HxCDD	2.4	U	J B	0.19	67		pg/L	RemoveBLabFlag (J)
	2.4	U	J B	0.19	67		pg/L	LB<RL (U)
1,2,3,7,8,9-HxCDF	1.1	U	J B	0.14	67		pg/L	RemoveBLabFlag (J)

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0003S034								
	1.1	U	J B	0.14	67		pg/L	LB<RL (U)
1,2,3,7,8-PeCDD	0.05	U	U	0.05	67		pg/L	
1,2,3,7,8-PeCDF	0.067	U	U	0.067	67		pg/L	
2,3,4,6,7,8-HxCDF	0.13	U	U	0.13	67		pg/L	
2,3,4,7,8-PeCDF	0.075	U	U	0.075	67		pg/L	
2,3,7,8-TCDD	0.11	U	U	0.11	13		pg/L	
2,3,7,8-TCDF	0.044	U	U	0.044	13		pg/L	
OCDD	**330**		B	0.65	130		pg/L	RemoveBLabFlag (=)
	330		B	0.65	130		pg/L	LB>MDL (None)
OCDF	**16**	J	J B	0.085	130		pg/L	LB>MDL (None)
	16	J	J B	0.085	130		pg/L	LCSRPD (J)
	16	J	J B	0.085	130		pg/L	RemoveBLabFlag (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
LB<RL	Laboratory blank contamination less than the reporting limit	Blank
LB>MDL	Laboratory blank contamination greater than the method detection limit	Blank
RemoveBLabFlag	Lab B flag removed - analyte not detected in sample	Blank
LCSRPD	LCS RPD criteria exceeded	LaboratoryControlSample
EMPC	Estimated Maximum Possible Concentration	Matrix

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-122824-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**A2130B**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0012S012	N	1			
EVBMP0008S017	N	1			
EVBMP0009S015	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0012S012								
Turbidity	**15**			0.05	0.05		NTU	
Field ID: EVBMP0008S017								
Turbidity	**4.4**			0.05	0.05		NTU	
Field ID: EVBMP0009S015								
Turbidity	**3.7**			0.05	0.05		NTU	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-122824-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**A2540D**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0006S014	N	1			
A2BMP0007S022	N	1			
A2BMP0012S012	N	1			
A2BMP0012S012	LR	1			
EVBMP0007S014	N	1			
EVBMP0008S017	N	1			
EVBMP0009S015	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

All acceptance criteria were met.

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0006S014								
Total Suspended Solids	**1.8**			0.829	1		mg/L	
Field ID: A2BMP0007S022								
Total Suspended Solids	**9.5**			0.829	1		mg/L	
Field ID: A2BMP0012S012								
Total Suspended Solids	**10.2**			1.66	2		mg/L	
Field ID: EVBMP0007S014								
Total Suspended Solids	0.829	U	U	0.829	1		mg/L	
Field ID: EVBMP0008S017								
Total Suspended Solids	**2.3**			0.829	1		mg/L	
Field ID: EVBMP0009S015								
Total Suspended Solids	**1**			0.829	1		mg/L	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-122824-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**E200.8**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0006S014	N	1			
A2BMP0007S022	N	1			
A2BMP0012S012	N	1			
EVBMP0007S014	N	1			
EVBMP0008S017	N	1			
EVBMP0009S015	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0006S014								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**2.54**			0.318	2		ug/L	
Copper, Dissolved	**2.17**		H	0.318	2		ug/L	InvalidLabFlag (=)
Lead	**0.488**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)
Field ID: A2BMP0007S022								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**2.34**			0.318	2		ug/L	
Copper, Dissolved	**1.87**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**1.08**			0.118	1		ug/L	
Lead, Dissolved	**0.204**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)
Field ID: A2BMP0012S012								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.83**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.23**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**2.11**			0.118	1		ug/L	
Lead, Dissolved	**0.265**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)
Field ID: EVBMP0007S014								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**8.6**			0.318	2		ug/L	
Copper, Dissolved	**4.66**		H	0.318	2		ug/L	InvalidLabFlag (=)
Lead	**1.78**			0.118	1		ug/L	
Lead, Dissolved	**0.459**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)
Field ID: EVBMP0008S017								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.87**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.92**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.587**	J	J	0.118	1		ug/L	
Lead, Dissolved	**0.184**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)
Field ID: EVBMP0009S015								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.81**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.68**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.523**	J	J	0.118	1		ug/L	
Lead, Dissolved	**0.183**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-122824-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**E245.1**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0006S014	N	1			
A2BMP0007S022	N	1			
A2BMP0012S012	N	1			
EVBMP0007S014	N	1			
EVBMP0008S017	N	1			
EVBMP0009S015	SD	1			
EVBMP0009S015	N	1			
EVBMP0009S015	MS	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

All MS acceptance criteria were met. All SD acceptance criteria were met. All RPD acceptance criteria were met.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0006S014								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: A2BMP0007S022								
Mercury	0.000216	U		0.000124	0.0002		mg/L	CCB<RL (U)
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: A2BMP0012S012								
Mercury	0.000207	U		0.000124	0.0002		mg/L	CCB<RL (U)
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0007S014								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0008S017								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0009S015								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
CCB<RL	Continuing calibration blank concentration less than the reporting limit	Blank
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-122824-2**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**8290**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0006S014	N	1			
A2BMP0007S022	N	1			
A2BMP0012S012	N	1			
EVBMP0007S014	N	1			
EVBMP0008S017	N	1			
EVBMP0009S015	N	1			

1. Case Narrative / Items of Interest

The following items were noted: EMPC; LB<RL; LCSRPD

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, 2,3,4,6,7,8-HxCDF, 2,3,7,8-TCDF, OCDD, OCDF.

Blank Type	Blank ID	Analyte	Result	Report Limit	Lab Flag	Units	SDG
LB	MB 320-648634/1-A	1,2,3,4,6,7,8-HpCDD	2.204	50	J q	pg/L	570-122824
LB	MB 320-648634/1-A	1,2,3,4,6,7,8-HpCDF	1.814	50	J q	pg/L	570-122824
LB	MB 320-648634/1-A	1,2,3,4,7,8,9-HpCDF	1.801	50	J q	pg/L	570-122824
LB	MB 320-648634/1-A	1,2,3,4,7,8-HxCDD	2.653	50	J q	pg/L	570-122824
LB	MB 320-648634/1-A	1,2,3,4,7,8-HxCDF	1.058	50	J	pg/L	570-122824
LB	MB 320-648634/1-A	1,2,3,6,7,8-HxCDD	2.023	50	J	pg/L	570-122824
LB	MB 320-648634/1-A	1,2,3,6,7,8-HxCDF	0.8304	50	J q	pg/L	570-122824
LB	MB 320-648634/1-A	1,2,3,7,8,9-HxCDD	1.992	50	J	pg/L	570-122824
LB	MB 320-648634/1-A	1,2,3,7,8,9-HxCDF	1.06	50	J q	pg/L	570-122824
LB	MB 320-648634/1-A	OCDD	12.66	100	J	pg/L	570-122824
LB	MB 320-648634/1-A	OCDF	3.779	100	J	pg/L	570-122824
LB	MB 320-648859/1-A	1,2,3,4,6,7,8-HpCDD	2.555	50	J	pg/L	570-122824
LB	MB 320-648859/1-A	1,2,3,4,6,7,8-HpCDF	2.029	50	J	pg/L	570-122824
LB	MB 320-648859/1-A	1,2,3,4,7,8,9-HpCDF	1.88	50	J	pg/L	570-122824
LB	MB 320-648859/1-A	1,2,3,4,7,8-HxCDD	2.52	50	J	pg/L	570-122824
LB	MB 320-648859/1-A	1,2,3,4,7,8-HxCDF	0.5844	50	J q	pg/L	570-122824
LB	MB 320-648859/1-A	1,2,3,6,7,8-HxCDD	1.41	50	J	pg/L	570-122824
LB	MB 320-648859/1-A	1,2,3,6,7,8-HxCDF	0.5536	50	J q	pg/L	570-122824

LB	MB 320-648859/1-A	1,2,3,7,8,9-HxCDD	1.854	50	J	pg/L	570-122824
LB	MB 320-648859/1-A	1,2,3,7,8,9-HxCDF	1.58	50	J	pg/L	570-122824
LB	MB 320-648859/1-A	2,3,4,6,7,8-HxCDF	1.011	50	J q	pg/L	570-122824
LB	MB 320-648859/1-A	2,3,7,8-TCDF	0.7002	10	J	pg/L	570-122824
LB	MB 320-648859/1-A	OCDD	7.272	100	J	pg/L	570-122824
LB	MB 320-648859/1-A	OCDF	3.334	100	J q	pg/L	570-122824

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG. All reported EMPC values were qualified as estimated non-detects

Matrix / Analyte	*Sample ID*	*LR Type*	*Result*	*Qualifier*	*Reason*
WATER	1,2,3,4,6,7,8-HpCDD				
	A2BMP0006S014		1.5 pg/L	UJ	EMPC
WATER	1,2,3,4,6,7,8-HpCDF				
	EVBMP0007S014		2.7 pg/L	UJ	EMPC
WATER	1,2,3,4,7,8,9-HpCDF				
	A2BMP0007S022		0.57 pg/L	UJ	EMPC
	EVBMP0007S014		0.38 pg/L	UJ	EMPC
	EVBMP0008S017		0.32 pg/L	UJ	EMPC
WATER	1,2,3,4,7,8-HxCDD				
	A2BMP0007S022		2.3 pg/L	UJ	EMPC
	A2BMP0012S012		1.9 pg/L	UJ	EMPC
	EVBMP0007S014		1.3 pg/L	UJ	EMPC
	EVBMP0009S015		1.7 pg/L	UJ	EMPC
WATER	1,2,3,6,7,8-HxCDD				
	A2BMP0012S012		4.5 pg/L	UJ	EMPC
	EVBMP0008S017		0.86 pg/L	UJ	EMPC
	EVBMP0009S015		0.96 pg/L	UJ	EMPC
WATER	1,2,3,7,8,9-HxCDD				
	A2BMP0007S022		2.1 pg/L	UJ	EMPC
	A2BMP0012S012		2.9 pg/L	UJ	EMPC
	EVBMP0008S017		0.49 pg/L	UJ	EMPC
WATER	1,2,3,7,8,9-HxCDF				
	EVBMP0008S017		0.43 pg/L	UJ	EMPC
WATER	1,2,3,7,8-PeCDD				
	EVBMP0008S017		0.29 pg/L	UJ	EMPC
WATER	OCDD				
	A2BMP0006S014		15 pg/L	UJ	EMPC
WATER	OCDF				
	A2BMP0006S014		1.9 pg/L	UJ	EMPC

4. Laboratory Control Sample

All recovery acceptance criteria were met. These LCS RPD analytes were out of control: 13C-OCDF (BS), OCDF (BS).

5. Surrogates

All acceptance criteria were met.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Method Blanks: These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, 2,3,4,6,7,8-HxCDF, 2,3,7,8-TCDF, OCDD, OCDF.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0006S014								
1,2,3,4,6,7,8-HpCDD	1.5	UJ	J q B	0.033	48		pg/L	LB<RL (U)
	1.5	UJ	J q B	0.033	48		pg/L	EMPC (UJ)
	1.5	UJ	J q B	0.033	48		pg/L	RemoveBLabFlag (J)
1,2,3,4,6,7,8-HpCDF	1.1	U	J B	0.087	48		pg/L	RemoveBLabFlag (J)
	1.1	U	J B	0.087	48		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	0.1	U	U	0.1	48		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDD	0.049	U	U	0.049	48		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDF	0.036	U	U	0.036	48		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	0.05	U	U	0.05	48		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDF	0.036	U	U	0.036	48		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.045	U	U	0.045	48		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDF	0.038	U	U	0.038	48		pg/L	LB<RL (none)
1,2,3,7,8-PeCDD	0.15	U	U	0.15	48		pg/L	
1,2,3,7,8-PeCDF	0.066	U	U	0.066	48		pg/L	
2,3,4,6,7,8-HxCDF	0.034	U	U	0.034	48		pg/L	
2,3,4,7,8-PeCDF	0.072	U	U	0.072	48		pg/L	
2,3,7,8-TCDD	0.21	U	U	0.21	9.6		pg/L	
2,3,7,8-TCDF	0.025	U	U	0.025	9.6		pg/L	
OCDD	15	UJ	J q B	0.092	96		pg/L	EMPC (UJ)
	15	UJ	J q B	0.092	96		pg/L	RemoveBLabFlag (J)
	15	UJ	J q B	0.092	96		pg/L	LB<RL (U)
OCDF	1.9	UJ	J q B	0.12	96		pg/L	EMPC (UJ)
	1.9	UJ	J q B	0.12	96		pg/L	LB<RL (U)
	1.9	UJ	J q B	0.12	96		pg/L	LCSRPD (J)
	1.9	UJ	J q B	0.12	96		pg/L	RemoveBLabFlag (J)
Field ID: A2BMP0007S022								
1,2,3,4,6,7,8-HpCDD	**56**		B	0.41	49		pg/L	RemoveBLabFlag (=)
	56		B	0.41	49		pg/L	LB>MDL (None)
1,2,3,4,6,7,8-HpCDF	6.9	U	J B	0.13	49		pg/L	RemoveBLabFlag (J)
	6.9	U	J B	0.13	49		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	0.57	UJ	J q B	0.15	49		pg/L	EMPC (UJ)
	0.57	UJ	J q B	0.15	49		pg/L	RemoveBLabFlag (J)
	0.57	UJ	J q B	0.15	49		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDD	2.3	UJ	J q B	0.092	49		pg/L	EMPC (UJ)
	2.3	UJ	J q B	0.092	49		pg/L	RemoveBLabFlag (J)
	2.3	UJ	J q B	0.092	49		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.073	U	U	0.073	49		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	2.6	U	J B	0.092	49		pg/L	RemoveBLabFlag (J)
	2.6	U	J B	0.092	49		pg/L	LB<RL (U)
1,2,3,6,7,8-HxCDF	0.073	U	U	0.073	49		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	2.1	UJ	J q B	0.084	49		pg/L	EMPC (UJ)
	2.1	UJ	J q B	0.084	49		pg/L	RemoveBLabFlag (J)
	2.1	UJ	J q B	0.084	49		pg/L	LB<RL (U)
1,2,3,7,8,9-HxCDF	0.082	U	U	0.082	49		pg/L	LB<RL (none)
1,2,3,7,8-PeCDD	0.11	U	U	0.11	49		pg/L	
1,2,3,7,8-PeCDF	0.058	U	U	0.058	49		pg/L	

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0007S022								
2,3,4,6,7,8-HxCDF	0.067	U	U	0.067	49		pg/L	
2,3,4,7,8-PeCDF	0.065	U	U	0.065	49		pg/L	
2,3,7,8-TCDD	0.26	U	U	0.26	9.8		pg/L	
2,3,7,8-TCDF	0.024	U	U	0.024	9.8		pg/L	
OCDD	**810**		B	1.3	98		pg/L	RemoveBLabFlag (=)
	810		B	1.3	98		pg/L	LB>MDL (None)
OCDF	**22**	J	J B	0.3	98		pg/L	LCSRPD (J)
	22	J	J B	0.3	98		pg/L	RemoveBLabFlag (J)
	22	J	J B	0.3	98		pg/L	LB>MDL (None)
Field ID: A2BMP0012S012								
1,2,3,4,6,7,8-HpCDD	**92**		B	0.46	49		pg/L	RemoveBLabFlag (=)
	92		B	0.46	49		pg/L	LB>MDL (None)
1,2,3,4,6,7,8-HpCDF	**18**	J	J B	0.26	49		pg/L	RemoveBLabFlag (J)
	18	J	J B	0.26	49		pg/L	LB>MDL (None)
1,2,3,4,7,8,9-HpCDF	1.2	U	J B	0.29	49		pg/L	RemoveBLabFlag (J)
	1.2	U	J B	0.29	49		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDD	1.9	UJ	J q B	0.18	49		pg/L	EMPC (UJ)
	1.9	UJ	J q B	0.18	49		pg/L	RemoveBLabFlag (J)
	1.9	UJ	J q B	0.18	49		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.19	U	U	0.19	49		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	4.5	UJ	J q B	0.16	49		pg/L	RemoveBLabFlag (J)
	4.5	UJ	J q B	0.16	49		pg/L	LB<RL (U)
	4.5	UJ	J q B	0.16	49		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDF	0.19	U	U	0.19	49		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	2.9	UJ	J q B	0.16	49		pg/L	RemoveBLabFlag (J)
	2.9	UJ	J q B	0.16	49		pg/L	LB<RL (U)
	2.9	UJ	J q B	0.16	49		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDF	0.21	U	U	0.21	49		pg/L	LB<RL (none)
1,2,3,7,8-PeCDD	0.16	U	U	0.16	49		pg/L	
1,2,3,7,8-PeCDF	0.055	U	U	0.055	49		pg/L	
2,3,4,6,7,8-HxCDF	0.17	U	U	0.17	49		pg/L	
2,3,4,7,8-PeCDF	0.07	U	U	0.07	49		pg/L	
2,3,7,8-TCDD	0.36	U	U	0.36	9.8		pg/L	
2,3,7,8-TCDF	0.055	U	U	0.055	9.8		pg/L	
OCDD	**800**		B	1.2	98		pg/L	RemoveBLabFlag (=)
	800		B	1.2	98		pg/L	LB>MDL (None)
OCDF	**41**	J	J B	0.36	98		pg/L	LCSRPD (J)
	41	J	J B	0.36	98		pg/L	RemoveBLabFlag (J)
	41	J	J B	0.36	98		pg/L	LB>MDL (None)
Field ID: EVBMP0007S014								
1,2,3,4,6,7,8-HpCDD	**12**	J	J B	0.15	50		pg/L	LB>MDL (None)
	12	J	J B	0.15	50		pg/L	RemoveBLabFlag (J)
1,2,3,4,6,7,8-HpCDF	2.7	UJ	J q B	0.066	50		pg/L	RemoveBLabFlag (J)
	2.7	UJ	J q B	0.066	50		pg/L	LB<RL (U)
	2.7	UJ	J q B	0.066	50		pg/L	EMPC (UJ)
1,2,3,4,7,8,9-HpCDF	0.38	UJ	J q B	0.082	50		pg/L	RemoveBLabFlag (J)
	0.38	UJ	J q B	0.082	50		pg/L	LB<RL (U)
	0.38	UJ	J q B	0.082	50		pg/L	EMPC (UJ)
1,2,3,4,7,8-HxCDD	1.3	UJ	J q B	0.032	50		pg/L	EMPC (UJ)
	1.3	UJ	J q B	0.032	50		pg/L	RemoveBLabFlag (J)
	1.3	UJ	J q B	0.032	50		pg/L	LB<RL (U)

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S014								
1,2,3,4,7,8-HxCDF	0.053	U	U	0.053	50		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	0.031	U	U	0.031	50		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDF	0.049	U	U	0.049	50		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.029	U	U	0.029	50		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDF	0.05	U	U	0.05	50		pg/L	LB<RL (none)
1,2,3,7,8-PeCDD	0.13	U	U	0.13	50		pg/L	
1,2,3,7,8-PeCDF	0.041	U	U	0.041	50		pg/L	
2,3,4,6,7,8-HxCDF	0.044	U	U	0.044	50		pg/L	
2,3,4,7,8-PeCDF	0.048	U	U	0.048	50		pg/L	
2,3,7,8-TCDD	0.28	U	U	0.28	10		pg/L	
2,3,7,8-TCDF	0.038	U	U	0.038	10		pg/L	
OCDD	**180**		B	0.32	100		pg/L	LB>MDL (None)
	180		B	0.32	100		pg/L	RemoveBLabFlag (=)
OCDF	11	U	J B	0.21	100		pg/L	LCSRPD (J)
	11	U	J B	0.21	100		pg/L	RemoveBLabFlag (J)
	11	U	J B	0.21	100		pg/L	LB<RL (U)
Field ID: EVBMP0008S017								
1,2,3,4,6,7,8-HpCDD	**16**	J	J B	0.14	51		pg/L	RemoveBLabFlag (J)
	16	J	J B	0.14	51		pg/L	LB>MDL (None)
1,2,3,4,6,7,8-HpCDF	4.9	U	J B	0.12	51		pg/L	RemoveBLabFlag (J)
	4.9	U	J B	0.12	51		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	0.32	UJ	J B q	0.11	51		pg/L	RemoveBLabFlag (J)
	0.32	UJ	J B q	0.11	51		pg/L	LB<RL (U)
	0.32	UJ	J B q	0.11	51		pg/L	EMPC (UJ)
1,2,3,4,7,8-HxCDD	2	U	J B	0.059	51		pg/L	RemoveBLabFlag (J)
	2	U	J B	0.059	51		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.055	U	U	0.055	51		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	0.86	UJ	J B q	0.058	51		pg/L	RemoveBLabFlag (J)
	0.86	UJ	J B q	0.058	51		pg/L	LB<RL (U)
	0.86	UJ	J B q	0.058	51		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDF	0.052	U	U	0.052	51		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.49	UJ	J B q	0.053	51		pg/L	LB<RL (U)
	0.49	UJ	J B q	0.053	51		pg/L	EMPC (UJ)
	0.49	UJ	J B q	0.053	51		pg/L	RemoveBLabFlag (J)
1,2,3,7,8,9-HxCDF	0.43	UJ	J B q	0.042	51		pg/L	RemoveBLabFlag (J)
	0.43	UJ	J B q	0.042	51		pg/L	LB<RL (U)
	0.43	UJ	J B q	0.042	51		pg/L	EMPC (UJ)
1,2,3,7,8-PeCDD	0.29	UJ	J q	0.071	51		pg/L	EMPC (UJ)
1,2,3,7,8-PeCDF	0.022	U	U	0.022	51		pg/L	
2,3,4,6,7,8-HxCDF	0.041	U	U	0.041	51		pg/L	LB<RL (none)
2,3,4,7,8-PeCDF	0.026	U	U	0.026	51		pg/L	
2,3,7,8-TCDD	0.11	U	U	0.11	10		pg/L	
2,3,7,8-TCDF	0.0078	U	U	0.0078	10		pg/L	LB<RL (none)
OCDD	**190**		B	0.3	100		pg/L	RemoveBLabFlag (=)
	190		B	0.3	100		pg/L	LB>MDL (None)
OCDF	16	U	J B	0.12	100		pg/L	LCSRPD (J)
	16	U	J B	0.12	100		pg/L	RemoveBLabFlag (J)
	16	U	J B	0.12	100		pg/L	LB<RL (U)
Field ID: EVBMP0009S015								
1,2,3,4,6,7,8-HpCDD	**21**	J	J B	0.22	51		pg/L	RemoveBLabFlag (J)
	21	J	J B	0.22	51		pg/L	LB>MDL (None)

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0009S015								
1,2,3,4,6,7,8-HpCDF	5.2	U	J B	0.12	51		pg/L	RemoveBLabFlag (J)
	5.2	U	J B	0.12	51		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	0.13	U	U	0.13	51		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDD	1.7	UJ	J B q	0.072	51		pg/L	RemoveBLabFlag (J)
	1.7	UJ	J B q	0.072	51		pg/L	EMPC (UJ)
	1.7	UJ	J B q	0.072	51		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.041	U	U	0.041	51		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	0.96	UJ	J B q	0.07	51		pg/L	RemoveBLabFlag (J)
	0.96	UJ	J B q	0.07	51		pg/L	LB<RL (U)
	0.96	UJ	J B q	0.07	51		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDF	0.04	U	U	0.04	51		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.95	U	J B	0.065	51		pg/L	RemoveBLabFlag (J)
	0.95	U	J B	0.065	51		pg/L	LB<RL (U)
1,2,3,7,8,9-HxCDF	0.036	U	U	0.036	51		pg/L	LB<RL (none)
1,2,3,7,8-PeCDD	0.057	U	U	0.057	51		pg/L	
1,2,3,7,8-PeCDF	0.019	U	U	0.019	51		pg/L	
2,3,4,6,7,8-HxCDF	0.2	U	J B	0.035	51		pg/L	LB<RL (U)
	0.2	U	J B	0.035	51		pg/L	RemoveBLabFlag (J)
2,3,4,7,8-PeCDF	0.021	U	U	0.021	51		pg/L	
2,3,7,8-TCDD	0.1	U	U	0.1	10		pg/L	
2,3,7,8-TCDF	0.0084	U	U	0.0084	10		pg/L	LB<RL (none)
OCDD	**270**		B	0.25	100		pg/L	RemoveBLabFlag (=)
	270		B	0.25	100		pg/L	LB>MDL (None)
OCDF	**18**	J	J B	0.14	100		pg/L	LB>MDL (None)
	18	J	J B	0.14	100		pg/L	LCSRPD (J)
	18	J	J B	0.14	100		pg/L	RemoveBLabFlag (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
LB<RL	Laboratory blank contamination less than the reporting limit	Blank
LB>MDL	Laboratory blank contamination greater than the method detection limit	Blank
RemoveBLabFlag	Lab B flag removed - analyte not detected in sample	Blank
LCSRPD	LCS RPD criteria exceeded	LaboratoryControlSample
EMPC	Estimated Maximum Possible Concentration	Matrix

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-122824-2**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**D4464(M)**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0006S014	N	1			
A2BMP0007S022	N	1			
A2BMP0012S012	N	1			
EVBMP0007S014	N	1			
EVBMP0008S017	N	1			
EVBMP0009S015	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

No spikes in this SDG. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Laboratory Control Sample: No spikes in this SDG. No spike dupes in this SDG.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0006S014								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: A2BMP0007S022								
Clay (less than 0.00391 mm)	**14.35**			0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	**82.8**			0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	**97.15**			0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	**2.85**			0.01	0.01		PERCENT	
Field ID: A2BMP0012S012								
Clay (less than 0.00391 mm)	**9.13**			0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	**2.02**			0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	**69.48**			0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	**78.61**			0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	**19.36**			0.01	0.01		PERCENT	
Field ID: EVBMP0007S014								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0008S017								
Clay (less than 0.00391 mm)	**11.23**			0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S017								
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	**85.11**			0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	**96.34**			0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	**3.66**			0.01	0.01		PERCENT	
Field ID: EVBMP0009S015								
Clay (less than 0.00391 mm)	**6.26**			0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	**70.64**			0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	**76.9**			0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	**23.1**			0.01	0.01		PERCENT	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-123377-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**A2130B**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0008S018	N	1			
EVBMP0009S016	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S018								
Turbidity	**20**			0.05	0.05		NTU	
Field ID: EVBMP0009S016								
Turbidity	**1.8**			0.05	0.05		NTU	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-123377-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**A2540D**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0006S015	N	1			
A2BMP0007S023	N	1			
EVBMP0007S015	N	1			
EVBMP0008S018	N	1			
EVBMP0009S016	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0006S015								
Total Suspended Solids	**2.3**			0.829	1		mg/L	
Field ID: A2BMP0007S023								
Total Suspended Solids	**3.1**			0.829	1		mg/L	
Field ID: EVBMP0007S015								
Total Suspended Solids	**80**			1.66	2		mg/L	
Field ID: EVBMP0008S018								
Total Suspended Solids	**13.7**			0.829	1		mg/L	
Field ID: EVBMP0009S016								
Total Suspended Solids	0.829	U	U	0.829	1		mg/L	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-123377-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**E200.8**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0006S015	N	1			
A2BMP0007S023	N	1			
EVBMP0007S015	N	1			
EVBMP0008S018	N	1			
EVBMP0009S016	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0006S015								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**4.21**			0.318	2		ug/L	
Copper, Dissolved	**4.88**		H	0.318	2		ug/L	InvalidLabFlag (=)
Lead	**0.907**	J	J	0.118	1		ug/L	
Lead, Dissolved	**0.286**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)
Field ID: A2BMP0007S023								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**2.07**			0.318	2		ug/L	
Copper, Dissolved	**1.5**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.548**	J	J	0.118	1		ug/L	
Lead, Dissolved	**0.184**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)
Field ID: EVBMP0007S015								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**4.01**			0.318	2		ug/L	
Copper, Dissolved	**1.96**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**1.47**			0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)
Field ID: EVBMP0008S018								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**2.22**			0.318	2		ug/L	
Copper, Dissolved	**1.45**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.631**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)
Field ID: EVBMP0009S016								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**2.82**			0.318	2		ug/L	
Copper, Dissolved	**1.35**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.457**	J	J	0.118	1		ug/L	
Lead, Dissolved	**0.144**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-123377-1**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**E245.1**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0006S015	N	1			
A2BMP0006S015MS	MS	1			
A2BMP0006S015SD	SD	1			
A2BMP0007S023	N	1			
EVBMP0007S015	N	1			
EVBMP0008S018	N	1			
EVBMP0009S016	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

All MS acceptance criteria were met. All SD acceptance criteria were met. All RPD acceptance criteria were met.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0006S015								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: A2BMP0007S023								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0007S015								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0008S018								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0009S016								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891

Data Quality Evaluation

SDG:	**570-123377-2**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**8290**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0006S015	N	1			
A2BMP0007S023	N	1			
EVBMP0007S015	N	1			
EVBMP0008S018	N	1			
EVBMP0009S016	N	1			

1. Case Narrative / Items of Interest

The following items wefre noted: EMPC; LB<RL; LCSRPD

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, 1,2,3,7,8-PeCDF, 2,3,4,6,7,8-HxCDF, 2,3,4,7,8-PeCDF, OCDD, OCDF.

Blank Type	Blank ID	Analyte	Result	Report Limit	Lab Flag	Units	SDG
LB	MB 320-649403/1-A	1,2,3,4,6,7,8-HpCDD	2.866	50	J q	pg/L	570-123377
LB	MB 320-649403/1-A	1,2,3,4,6,7,8-HpCDF	2.196	50	J	pg/L	570-123377
LB	MB 320-649403/1-A	1,2,3,4,7,8,9-HpCDF	1.422	50	J q	pg/L	570-123377
LB	MB 320-649403/1-A	1,2,3,4,7,8-HxCDD	2.503	50	J	pg/L	570-123377
LB	MB 320-649403/1-A	1,2,3,4,7,8-HxCDF	1.096	50	J q	pg/L	570-123377
LB	MB 320-649403/1-A	1,2,3,6,7,8-HxCDD	1.699	50	J	pg/L	570-123377
LB	MB 320-649403/1-A	1,2,3,6,7,8-HxCDF	1.171	50	J q	pg/L	570-123377
LB	MB 320-649403/1-A	1,2,3,7,8,9-HxCDD	1.946	50	J q	pg/L	570-123377
LB	MB 320-649403/1-A	1,2,3,7,8,9-HxCDF	1.484	50	J	pg/L	570-123377
LB	MB 320-649403/1-A	OCDD	26.06	100	J	pg/L	570-123377
LB	MB 320-649403/1-A	OCDF	4.891	100	J	pg/L	570-123377
LB	MB 320-649887/1-A	1,2,3,4,6,7,8-HpCDD	2.369	50	J	pg/L	570-123377
LB	MB 320-649887/1-A	1,2,3,4,6,7,8-HpCDF	1.167	50	J q	pg/L	570-123377
LB	MB 320-649887/1-A	1,2,3,4,7,8,9-HpCDF	0.6639	50	J q	pg/L	570-123377
LB	MB 320-649887/1-A	1,2,3,4,7,8-HxCDD	2.269	50	J	pg/L	570-123377
LB	MB 320-649887/1-A	1,2,3,4,7,8-HxCDF	0.6275	50	J	pg/L	570-123377
LB	MB 320-649887/1-A	1,2,3,6,7,8-HxCDD	0.4788	50	J q	pg/L	570-123377
LB	MB 320-649887/1-A	1,2,3,6,7,8-HxCDF	0.5117	50	J	pg/L	570-123377
LB	MB 320-649887/1-A	1,2,3,7,8,9-HxCDD	0.8502	50	J	pg/L	570-123377

LB	MB 320-649887/1-A	1,2,3,7,8,9-HxCDF	0.9081	50	J	pg/L	570-123377
LB	MB 320-649887/1-A	1,2,3,7,8-PeCDF	0.242	50	J q	pg/L	570-123377
LB	MB 320-649887/1-A	2,3,4,6,7,8-HxCDF	0.5009	50	J	pg/L	570-123377
LB	MB 320-649887/1-A	2,3,4,7,8-PeCDF	0.3176	50	J q	pg/L	570-123377
LB	MB 320-649887/1-A	OCDD	28.18	100	J	pg/L	570-123377
LB	MB 320-649887/1-A	OCDF	3.031	100	J	pg/L	570-123377

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG. All reported EMPC values were qualified as estimated non-detects

Matrix / Analyte	*Sample ID*	*LR Type*	*Result*	*Qualifier*	*Reason*
WATER	1,2,3,4,6,7,8-HpCDF				
	A2BMP0006S015		0.87 pg/L	UJ	EMPC
	A2BMP0007S023		1.4 pg/L	UJ	EMPC
	EVBMP0008S018		1.2 pg/L	UJ	EMPC
WATER	1,2,3,4,7,8,9-HpCDF				
	A2BMP0006S015		0.28 pg/L	UJ	EMPC
WATER	1,2,3,4,7,8-HxCDD				
	A2BMP0007S023		1.3 pg/L	UJ	EMPC
	EVBMP0007S015		1.8 pg/L	UJ	EMPC
	EVBMP0009S016		2 pg/L	UJ	EMPC
WATER	1,2,3,6,7,8-HxCDD				
	A2BMP0007S023		0.45 pg/L	UJ	EMPC
	EVBMP0009S016		1.8 pg/L	UJ	EMPC
WATER	1,2,3,6,7,8-HxCDF				
	EVBMP0009S016		0.58 pg/L	UJ	EMPC
WATER	1,2,3,7,8,9-HxCDD				
	A2BMP0007S023		0.3 pg/L	UJ	EMPC
	EVBMP0007S015		0.4 pg/L	UJ	EMPC
	EVBMP0009S016		0.95 pg/L	UJ	EMPC
WATER	OCDF				
	A2BMP0006S015		2.1 pg/L	UJ	EMPC
	A2BMP0007S023		4.5 pg/L	UJ	EMPC
	EVBMP0007S015		7.6 pg/L	UJ	EMPC

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

These surrogates were out of control: 13C-OCDF (MB 320-649887/1-A). Associated with QC sample only, no flagging applied.

Field ID	LabsampleID	LowerLimit	UpperLimit	Result	Surrogate
MB 320-649887/1-A	MB 320-649887/1-	60	150	55	13C-OCDF

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Method Blanks: These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, 1,2,3,7,8-PeCDF, 2,3,4,6,7,8-HxCDF, 2,3,4,7,8-PeCDF, OCDD, OCDF.
Surrogates: These surrogates were out of control: 13C-OCDF (MB 320-649887/1-A).
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0006S015								
1,2,3,4,6,7,8-HpCDD	2.1	U	J B	0.053	50		pg/L	LB<RL (U)
	2.1	U	J B	0.053	50		pg/L	InvalidLabFlag (J)
1,2,3,4,6,7,8-HpCDF	0.87	UJ	J q B	0.051	50		pg/L	LB<RL (U)
	0.87	UJ	J q B	0.051	50		pg/L	EMPC (UJ)
1,2,3,4,7,8,9-HpCDF	0.28	UJ	J q B	0.054	50		pg/L	LB<RL (U)
	0.28	UJ	J q B	0.054	50		pg/L	EMPC (UJ)
1,2,3,4,7,8-HxCDD	0.98	U	J B	0.042	50		pg/L	InvalidLabFlag (J)
	0.98	U	J B	0.042	50		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.034	U	U	0.034	50		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	0.04	U	U	0.04	50		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDF	0.034	U	U	0.034	50		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.037	U	U	0.037	50		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDF	0.029	U	U	0.029	50		pg/L	LB<RL (none)
1,2,3,7,8-PeCDD	0.064	U	U	0.064	50		pg/L	
1,2,3,7,8-PeCDF	0.022	U	U	0.022	50		pg/L	
2,3,4,6,7,8-HxCDF	0.029	U	U	0.029	50		pg/L	
2,3,4,7,8-PeCDF	0.025	U	U	0.025	50		pg/L	
2,3,7,8-TCDD	0.094	U	U	0.094	10		pg/L	
2,3,7,8-TCDF	0.011	U	U	0.011	10		pg/L	
OCDD	34	U	J B	0.096	100		pg/L	InvalidLabFlag (J)
	34	U	J B	0.096	100		pg/L	LB<RL (U)
OCDF	2.1	UJ	J q B	0.032	100		pg/L	LB<RL (U)
	2.1	UJ	J q B	0.032	100		pg/L	EMPC (UJ)
	2.1	UJ	J q B	0.032	100		pg/L	LCSRPD (J)
Field ID: A2BMP0007S023								
1,2,3,4,6,7,8-HpCDD	9.4	U	J B	0.073	49		pg/L	LB<RL (U)
	9.4	U	J B	0.073	49		pg/L	InvalidLabFlag (J)
1,2,3,4,6,7,8-HpCDF	1.4	UJ	J q B	0.048	49		pg/L	LB<RL (U)
	1.4	UJ	J q B	0.048	49		pg/L	EMPC (UJ)
1,2,3,4,7,8,9-HpCDF	0.051	U	U	0.051	49		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDD	1.3	UJ	J q B	0.056	49		pg/L	EMPC (UJ)
	1.3	UJ	J q B	0.056	49		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.035	U	U	0.035	49		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	0.45	UJ	J q B	0.053	49		pg/L	EMPC (UJ)
	0.45	UJ	J q B	0.053	49		pg/L	LB<RL (U)
1,2,3,6,7,8-HxCDF	0.034	U	U	0.034	49		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.3	UJ	J q B	0.05	49		pg/L	LB<RL (U)
	0.3	UJ	J q B	0.05	49		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDF	0.033	U	U	0.033	49		pg/L	LB<RL (none)
1,2,3,7,8-PeCDD	0.081	U	U	0.081	49		pg/L	
1,2,3,7,8-PeCDF	0.037	U	U	0.037	49		pg/L	
2,3,4,6,7,8-HxCDF	0.033	U	U	0.033	49		pg/L	
2,3,4,7,8-PeCDF	0.044	U	U	0.044	49		pg/L	
2,3,7,8-TCDD	0.11	U	U	0.11	9.7		pg/L	
2,3,7,8-TCDF	0.0094	U	U	0.0094	9.7		pg/L	
OCDD	**140**		B	0.18	97		pg/L	LB>MDL (None)

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0007S023								
	140		B	0.18	97		pg/L	InvalidLabFlag (=)
OCDF	4.5	UJ	J q B	0.032	97		pg/L	EMPC (UJ)
	4.5	UJ	J q B	0.032	97		pg/L	LCSRPD (J)
	4.5	UJ	J q B	0.032	97		pg/L	LB<RL (U)
Field ID: EVBMP0007S015								
1,2,3,4,6,7,8-HpCDD	8.6	U	J B	0.083	51		pg/L	InvalidLabFlag (J)
	8.6	U	J B	0.083	51		pg/L	LB<RL (U)
1,2,3,4,6,7,8-HpCDF	1.9	U	J B	0.1	51		pg/L	InvalidLabFlag (J)
	1.9	U	J B	0.1	51		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	0.11	U	U	0.11	51		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDD	1.8	UJ	J q B	0.049	51		pg/L	LB<RL (U)
	1.8	UJ	J q B	0.049	51		pg/L	EMPC (UJ)
1,2,3,4,7,8-HxCDF	0.033	U	U	0.033	51		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	0.046	U	U	0.046	51		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDF	0.032	U	U	0.032	51		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.4	UJ	J q B	0.043	51		pg/L	LB<RL (U)
	0.4	UJ	J q B	0.043	51		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDF	0.031	U	U	0.031	51		pg/L	LB<RL (none)
1,2,3,7,8-PeCDD	0.11	U	U	0.11	51		pg/L	
1,2,3,7,8-PeCDF	0.028	U	U	0.028	51		pg/L	
2,3,4,6,7,8-HxCDF	0.029	U	U	0.029	51		pg/L	
2,3,4,7,8-PeCDF	0.03	U	U	0.03	51		pg/L	
2,3,7,8-TCDD	0.14	U	U	0.14	10		pg/L	
2,3,7,8-TCDF	0.0072	U	U	0.0072	10		pg/L	
OCDD	80	U	J B	0.12	100		pg/L	LB<RL (U)
	80	U	J B	0.12	100		pg/L	InvalidLabFlag (J)
OCDF	7.6	UJ	J q B	0.12	100		pg/L	EMPC (UJ)
	7.6	UJ	J q B	0.12	100		pg/L	LCSRPD (J)
	7.6	UJ	J q B	0.12	100		pg/L	LB<RL (U)
Field ID: EVBMP0008S018								
1,2,3,4,6,7,8-HpCDD	5.1	U	J B	0.075	51		pg/L	InvalidLabFlag (J)
	5.1	U	J B	0.075	51		pg/L	LB<RL (U)
1,2,3,4,6,7,8-HpCDF	1.2	UJ	J q B	0.053	51		pg/L	LB<RL (U)
	1.2	UJ	J q B	0.053	51		pg/L	EMPC (UJ)
1,2,3,4,7,8,9-HpCDF	0.056	U	U	0.056	51		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDD	1.7	U	J B	0.041	51		pg/L	LB<RL (U)
	1.7	U	J B	0.041	51		pg/L	InvalidLabFlag (J)
1,2,3,4,7,8-HxCDF	0.027	U	U	0.027	51		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	0.041	U	U	0.041	51		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDF	0.027	U	U	0.027	51		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.037	U	U	0.037	51		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDF	0.025	U	U	0.025	51		pg/L	LB<RL (none)
1,2,3,7,8-PeCDD	0.065	U	U	0.065	51		pg/L	
1,2,3,7,8-PeCDF	0.031	U	U	0.031	51		pg/L	
2,3,4,6,7,8-HxCDF	0.025	U	U	0.025	51		pg/L	
2,3,4,7,8-PeCDF	0.035	U	U	0.035	51		pg/L	
2,3,7,8-TCDD	0.13	U	U	0.13	10		pg/L	
2,3,7,8-TCDF	0.013	U	U	0.013	10		pg/L	
OCDD	77	U	J B	0.13	100		pg/L	LB<RL (U)
	77	U	J B	0.13	100		pg/L	InvalidLabFlag (J)
OCDF	4.9	U	J B	0.06	100		pg/L	LB<RL (U)

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S018								
	4.9	U	J B	0.06	100		pg/L	LCSRPD (J)
	4.9	U	J B	0.06	100		pg/L	InvalidLabFlag (J)
Field ID: EVBMP0009S016								
1,2,3,4,6,7,8-HpCDD	**44**	J	J B	1.3	49		pg/L	InvalidLabFlag (J)
	44	J	J B	1.3	49		pg/L	LB>MDL (None)
1,2,3,4,6,7,8-HpCDF	**8.3**	J	J B	0.6	49		pg/L	InvalidLabFlag (J)
	8.3	J	J B	0.6	49		pg/L	LB>MDL (None)
1,2,3,4,7,8,9-HpCDF	1.5	U	J B	0.7	49		pg/L	InvalidLabFlag (J)
	1.5	U	J B	0.7	49		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDD	2	UJ	J q B	0.42	49		pg/L	LB<RL (U)
	2	UJ	J q B	0.42	49		pg/L	EMPC (UJ)
1,2,3,4,7,8-HxCDF	0.81	U	J B	0.38	49		pg/L	InvalidLabFlag (J)
	0.81	U	J B	0.38	49		pg/L	LB<RL (U)
1,2,3,6,7,8-HxCDD	1.8	UJ	J q B	0.4	49		pg/L	LB<RL (U)
	1.8	UJ	J q B	0.4	49		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDF	0.58	UJ	J q B	0.34	49		pg/L	LB<RL (U)
	0.58	UJ	J q B	0.34	49		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDD	0.95	UJ	J q B	0.36	49		pg/L	LB<RL (U)
	0.95	UJ	J q B	0.36	49		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDF	0.8	U	J B	0.38	49		pg/L	InvalidLabFlag (J)
	0.8	U	J B	0.38	49		pg/L	LB<RL (U)
1,2,3,7,8-PeCDD	0.6	U	U	0.6	49		pg/L	
1,2,3,7,8-PeCDF	0.39	U	U	0.39	49		pg/L	LB<RL (none)
2,3,4,6,7,8-HxCDF	0.33	U	U	0.33	49		pg/L	LB<RL (none)
2,3,4,7,8-PeCDF	0.44	U	U	0.44	49		pg/L	LB<RL (none)
2,3,7,8-TCDD	1.2	U	U	1.2	9.9		pg/L	
2,3,7,8-TCDF	0.58	U	U	0.58	9.9		pg/L	
OCDD	**700**		B	5.9	99		pg/L	InvalidLabFlag (=)
	700		B	5.9	99		pg/L	LB>MDL (None)
OCDF	**51**	J	J B	2.1	99		pg/L	LB>MDL (None)
	51	J	J B	2.1	99		pg/L	InvalidLabFlag (J)
	51	J	J B	2.1	99		pg/L	LCSRPD (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
LB<RL	Laboratory blank contamination less than the reporting limit	Blank
LB>MDL	Laboratory blank contamination greater than the method detection limit	Blank
LCSRPD	LCS RPD criteria exceeded	LaboratoryControlSample
EMPC	Estimated Maximum Possible Concentration	Matrix
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-123377-2**	**Validator/Date:**	**mfesler**	**5/26/2023**
Method:	**D4464(M)**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
A2BMP0006S015	N	1			
A2BMP0007S023	N	1			
EVBMP0007S015	N	1			
EVBMP0008S018	N	1			
EVBMP0009S016	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

No spikes in this SDG. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Laboratory Control Sample: No spikes in this SDG. No spike dupes in this SDG.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: A2BMP0006S015								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: A2BMP0007S023								
Clay (less than 0.00391 mm)	**10.85**			0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	**89.15**			0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	**100**			0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0007S015								
Clay (less than 0.00391 mm)	**2.23**			0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	**9.46**			0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	**57.47**			0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	**19.21**			0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	**21.45**			0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	**11.63**			0.01	0.01		PERCENT	
Field ID: EVBMP0008S018								
Clay (less than 0.00391 mm)	**38.62**			0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	**62.38**			0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	**100**			0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0009S016								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0009S016								
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-124425-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**A2130B**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0008S019	N	1			
EVBMP0009S017	N	1			

1. Case Narrative / Items of Interest

The following item was noted: Hta>UCL

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

These NativeIDs exceeded holding time: EVBMP0008S019, EVBMP0009S017.

Field ID	LabsampleID	AnalysisDate	ExtractDate	Sample Date	Method Time	Actual HT
EVBMP0008S019	570-124425-2	1/18/2023		1/14/2023	2	4
EVBMP0009S017	570-124425-3	1/18/2023		1/14/2023	2	4

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Holding Time: These NativeIDs exceeded holding time: EVBMP0008S019, EVBMP0009S017.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S019								
Turbidity	**5.2**	J	H H3	0.05	0.05		NTU	HTa>UCL (J)
Field ID: EVBMP0009S017								
Turbidity	**1.3**	J	H H3	0.05	0.05		NTU	HTa>UCL (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
HTa>UCL	Holding time exceeded	HoldingTime

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-124425-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**A2540D**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S016	N	1			
EVBMP0008S019	N	1			
EVBMP0009S017	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S016								
Total Suspended Solids	**5**			1.66	2		mg/L	
Field ID: EVBMP0008S019								
Total Suspended Solids	**17.8**			1.38	1.67		mg/L	
Field ID: EVBMP0009S017								
Total Suspended Solids	**9.6**			0.829	1		mg/L	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-124425-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**E200.8**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S016	N	1			
EVBMP0008S019	N	1			
EVBMP0009S017	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S016								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.76**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.34**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.977**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)
Field ID: EVBMP0008S019								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**2.15**			0.318	2		ug/L	
Copper, Dissolved	**1.92**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.182**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)
Field ID: EVBMP0009S017								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.99**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.72**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.174**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-124425-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**E245.1**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S016	N	1			
EVBMP0007S016MS	MS	1			
EVBMP0007S016SD	SD	1			
EVBMP0008S019	N	1			
EVBMP0009S017	N	1			

1. Case Narrative / Items of Interest

The following item was noted: CCB<RL

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

All MS acceptance criteria were met. All SD acceptance criteria were met. All RPD acceptance criteria were met.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S016								
Mercury	0.000243	U		0.000124	0.0002		mg/L	CCB<RL (U)
Mercury, Dissolved	0.000553	U	H	0.000124	0.0002		mg/L	CCB<RL (U)
	0.000553	U	H	0.000124	0.0002		mg/L	InvalidLabFlag (=)
Field ID: EVBMP0008S019								
Mercury	0.000224	U		0.000124	0.0002		mg/L	CCB<RL (U)
Mercury, Dissolved	0.000929	U	H	0.000124	0.0002		mg/L	CCB<RL (U)
	0.000929	U	H	0.000124	0.0002		mg/L	InvalidLabFlag (=)
Field ID: EVBMP0009S017								
Mercury	0.000154	U	J	0.000124	0.0002		mg/L	CCB<RL (U)
Mercury, Dissolved	0.000573	U	H	0.000124	0.0002		mg/L	CCB<RL (U)
	0.000573	U	H	0.000124	0.0002		mg/L	InvalidLabFlag (=)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
CCB<RL	Continuing calibration blank concentration less than the reporting limit	Blank
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-124425-2**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**8290**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S016	N	1			
EVBMP0008S019	N	1			
EVBMP0009S017	N	1			

1. Case Narrative / Items of Interest

The following items were noted: EMPC; LB<RL; LCSRPD

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, 1,2,3,7,8-PeCDF, 2,3,4,6,7,8-HxCDF, 2,3,4,7,8-PeCDF, OCDD, OCDF.

Blank Type	Blank ID	Analyte	Result	Report Limit	Lab Flag	Units	SDG
LB	MB 320-649887/1-A	1,2,3,4,6,7,8-HpCDD	2.369	50	J	pg/L	570-124425
LB	MB 320-649887/1-A	1,2,3,4,6,7,8-HpCDF	1.167	50	J q	pg/L	570-124425
LB	MB 320-649887/1-A	1,2,3,4,7,8,9-HpCDF	0.6639	50	J q	pg/L	570-124425
LB	MB 320-649887/1-A	1,2,3,4,7,8-HxCDD	2.269	50	J	pg/L	570-124425
LB	MB 320-649887/1-A	1,2,3,4,7,8-HxCDF	0.6275	50	J	pg/L	570-124425
LB	MB 320-649887/1-A	1,2,3,6,7,8-HxCDD	0.4788	50	J q	pg/L	570-124425
LB	MB 320-649887/1-A	1,2,3,6,7,8-HxCDF	0.5117	50	J	pg/L	570-124425
LB	MB 320-649887/1-A	1,2,3,7,8,9-HxCDD	0.8502	50	J	pg/L	570-124425
LB	MB 320-649887/1-A	1,2,3,7,8,9-HxCDF	0.9081	50	J	pg/L	570-124425
LB	MB 320-649887/1-A	1,2,3,7,8-PeCDF	0.242	50	J q	pg/L	570-124425
LB	MB 320-649887/1-A	2,3,4,6,7,8-HxCDF	0.5009	50	J	pg/L	570-124425
LB	MB 320-649887/1-A	2,3,4,7,8-PeCDF	0.3176	50	J q	pg/L	570-124425
LB	MB 320-649887/1-A	OCDD	28.18	100	J	pg/L	570-124425
LB	MB 320-649887/1-A	OCDF	3.031	100	J	pg/L	570-124425

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG. All reported EMPC values were qualified as estimated non-detects

Matrix / Analyte	*Sample ID*	*LR Type*	*Result*	*Qualifier*	*Reason*
WATER	1,2,3,4,6,7,8-HpCDD				
	EVBMP0007S016		3.2 pg/L	UJ	EMPC
WATER	1,2,3,4,6,7,8-HpCDF				
	EVBMP0007S016		1.6 pg/L	UJ	EMPC
WATER	1,2,3,4,7,8,9-HpCDF				
	EVBMP0008S019		0.32 pg/L	UJ	EMPC
	EVBMP0009S017		0.62 pg/L	UJ	EMPC
WATER	1,2,3,4,7,8-HxCDD				
	EVBMP0007S016		2 pg/L	UJ	EMPC
	EVBMP0009S017		1.7 pg/L	UJ	EMPC
WATER	1,2,3,6,7,8-HxCDD				
	EVBMP0008S019		0.46 pg/L	UJ	EMPC
WATER	1,2,3,7,8,9-HxCDD				
	EVBMP0009S017		0.41 pg/L	UJ	EMPC
WATER	1,2,3,7,8,9-HxCDF				
	EVBMP0007S016		0.52 pg/L	UJ	EMPC
	EVBMP0008S019		0.3 pg/L	UJ	EMPC

4. Laboratory Control Sample

All recovery acceptance criteria were met. These LCS RPD analytes were out of control: 13C-OCDF (BS), OCDF (BS).

5. Surrogates

These surrogates were out of control: 13C-OCDF (MB 320-649887/1-A).

Field ID	LabsampleID	LowerLimit	UpperLimit	Result	Surrogate
MB 320-649887/1-A	MB 320-649887/1-	60	150	55	13C-OCDF

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Method Blanks: These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, 1,2,3,7,8-PeCDF, 2,3,4,6,7,8-HxCDF, 2,3,4,7,8-PeCDF, OCDD, OCDF.
Surrogates: These surrogates were out of control: 13C-OCDF (MB 320-649887/1-A).
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S016								
1,2,3,4,6,7,8-HpCDD	3.2	UJ	J q B	0.3	49		pg/L	EMPC (UJ)
	3.2	UJ	J q B	0.3	49		pg/L	LB<RL (U)
1,2,3,4,6,7,8-HpCDF	1.6	UJ	J q B	0.22	49		pg/L	LB<RL (U)
	1.6	UJ	J q B	0.22	49		pg/L	EMPC (UJ)
1,2,3,4,7,8,9-HpCDF	0.26	U	U	0.26	49		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDD	2	UJ	J q B	0.3	49		pg/L	LB<RL (U)
	2	UJ	J q B	0.3	49		pg/L	EMPC (UJ)
1,2,3,4,7,8-HxCDF	0.47	U	J B	0.29	49		pg/L	LB<RL (U)
	0.47	U	J B	0.29	49		pg/L	InvalidLabFlag (J)
1,2,3,6,7,8-HxCDD	0.3	U	U	0.3	49		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDF	0.27	U	U	0.27	49		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.26	U	U	0.26	49		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDF	0.52	UJ	J q B	0.31	49		pg/L	LB<RL (U)
	0.52	UJ	J q B	0.31	49		pg/L	EMPC (UJ)
1,2,3,7,8-PeCDD	0.48	U	U	0.48	49		pg/L	
1,2,3,7,8-PeCDF	0.35	U	U	0.35	49		pg/L	LB<RL (none)
2,3,4,6,7,8-HxCDF	0.37	U	J B	0.28	49		pg/L	InvalidLabFlag (J)
	0.37	U	J B	0.28	49		pg/L	LB<RL (U)
2,3,4,7,8-PeCDF	0.39	U	U	0.39	49		pg/L	LB<RL (none)
2,3,7,8-TCDD	0.89	U	U	0.89	9.8		pg/L	
2,3,7,8-TCDF	0.45	U	U	0.45	9.8		pg/L	
OCDD	36	U	J B	0.52	98		pg/L	InvalidLabFlag (J)
	36	U	J B	0.52	98		pg/L	LB<RL (U)
OCDF	3.3	U	J B	0.57	98		pg/L	InvalidLabFlag (J)
	3.3	U	J B	0.57	98		pg/L	LCSRPD (J)
	3.3	U	J B	0.57	98		pg/L	LB<RL (U)
Field ID: EVBMP0008S019								
1,2,3,4,6,7,8-HpCDD	4	U	J B	0.34	50		pg/L	InvalidLabFlag (J)
	4	U	J B	0.34	50		pg/L	LB<RL (U)
1,2,3,4,6,7,8-HpCDF	1.5	U	J B	0.17	50		pg/L	InvalidLabFlag (J)
	1.5	U	J B	0.17	50		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	0.32	UJ	J q B	0.19	50		pg/L	EMPC (UJ)
	0.32	UJ	J q B	0.19	50		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDD	2	U	J B	0.3	50		pg/L	InvalidLabFlag (J)
	2	U	J B	0.3	50		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.23	U	U	0.23	50		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	0.46	UJ	J q B	0.29	50		pg/L	LB<RL (U)
	0.46	UJ	J q B	0.29	50		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDF	0.22	U	U	0.22	50		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.26	U	U	0.26	50		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDF	0.3	UJ	J q B	0.24	50		pg/L	LB<RL (U)
	0.3	UJ	J q B	0.24	50		pg/L	EMPC (UJ)
1,2,3,7,8-PeCDD	0.58	U	U	0.58	50		pg/L	
1,2,3,7,8-PeCDF	0.34	U	U	0.34	50		pg/L	LB<RL (none)
2,3,4,6,7,8-HxCDF	0.35	U	J B	0.21	50		pg/L	InvalidLabFlag (J)
	0.35	U	J B	0.21	50		pg/L	LB<RL (U)

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S019								
2,3,4,7,8-PeCDF	0.39	U	U	0.39	50		pg/L	LB<RL (none)
2,3,7,8-TCDD	0.99	U	U	0.99	10		pg/L	
2,3,7,8-TCDF	0.39	U	U	0.39	10		pg/L	
OCDD	46	U	J B	1.3	100		pg/L	InvalidLabFlag (J)
	46	U	J B	1.3	100		pg/L	LB<RL (U)
OCDF	4.3	U	J B	0.7	100		pg/L	LCSRPD (J)
	4.3	U	J B	0.7	100		pg/L	LB<RL (U)
	4.3	U	J B	0.7	100		pg/L	InvalidLabFlag (J)
Field ID: EVBMP0009S017								
1,2,3,4,6,7,8-HpCDD	**37**	J	J B	1.1	48		pg/L	InvalidLabFlag (J)
	37	J	J B	1.1	48		pg/L	LB>MDL (None)
1,2,3,4,6,7,8-HpCDF	**6.4**	J	J B	0.42	48		pg/L	InvalidLabFlag (J)
	6.4	J	J B	0.42	48		pg/L	LB>MDL (None)
1,2,3,4,7,8,9-HpCDF	0.62	UJ	J q B	0.47	48		pg/L	EMPC (UJ)
	0.62	UJ	J q B	0.47	48		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDD	1.7	UJ	J q B	0.32	48		pg/L	EMPC (UJ)
	1.7	UJ	J q B	0.32	48		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.26	U	U	0.26	48		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	0.82	U	J B	0.3	48		pg/L	InvalidLabFlag (J)
	0.82	U	J B	0.3	48		pg/L	LB<RL (U)
1,2,3,6,7,8-HxCDF	0.24	U	U	0.24	48		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.41	UJ	J q B	0.28	48		pg/L	LB<RL (U)
	0.41	UJ	J q B	0.28	48		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDF	0.24	U	U	0.24	48		pg/L	LB<RL (none)
1,2,3,7,8-PeCDD	0.39	U	U	0.39	48		pg/L	
1,2,3,7,8-PeCDF	0.32	U	U	0.32	48		pg/L	LB<RL (none)
2,3,4,6,7,8-HxCDF	0.22	U	U	0.22	48		pg/L	LB<RL (none)
2,3,4,7,8-PeCDF	0.38	U	U	0.38	48		pg/L	LB<RL (none)
2,3,7,8-TCDD	0.92	U	U	0.92	9.7		pg/L	
2,3,7,8-TCDF	0.39	U	U	0.39	9.7		pg/L	
OCDD	**860**		B	6.2	97		pg/L	InvalidLabFlag (=)
	860		B	6.2	97		pg/L	LB>MDL (None)
OCDF	**44**	J	J B	1.1	97		pg/L	LB>MDL (None)
	44	J	J B	1.1	97		pg/L	InvalidLabFlag (J)
	44	J	J B	1.1	97		pg/L	LCSRPD (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
LB<RL	Laboratory blank contamination less than the reporting limit	Blank
LB>MDL	Laboratory blank contamination greater than the method detection limit	Blank
LCSRPD	LCS RPD criteria exceeded	LaboratoryControlSample
EMPC	Estimated Maximum Possible Concentration	Matrix
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-124425-2**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**D4464(M)**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S016	N	1			
EVBMP0008S019	N	1			
EVBMP0009S017	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

No spikes in this SDG. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Laboratory Control Sample: No spikes in this SDG. No spike dupes in this SDG.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S016								
Clay (less than 0.00391 mm)	**8.49**			0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	**91.05**			0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	**99.54**			0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	**0.46**			0.01	0.01		PERCENT	
Field ID: EVBMP0008S019								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0009S017								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-129355-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**A2130B**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0008S020	N	1			
EVBMP0009S018	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S020								
Turbidity	**3.2**			0.05	0.05		NTU	
Field ID: EVBMP0009S018								
Turbidity	**2.4**			0.05	0.05		NTU	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-129355-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**A2540D**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S017	N	1			
EVBMP0008S020	N	1			
EVBMP0009S018	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S017								
Total Suspended Solids	**3.4**			0.854	1.03		mg/L	
Field ID: EVBMP0008S020								
Total Suspended Solids	**2.2**			0.829	1		mg/L	
Field ID: EVBMP0009S018								
Total Suspended Solids	**1.8**			0.829	1		mg/L	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-129355-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**D4464(M)**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S017	N	1			
EVBMP0008S020	N	1			
EVBMP0009S018	N	1			
EVBMP0009S018	LR	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

All acceptance criteria were met.

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

No spikes in this SDG. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Laboratory Control Sample: No spikes in this SDG. No spike dupes in this SDG.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S017								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0008S020								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0009S018								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-129355-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**E200.8**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S017	N	1			
EVBMP0007S017MS	MS	1			
EVBMP0007S017SD	SD	1			
EVBMP0008S020	N	1			
EVBMP0009S018	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

All MS acceptance criteria were met. All SD acceptance criteria were met. All RPD acceptance criteria were met.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S017								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**4.8**			0.318	2		ug/L	
Copper, Dissolved	**3.57**		H	0.318	2		ug/L	InvalidLabFlag (=)
Lead	**0.641**	J	J	0.118	1		ug/L	
Lead, Dissolved	**0.228**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)
Field ID: EVBMP0008S020								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.76**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.64**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.159**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)
Field ID: EVBMP0009S018								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.72**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.67**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.191**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-129355-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**E245.1**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S017	N	1			
EVBMP0008S020	N	1			
EVBMP0009S018	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S017								
Mercury	0.000124	U	U ^+	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0008S020								
Mercury	0.000124	U	U ^+	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0009S018								
Mercury	0.000124	U	U ^+	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-129355-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**8290**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S017	N	1			
EVBMP0008S020	N	1			
EVBMP0009S018	N	1			

1. Case Narrative / Items of Interest

The following items were noted: EMPC; LB<RL

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,6,7,8-HxCDD, 1,2,3,7,8,9-HxCDD, OCDD, OCDF.

Blank Type	Blank ID	Analyte	Result	Report Limit	Lab Flag	Units	SDG
LB	MB 320-658620/1-A	1,2,3,4,6,7,8-HpCDD	3.053	50	J	pg/L	570-129355
LB	MB 320-658620/1-A	1,2,3,4,6,7,8-HpCDF	2.366	50	J q	pg/L	570-129355
LB	MB 320-658620/1-A	1,2,3,4,7,8,9-HpCDF	1.362	50	J	pg/L	570-129355
LB	MB 320-658620/1-A	1,2,3,4,7,8-HxCDD	1.773	50	J q	pg/L	570-129355
LB	MB 320-658620/1-A	1,2,3,6,7,8-HxCDD	0.8798	50	J q	pg/L	570-129355
LB	MB 320-658620/1-A	1,2,3,7,8,9-HxCDD	0.6884	50	J	pg/L	570-129355
LB	MB 320-658620/1-A	OCDD	12.12	100	J	pg/L	570-129355
LB	MB 320-658620/1-A	OCDF	4.403	100	J q	pg/L	570-129355

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG. All reported EMPC values were qualified as estimated non-detects

Matrix / Analyte	*Sample ID*	*LR Type*	*Result*	*Qualifier*	*Reason*
WATER	1,2,3,4,6,7,8-HpCDF				

WATER	1,2,3,4,6,7,8-HpCDF			
	EVBMP0009S018	1.1 pg/L	UJ	EMPC
WATER	1,2,3,4,7,8,9-HpCDF			
	EVBMP0007S017	0.98 pg/L	UJ	EMPC
	EVBMP0008S020	0.43 pg/L	UJ	EMPC
WATER	1,2,3,6,7,8-HxCDD			
	EVBMP0007S017	0.66 pg/L	UJ	EMPC
WATER	1,2,3,7,8,9-HxCDF			
	EVBMP0007S017	0.63 pg/L	UJ	EMPC
	EVBMP0009S018	0.58 pg/L	UJ	EMPC
WATER	OCDF			
	EVBMP0007S017	2.7 pg/L	UJ	EMPC
	EVBMP0008S020	3.2 pg/L	UJ	EMPC

4. Laboratory Control Sample

All acceptance criteria were met. No spike dupes in this SDG.

5. Surrogates

All acceptance criteria were met.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Method Blanks: These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,6,7,8-HxCDD, 1,2,3,7,8,9-HxCDD, OCDD, OCDF.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S017								
1,2,3,4,6,7,8-HpCDD	1.9	U	J B	0.042	50		pg/L	LB<RL (U)
	1.9	U	J B	0.042	50		pg/L	InvalidLabFlag (J)
1,2,3,4,6,7,8-HpCDF	0.82	U	J B	0.048	50		pg/L	InvalidLabFlag (J)
	0.82	U	J B	0.048	50		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	0.98	UJ	J q B	0.053	50		pg/L	LB<RL (U)
	0.98	UJ	J q B	0.053	50		pg/L	EMPC (UJ)
1,2,3,4,7,8-HxCDD	2	U	J B	0.036	50		pg/L	LB<RL (U)
	2	U	J B	0.036	50		pg/L	InvalidLabFlag (J)
1,2,3,4,7,8-HxCDF	0.047	U	U	0.047	50		pg/L	
1,2,3,6,7,8-HxCDD	0.66	UJ	J q B	0.036	50		pg/L	EMPC (UJ)
	0.66	UJ	J q B	0.036	50		pg/L	LB<RL (U)
1,2,3,6,7,8-HxCDF	0.047	U	U	0.047	50		pg/L	
1,2,3,7,8,9-HxCDD	0.033	U	U	0.033	50		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDF	0.63	UJ	J q	0.046	50		pg/L	EMPC (UJ)
1,2,3,7,8-PeCDD	0.082	U	U	0.082	50		pg/L	
1,2,3,7,8-PeCDF	0.039	U	U	0.039	50		pg/L	
2,3,4,6,7,8-HxCDF	0.044	U	U	0.044	50		pg/L	
2,3,4,7,8-PeCDF	0.045	U	U	0.045	50		pg/L	
2,3,7,8-TCDD	0.1	U	U	0.1	10		pg/L	
2,3,7,8-TCDF	0.007	U	U	0.007	10		pg/L	
OCDD	17	U	J B	0.11	100		pg/L	InvalidLabFlag (J)
	17	U	J B	0.11	100		pg/L	LB<RL (U)
OCDF	2.7	UJ	J q B	0.098	100		pg/L	LB<RL (U)
	2.7	UJ	J q B	0.098	100		pg/L	EMPC (UJ)
Field ID: EVBMP0008S020								
1,2,3,4,6,7,8-HpCDD	3.3	U	J B	0.074	50		pg/L	InvalidLabFlag (J)
	3.3	U	J B	0.074	50		pg/L	LB<RL (U)
1,2,3,4,6,7,8-HpCDF	1.2	U	J B	0.046	50		pg/L	LB<RL (U)
	1.2	U	J B	0.046	50		pg/L	InvalidLabFlag (J)
1,2,3,4,7,8,9-HpCDF	0.43	UJ	J q B	0.046	50		pg/L	LB<RL (U)
	0.43	UJ	J q B	0.046	50		pg/L	EMPC (UJ)
1,2,3,4,7,8-HxCDD	0.064	U	U	0.064	50		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDF	0.063	U	U	0.063	50		pg/L	
1,2,3,6,7,8-HxCDD	0.064	U	U	0.064	50		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDF	0.059	U	U	0.059	50		pg/L	
1,2,3,7,8,9-HxCDD	0.058	U	U	0.058	50		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDF	0.058	U	U	0.058	50		pg/L	
1,2,3,7,8-PeCDD	0.081	U	U	0.081	50		pg/L	
1,2,3,7,8-PeCDF	0.031	U	U	0.031	50		pg/L	
2,3,4,6,7,8-HxCDF	0.054	U	U	0.054	50		pg/L	
2,3,4,7,8-PeCDF	0.036	U	U	0.036	50		pg/L	
2,3,7,8-TCDD	0.15	U	U	0.15	10		pg/L	
2,3,7,8-TCDF	0.0099	U	U	0.0099	10		pg/L	
OCDD	56	U	J B	0.19	100		pg/L	InvalidLabFlag (J)
	56	U	J B	0.19	100		pg/L	LB<RL (U)
OCDF	3.2	UJ	J q B	0.1	100		pg/L	LB<RL (U)

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S020								
	3.2	UJ	J q B	0.1	100		pg/L	EMPC (UJ)
Field ID: EVBMP0009S018								
1,2,3,4,6,7,8-HpCDD	5.4	U	J B	0.15	48		pg/L	InvalidLabFlag (J)
	5.4	U	J B	0.15	48		pg/L	LB<RL (U)
1,2,3,4,6,7,8-HpCDF	1.1	UJ	J q B	0.056	48		pg/L	LB<RL (U)
	1.1	UJ	J q B	0.056	48		pg/L	EMPC (UJ)
1,2,3,4,7,8,9-HpCDF	0.059	U	U	0.059	48		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDD	1.6	U	J B	0.048	48		pg/L	LB<RL (U)
	1.6	U	J B	0.048	48		pg/L	InvalidLabFlag (J)
1,2,3,4,7,8-HxCDF	0.033	U	U	0.033	48		pg/L	
1,2,3,6,7,8-HxCDD	0.049	U	U	0.049	48		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDF	0.032	U	U	0.032	48		pg/L	
1,2,3,7,8,9-HxCDD	0.044	U	U	0.044	48		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDF	0.58	UJ	J q	0.032	48		pg/L	EMPC (UJ)
1,2,3,7,8-PeCDD	0.045	U	U	0.045	48		pg/L	
1,2,3,7,8-PeCDF	0.016	U	U	0.016	48		pg/L	
2,3,4,6,7,8-HxCDF	0.029	U	U	0.029	48		pg/L	
2,3,4,7,8-PeCDF	0.019	U	U	0.019	48		pg/L	
2,3,7,8-TCDD	0.097	U	U	0.097	9.6		pg/L	
2,3,7,8-TCDF	0.0055	U	U	0.0055	9.6		pg/L	
OCDD	**87**	J	J B	0.17	96		pg/L	InvalidLabFlag (J)
	87	J	J B	0.17	96		pg/L	LB>MDL (None)
OCDF	3.6	U	J B	0.092	96		pg/L	LB<RL (U)
	3.6	U	J B	0.092	96		pg/L	InvalidLabFlag (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
LB<RL	Laboratory blank contamination less than the reporting limit	Blank
LB>MDL	Laboratory blank contamination greater than the method detection limit	Blank
EMPC	Estimated Maximum Possible Concentration	Matrix
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-131083-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**A2130B**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0008S021	N	1			
EVBMP0009s019	N	1			

1. Case Narrative / Items of Interest

The following item was noted: Hta>UCL

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

These NativeIDs exceeded holding time: EVBMP0008S021, EVBMP0009s019.

Field ID	LabsampleID	AnalysisDate	ExtractDate	Sample Date	Method Time	Actual HT
EVBMP0008S021	570-131083-2	3/14/2023		3/11/2023	2	3
EVBMP0009s019	570-131083-3	3/14/2023		3/11/2023	2	3

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Holding Time: These NativeIDs exceeded holding time: EVBMP0008S021, EVBMP0009s019.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S021								
Turbidity	**1.9**	J	H H3	0.05	0.05		NTU	HTa>UCL (J)
Field ID: EVBMP0009s019								
Turbidity	**1.6**	J	H H3	0.05	0.05		NTU	HTa>UCL (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
HTa>UCL	Holding time exceeded	HoldingTime

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-131083-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**A2540D**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S018	N	1			
EVBMP0008S021	N	1			
EVBMP0009s019	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S018								
Total Suspended Solids	**2.8**			0.829	1		mg/L	
Field ID: EVBMP0008S021								
Total Suspended Solids	**1**			0.829	1		mg/L	
Field ID: EVBMP0009s019								
Total Suspended Solids	**1.6**			0.829	1		mg/L	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-131083-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**D4464(M)**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S018	N	1			
EVBMP0008S021	N	1			
EVBMP0009s019	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

No spikes in this SDG. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Laboratory Control Sample: No spikes in this SDG. No spike dupes in this SDG.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S018								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0008S021								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0009s019								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-131083-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**E200.8**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S018	N	1			
EVBMP0008S021	N	1			
EVBMP0009s019	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S018								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.51**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.38**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	0.118	U	U	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)
Field ID: EVBMP0008S021								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.38**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.23**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.141**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)
Field ID: EVBMP0009s019								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.52**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.31**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.24**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-131083-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**E245.1**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S018	N	1			
EVBMP0008S021	N	1			
EVBMP0009s019	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S018								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0008S021								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0009s019								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-131083-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**8290**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S018	N	1			
EVBMP0008S021	N	1			
EVBMP0009s019	N	1			

1. Case Narrative / Items of Interest

The following items were noted: EMPC; LB<RL; LCSRPD

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, 1,2,3,7,8-PeCDF, 2,3,4,6,7,8-HxCDF, OCDD, OCDF.

Blank Type	Blank ID	Analyte	Result	Report Limit	Lab Flag	Units	SDG
LB	MB 320-662206/1-A	1,2,3,4,6,7,8-HpCDD	1.627	50	J q	pg/L	570-131083
LB	MB 320-662206/1-A	1,2,3,4,6,7,8-HpCDF	1.189	50	J	pg/L	570-131083
LB	MB 320-662206/1-A	1,2,3,4,7,8,9-HpCDF	0.6534	50	J	pg/L	570-131083
LB	MB 320-662206/1-A	1,2,3,4,7,8-HxCDD	1.831	50	J q	pg/L	570-131083
LB	MB 320-662206/1-A	1,2,3,4,7,8-HxCDF	0.4119	50	J	pg/L	570-131083
LB	MB 320-662206/1-A	1,2,3,6,7,8-HxCDD	0.6923	50	J q	pg/L	570-131083
LB	MB 320-662206/1-A	1,2,3,6,7,8-HxCDF	0.3054	50	J q	pg/L	570-131083
LB	MB 320-662206/1-A	1,2,3,7,8,9-HxCDD	0.5014	50	J q	pg/L	570-131083
LB	MB 320-662206/1-A	1,2,3,7,8,9-HxCDF	0.9442	50	J	pg/L	570-131083
LB	MB 320-662206/1-A	1,2,3,7,8-PeCDF	0.6346	50	J q	pg/L	570-131083
LB	MB 320-662206/1-A	2,3,4,6,7,8-HxCDF	0.3118	50	J	pg/L	570-131083
LB	MB 320-662206/1-A	OCDD	9.471	100	J	pg/L	570-131083
LB	MB 320-662206/1-A	OCDF	3.566	100	J	pg/L	570-131083

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG. All reported EMPC values were qualified as estimated non-detects

Matrix / Analyte	*Sample ID*	*LR Type*	*Result*	*Qualifier*	*Reason*
WATER	1,2,3,4,6,7,8-HpCDF				
	EVBMP0007S018		2 pg/L	UJ	EMPC
	EVBMP0008S021		1.5 pg/L	UJ	EMPC
WATER	1,2,3,4,7,8-HxCDF				
	EVBMP0007S018		0.25 pg/L	UJ	EMPC
	EVBMP0008S021		0.18 pg/L	UJ	EMPC
WATER	1,2,3,6,7,8-HxCDD				
	EVBMP0008S021		0.45 pg/L	UJ	EMPC
	EVBMP0009s019		0.64 pg/L	UJ	EMPC
WATER	1,2,3,6,7,8-HxCDF				
	EVBMP0007S018		0.23 pg/L	UJ	EMPC
	EVBMP0008S021		0.18 pg/L	UJ	EMPC
	EVBMP0009s019		0.35 pg/L	UJ	EMPC
WATER	1,2,3,7,8,9-HxCDD				
	EVBMP0008S021		0.28 pg/L	UJ	EMPC
	EVBMP0009s019		0.43 pg/L	UJ	EMPC
WATER	1,2,3,7,8-PeCDD				
	EVBMP0009s019		0.24 pg/L	UJ	EMPC
WATER	1,2,3,7,8-PeCDF				
	EVBMP0007S018		0.51 pg/L	UJ	EMPC
WATER	2,3,4,6,7,8-HxCDF				
	EVBMP0007S018		0.23 pg/L	UJ	EMPC
WATER	2,3,7,8-TCDD				
	EVBMP0008S021		0.28 pg/L	UJ	EMPC

4. Laboratory Control Sample

All recovery acceptance criteria were met. These LCS RPD analytes were out of control: 13C-OCDF (BS), OCDF (BS).

5. Surrogates

All acceptance criteria were met.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Method Blanks: These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDD, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDD, 1,2,3,7,8,9-HxCDF, 1,2,3,7,8-PeCDF, 2,3,4,6,7,8-HxCDF, OCDD, OCDF.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S018								
1,2,3,4,6,7,8-HpCDD	2.8	U	J B	0.2	48		pg/L	LB<RL (U)
	2.8	U	J B	0.2	48		pg/L	RemoveBLabFlag (J)
1,2,3,4,6,7,8-HpCDF	2	UJ	J q B	0.25	48		pg/L	LB<RL (U)
	2	UJ	J q B	0.25	48		pg/L	EMPC (UJ)
1,2,3,4,7,8,9-HpCDF	0.27	U	U	0.27	48		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDD	2.2	U	J B	0.21	48		pg/L	RemoveBLabFlag (J)
	2.2	U	J B	0.21	48		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.25	UJ	J q B	0.12	48		pg/L	LB<RL (U)
	0.25	UJ	J q B	0.12	48		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDD	0.44	U	J B	0.22	48		pg/L	LB<RL (U)
	0.44	U	J B	0.22	48		pg/L	RemoveBLabFlag (J)
1,2,3,6,7,8-HxCDF	0.23	UJ	J q B	0.11	48		pg/L	LB<RL (U)
	0.23	UJ	J q B	0.11	48		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDD	0.43	U	J B	0.19	48		pg/L	RemoveBLabFlag (J)
	0.43	U	J B	0.19	48		pg/L	LB<RL (U)
1,2,3,7,8,9-HxCDF	0.72	U	J B	0.12	48		pg/L	RemoveBLabFlag (J)
	0.72	U	J B	0.12	48		pg/L	LB<RL (U)
1,2,3,7,8-PeCDD	0.21	U	U	0.21	48		pg/L	
1,2,3,7,8-PeCDF	0.51	UJ	J q B	0.13	48		pg/L	LB<RL (U)
	0.51	UJ	J q B	0.13	48		pg/L	EMPC (UJ)
2,3,4,6,7,8-HxCDF	0.23	UJ	J q B	0.1	48		pg/L	EMPC (UJ)
	0.23	UJ	J q B	0.1	48		pg/L	LB<RL (U)
2,3,4,7,8-PeCDF	**0.28**	J	J	0.14	48		pg/L	
2,3,7,8-TCDD	0.24	U	U	0.24	9.6		pg/L	
2,3,7,8-TCDF	0.14	U	U	0.14	9.6		pg/L	
OCDD	22	U	J B	0.34	96		pg/L	RemoveBLabFlag (J)
	22	U	J B	0.34	96		pg/L	LB<RL (U)
OCDF	6.6	U	J B	0.16	96		pg/L	LCSRPD (J)
	6.6	U	J B	0.16	96		pg/L	RemoveBLabFlag (J)
	6.6	U	J B	0.16	96		pg/L	LB<RL (U)
Field ID: EVBMP0008S021								
1,2,3,4,6,7,8-HpCDD	3.9	U	J B	0.18	50		pg/L	RemoveBLabFlag (J)
	3.9	U	J B	0.18	50		pg/L	LB<RL (U)
1,2,3,4,6,7,8-HpCDF	1.5	UJ	J q B	0.22	50		pg/L	LB<RL (U)
	1.5	UJ	J q B	0.22	50		pg/L	EMPC (UJ)
1,2,3,4,7,8,9-HpCDF	0.25	U	U	0.25	50		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDD	2.1	U	J B	0.2	50		pg/L	RemoveBLabFlag (J)
	2.1	U	J B	0.2	50		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.18	UJ	J q B	0.12	50		pg/L	LB<RL (U)
	0.18	UJ	J q B	0.12	50		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDD	0.45	UJ	J q B	0.19	50		pg/L	LB<RL (U)
	0.45	UJ	J q B	0.19	50		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDF	0.18	UJ	J q B	0.11	50		pg/L	LB<RL (U)
	0.18	UJ	J q B	0.11	50		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDD	0.28	UJ	J q B	0.17	50		pg/L	EMPC (UJ)
	0.28	UJ	J q B	0.17	50		pg/L	LB<RL (U)

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S021								
1,2,3,7,8,9-HxCDF	0.84	U	J B	0.12	50		pg/L	RemoveBLabFlag (J)
	0.84	U	J B	0.12	50		pg/L	LB<RL (U)
1,2,3,7,8-PeCDD	0.2	U	U	0.2	50		pg/L	
1,2,3,7,8-PeCDF	0.62	U	J B	0.14	50		pg/L	RemoveBLabFlag (J)
	0.62	U	J B	0.14	50		pg/L	LB<RL (U)
2,3,4,6,7,8-HxCDF	0.21	U	J B	0.1	50		pg/L	RemoveBLabFlag (J)
	0.21	U	J B	0.1	50		pg/L	LB<RL (U)
2,3,4,7,8-PeCDF	0.15	U	U	0.15	50		pg/L	
2,3,7,8-TCDD	0.28	UJ	J q	0.27	10		pg/L	EMPC (UJ)
2,3,7,8-TCDF	0.11	U	U	0.11	10		pg/L	
OCDD	**56**	J	J B	0.49	100		pg/L	RemoveBLabFlag (J)
	56	J	J B	0.49	100		pg/L	LB>MDL (None)
OCDF	5.4	U	J B	0.19	100		pg/L	RemoveBLabFlag (J)
	5.4	U	J B	0.19	100		pg/L	LB<RL (U)
	5.4	U	J B	0.19	100		pg/L	LCSRPD (J)
Field ID: EVBMP0009s019								
1,2,3,4,6,7,8-HpCDD	**11**	J	J B	0.48	48		pg/L	RemoveBLabFlag (J)
	11	J	J B	0.48	48		pg/L	LB>MDL (None)
1,2,3,4,6,7,8-HpCDF	4.4	U	J B	0.28	48		pg/L	RemoveBLabFlag (J)
	4.4	U	J B	0.28	48		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	0.58	U	J B	0.3	48		pg/L	RemoveBLabFlag (J)
	0.58	U	J B	0.3	48		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDD	2.2	U	J B	0.21	48		pg/L	LB<RL (U)
	2.2	U	J B	0.21	48		pg/L	RemoveBLabFlag (J)
1,2,3,4,7,8-HxCDF	0.48	U	J B	0.15	48		pg/L	LB<RL (U)
	0.48	U	J B	0.15	48		pg/L	RemoveBLabFlag (J)
1,2,3,6,7,8-HxCDD	0.64	UJ	J q B	0.21	48		pg/L	LB<RL (U)
	0.64	UJ	J q B	0.21	48		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDF	0.35	UJ	J q B	0.14	48		pg/L	LB<RL (U)
	0.35	UJ	J q B	0.14	48		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDD	0.43	UJ	J q B	0.18	48		pg/L	LB<RL (U)
	0.43	UJ	J q B	0.18	48		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDF	0.86	U	J B	0.14	48		pg/L	RemoveBLabFlag (J)
	0.86	U	J B	0.14	48		pg/L	LB<RL (U)
1,2,3,7,8-PeCDD	0.24	UJ	J q	0.21	48		pg/L	EMPC (UJ)
1,2,3,7,8-PeCDF	0.72	U	J B	0.16	48		pg/L	RemoveBLabFlag (J)
	0.72	U	J B	0.16	48		pg/L	LB<RL (U)
2,3,4,6,7,8-HxCDF	0.46	U	J B	0.13	48		pg/L	RemoveBLabFlag (J)
	0.46	U	J B	0.13	48		pg/L	LB<RL (U)
2,3,4,7,8-PeCDF	0.18	U	U	0.18	48		pg/L	
2,3,7,8-TCDD	0.27	U	U	0.27	9.6		pg/L	
2,3,7,8-TCDF	**0.29**	J	J	0.11	9.6		pg/L	
OCDD	**140**		B	0.65	96		pg/L	RemoveBLabFlag (=)
	140		B	0.65	96		pg/L	LB>MDL (None)
OCDF	12	U	J B	0.25	96		pg/L	LB<RL (U)
	12	U	J B	0.25	96		pg/L	LCSRPD (J)
	12	U	J B	0.25	96		pg/L	RemoveBLabFlag (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
LB<RL	Laboratory blank contamination less than the reporting limit	Blank
LB>MDL	Laboratory blank contamination greater than the method detection limit	Blank
RemoveBLabFlag	Lab B flag removed - analyte not detected in sample	Blank
LCSRPD	LCS RPD criteria exceeded	LaboratoryControlSample
EMPC	Estimated Maximum Possible Concentration	Matrix

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-132368-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**A2130B**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0008S022	N	1			
EVBMP0009S020	N	1			

1. Case Narrative / Items of Interest

The following item was noted: Hta>UCL

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

These NativeIDs exceeded holding time: EVBMP0008S022, EVBMP0009S020.

Field ID	LabsampleID	AnalysisDate	ExtractDate	Sample Date	Method Time	Actual HT
EVBMP0008S022	570-132368-2	3/24/2023		3/21/2023	2	3
EVBMP0009S020	570-132368-3	3/24/2023		3/21/2023	2	3

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Holding Time: These NativeIDs exceeded holding time: EVBMP0008S022, EVBMP0009S020.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S022								
Turbidity	**4.5**	J	H H3	0.05	0.05		NTU	HTa>UCL (J)
Field ID: EVBMP0009S020								
Turbidity	**1.2**	J	H H3	0.05	0.05		NTU	HTa>UCL (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
HTa>UCL	Holding time exceeded	HoldingTime

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-132368-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**A2540D**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S019	N	1			
EVBMP0008S022	N	1			
EVBMP0009S020	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S019								
Total Suspended Solids	**2**			0.829	1		mg/L	
Field ID: EVBMP0008S022								
Total Suspended Solids	**4.12**			1.04	1.25		mg/L	
Field ID: EVBMP0009S020								
Total Suspended Solids	**2.5**			1.04	1.25		mg/L	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-132368-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**D4464(M)**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S019	N	1			
EVBMP0008S022	N	1			
EVBMP0009S020	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

No spikes in this SDG. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Laboratory Control Sample: No spikes in this SDG. No spike dupes in this SDG.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S019								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0008S022								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0009S020								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-132368-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**E200.8**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S019	N	1			
EVBMP0007S019MS	MS	1			
EVBMP0007S019SD	SD	1			
EVBMP0008S022	N	1			
EVBMP0009S020	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

All MS acceptance criteria were met. All SD acceptance criteria were met. All RPD acceptance criteria were met.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S019								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**2.47**			0.318	2		ug/L	
Copper, Dissolved	**2.28**		H	0.318	2		ug/L	InvalidLabFlag (=)
Lead	**0.431**	J	J	0.118	1		ug/L	
Lead, Dissolved	**0.249**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)
Field ID: EVBMP0008S022								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.38**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.24**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.323**	J	J	0.118	1		ug/L	
Lead, Dissolved	**0.148**	J	J H	0.118	1		ug/L	InvalidLabFlag (J)
Field ID: EVBMP0009S020								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.15**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.12**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.154**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-132368-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**E245.1**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S019	N	1			
EVBMP0007S019MS	MS	1			
EVBMP0007S019SD	SD	1			
EVBMP0008S022	N	1			
EVBMP0009S020	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

All MS acceptance criteria were met. All SD acceptance criteria were met. All RPD acceptance criteria were met.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S019								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0008S022								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0009S020								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-132368-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**8290**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S019	N	1			
EVBMP0008S022	N	1			
EVBMP0009S020	N	1			

1. Case Narrative / Items of Interest

The following items were noted: EMPC; LB<RL; LCSRPD

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8-PeCDF, OCDD, OCDF.

Blank Type	Blank ID	Analyte	Result	Report Limit	Lab Flag	Units	SDG
LB	MB 320-665672/1-A	1,2,3,4,6,7,8-HpCDD	4.379	50	J	pg/L	570-132368
LB	MB 320-665672/1-A	1,2,3,4,6,7,8-HpCDF	17.58	50	J	pg/L	570-132368
LB	MB 320-665672/1-A	1,2,3,4,7,8-HxCDD	3.024	50	J	pg/L	570-132368
LB	MB 320-665672/1-A	1,2,3,4,7,8-HxCDF	1.832	50	J	pg/L	570-132368
LB	MB 320-665672/1-A	1,2,3,6,7,8-HxCDF	1.078	50	J	pg/L	570-132368
LB	MB 320-665672/1-A	1,2,3,7,8-PeCDF	1.531	50	J	pg/L	570-132368
LB	MB 320-665672/1-A	OCDD	44.74	100	J	pg/L	570-132368
LB	MB 320-665672/1-A	OCDF	15.74	100	J	pg/L	570-132368

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG. All reported EMPC values were qualified as estimated non-detects

Matrix / Analyte	*Sample ID*	*LR Type*	*Result*	*Qualifier*	*Reason*
WATER	1,2,3,4,6,7,8-HpCDD				

WATER	1,2,3,4,6,7,8-HpCDD			
	EVBMP0008S022	4.6 pg/L	UJ	EMPC
WATER	1,2,3,4,7,8,9-HpCDF			
	EVBMP0007S019	1.1 pg/L	UJ	EMPC
WATER	1,2,3,4,7,8-HxCDF			
	EVBMP0008S022	0.43 pg/L	UJ	EMPC
	EVBMP0009S020	0.58 pg/L	UJ	EMPC
WATER	1,2,3,7,8,9-HxCDD			
	EVBMP0007S019	1.5 pg/L	UJ	EMPC
WATER	1,2,3,7,8,9-HxCDF			
	EVBMP0007S019	0.73 pg/L	UJ	EMPC
	EVBMP0009S020	0.81 pg/L	UJ	EMPC
WATER	1,2,3,7,8-PeCDF			
	EVBMP0009S020	0.69 pg/L	UJ	EMPC
WATER	2,3,7,8-TCDF			
	EVBMP0008S022	0.42 pg/L	UJ	EMPC

4. Laboratory Control Sample

All recovery acceptance criteria were met. These LCS RPD analytes were out of control: 13C-OCDF (BS), OCDF (BS).

5. Surrogates

All acceptance criteria were met.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Method Blanks: These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8-PeCDF, OCDD, OCDF.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.

VDMS4.62

Data Package Completeness Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S019								
1,2,3,4,6,7,8-HpCDD	15	U	J B	1.8	53		pg/L	LB<RL (U)
	15	U	J B	1.8	53		pg/L	RemoveBLabFlag (J)
1,2,3,4,6,7,8-HpCDF	10	U	J B	0.78	53		pg/L	RemoveBLabFlag (J)
	10	U	J B	0.78	53		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	1.1	UJ	J q	1	53		pg/L	EMPC (UJ)
1,2,3,4,7,8-HxCDD	2.8	U	J B	0.62	53		pg/L	RemoveBLabFlag (J)
	2.8	U	J B	0.62	53		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	3.5	U	J B	0.46	53		pg/L	LB<RL (U)
	3.5	U	J B	0.46	53		pg/L	RemoveBLabFlag (J)
1,2,3,6,7,8-HxCDD	**2.3**	J	J	0.61	53		pg/L	
1,2,3,6,7,8-HxCDF	1.7	U	J B	0.43	53		pg/L	LB<RL (U)
	1.7	U	J B	0.43	53		pg/L	RemoveBLabFlag (J)
1,2,3,7,8,9-HxCDD	1.5	UJ	J q	0.54	53		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDF	0.73	UJ	J q	0.61	53		pg/L	EMPC (UJ)
1,2,3,7,8-PeCDD	**0.9**	J	J	0.56	53		pg/L	
1,2,3,7,8-PeCDF	1.5	U	J B	0.38	53		pg/L	RemoveBLabFlag (J)
	1.5	U	J B	0.38	53		pg/L	LB<RL (U)
2,3,4,6,7,8-HxCDF	**0.78**	J	J	0.44	53		pg/L	
2,3,4,7,8-PeCDF	0.46	U	U	0.46	53		pg/L	
2,3,7,8-TCDD	0.58	U	U	0.58	11		pg/L	
2,3,7,8-TCDF	**0.88**	J	J	0.36	11		pg/L	
OCDD	200	U	B	1.4	110		pg/L	RemoveBLabFlag (=)
	200	U	B	1.4	110		pg/L	LB<RL (U)
OCDF	20	U	J B	0.69	110		pg/L	LCSRPD (J)
	20	U	J B	0.69	110		pg/L	RemoveBLabFlag (J)
	20	U	J B	0.69	110		pg/L	LB<RL (U)
Field ID: EVBMP0008S022								
1,2,3,4,6,7,8-HpCDD	4.6	UJ	J q B	0.73	51		pg/L	EMPC (UJ)
	4.6	UJ	J q B	0.73	51		pg/L	LB<RL (U)
1,2,3,4,6,7,8-HpCDF	2.1	U	J B	0.4	51		pg/L	RemoveBLabFlag (J)
	2.1	U	J B	0.4	51		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	0.58	U	U	0.58	51		pg/L	
1,2,3,4,7,8-HxCDD	2	U	J B	0.44	51		pg/L	RemoveBLabFlag (J)
	2	U	J B	0.44	51		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.43	UJ	J q B	0.3	51		pg/L	LB<RL (U)
	0.43	UJ	J q B	0.3	51		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDD	**0.92**	J	J	0.44	51		pg/L	
1,2,3,6,7,8-HxCDF	0.28	U	U	0.28	51		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.39	U	U	0.39	51		pg/L	
1,2,3,7,8,9-HxCDF	0.38	U	U	0.38	51		pg/L	
1,2,3,7,8-PeCDD	0.48	U	U	0.48	51		pg/L	
1,2,3,7,8-PeCDF	0.98	U	J B	0.32	51		pg/L	RemoveBLabFlag (J)
	0.98	U	J B	0.32	51		pg/L	LB<RL (U)
2,3,4,6,7,8-HxCDF	0.28	U	U	0.28	51		pg/L	
2,3,4,7,8-PeCDF	0.36	U	U	0.36	51		pg/L	
2,3,7,8-TCDD	0.5	U	U	0.5	10		pg/L	

Validated Form I

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S022								
2,3,7,8-TCDF	0.42	UJ	J q	0.27	10		pg/L	EMPC (UJ)
OCDD	65	U	J B	0.95	100		pg/L	RemoveBLabFlag (J)
	65	U	J B	0.95	100		pg/L	LB<RL (U)
OCDF	5.8	U	J B	0.47	100		pg/L	RemoveBLabFlag (J)
	5.8	U	J B	0.47	100		pg/L	LB<RL (U)
	5.8	U	J B	0.47	100		pg/L	LCSRPD (J)
Field ID: EVBMP0009S020								
1,2,3,4,6,7,8-HpCDD	5.9	U	J B	1.3	50		pg/L	RemoveBLabFlag (J)
	5.9	U	J B	1.3	50		pg/L	LB<RL (U)
1,2,3,4,6,7,8-HpCDF	2.6	U	J B	0.53	50		pg/L	RemoveBLabFlag (J)
	2.6	U	J B	0.53	50		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	0.7	U	U	0.7	50		pg/L	
1,2,3,4,7,8-HxCDD	2.3	U	J B	0.47	50		pg/L	RemoveBLabFlag (J)
	2.3	U	J B	0.47	50		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.58	UJ	J B q	0.24	50		pg/L	LB<RL (U)
	0.58	UJ	J B q	0.24	50		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDD	0.46	U	U	0.46	50		pg/L	
1,2,3,6,7,8-HxCDF	0.46	U	J B	0.22	50		pg/L	RemoveBLabFlag (J)
	0.46	U	J B	0.22	50		pg/L	LB<RL (U)
1,2,3,7,8,9-HxCDD	0.41	U	U	0.41	50		pg/L	
1,2,3,7,8,9-HxCDF	0.81	UJ	J q	0.34	50		pg/L	EMPC (UJ)
1,2,3,7,8-PeCDD	0.49	U	U	0.49	50		pg/L	
1,2,3,7,8-PeCDF	0.69	UJ	J B q	0.36	50		pg/L	LB<RL (U)
	0.69	UJ	J B q	0.36	50		pg/L	EMPC (UJ)
2,3,4,6,7,8-HxCDF	0.24	U	U	0.24	50		pg/L	
2,3,4,7,8-PeCDF	0.43	U	U	0.43	50		pg/L	
2,3,7,8-TCDD	0.56	U	U	0.56	10		pg/L	
2,3,7,8-TCDF	0.33	U	U	0.33	10		pg/L	
OCDD	78	U	J B	1.3	100		pg/L	RemoveBLabFlag (J)
	78	U	J B	1.3	100		pg/L	LB<RL (U)
OCDF	7.4	U	J B	0.53	100		pg/L	LB<RL (U)
	7.4	U	J B	0.53	100		pg/L	LCSRPD (J)
	7.4	U	J B	0.53	100		pg/L	RemoveBLabFlag (J)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
LB<RL	Laboratory blank contamination less than the reporting limit	Blank
RemoveBLabFlag	Lab B flag removed - analyte not detected in sample	Blank
LCSRPD	LCS RPD criteria exceeded	LaboratoryControlSample
EMPC	Estimated Maximum Possible Concentration	Matrix

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-133109-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**A2130B**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0008S023	N	1			
EVBMP0008S023	LR	1			
EVBMP0009S021	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

All acceptance criteria were met.

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S023								
Turbidity	**3.4**			0.05	0.05		NTU	
Field ID: EVBMP0009S021								
Turbidity	**1.6**			0.05	0.05		NTU	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-133109-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**A2540D**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S020	N	1			
EVBMP0008S023	N	1			
EVBMP0009S021	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S020								
Total Suspended Solids	0.829	U	U	0.829	1		mg/L	
Field ID: EVBMP0008S023								
Total Suspended Solids	**2.5**			0.829	1		mg/L	
Field ID: EVBMP0009S021								
Total Suspended Solids	**1.2**			0.829	1		mg/L	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-133109-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**D4464(M)**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S020	N	1			
EVBMP0008S023	N	1			
EVBMP0009S021	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blanks were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

No spikes in this SDG. No spike dupes in this SDG.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

N/A

Continuing Calibration

N/A

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
Laboratory Control Sample: No spikes in this SDG. No spike dupes in this SDG.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S020								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0008S023								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	
Field ID: EVBMP0009S021								
Clay (less than 0.00391 mm)	0.01	U	U	0.01	0.01		PERCENT	
Coarse Sand (0.5mm to 1mm)	0.01	U	U	0.01	0.01		PERCENT	
Fine Sand (0.125 to 0.25mm)	0.01	U	U	0.01	0.01		PERCENT	
Gravel (greater than 2 mm)	0.01	U	U	0.01	0.01		PERCENT	
Medium Sand (0.25 to 0.5 mm)	0.01	U	U	0.01	0.01		PERCENT	
Silt (0.00391 to 0.0625mm)	0.01	U	U	0.01	0.01		PERCENT	
Total Silt and Clay (0 to 0.0626mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Coarse Sand (1 to 2mm)	0.01	U	U	0.01	0.01		PERCENT	
Very Fine Sand (0.0625 to 0.125 mm)	0.01	U	U	0.01	0.01		PERCENT	

Validated Form I

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-133109-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**E200.8**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S020	N	1			
EVBMP0008S023	N	1			
EVBMP0009S021	N	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S020								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.3**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.14**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	0.118	U	U	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)
Field ID: EVBMP0008S023								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.12**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.06**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.187**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)
Field ID: EVBMP0009S021								
Cadmium	0.133	U	U	0.133	1		ug/L	
Cadmium, Dissolved	0.133	U	U H	0.133	1		ug/L	InvalidLabFlag (U)
Copper	**1.24**	J	J	0.318	2		ug/L	
Copper, Dissolved	**1.03**	J	J H	0.318	2		ug/L	InvalidLabFlag (J)
Lead	**0.174**	J	J	0.118	1		ug/L	
Lead, Dissolved	0.118	U	U H	0.118	1		ug/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-133109-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**E245.1**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S020	N	1			
EVBMP0008S023	N	1			
EVBMP0009S021	N	1			
EVBMP0009S021MS	MS	1			
EVBMP0009S021SD	SD	1			

1. Case Narrative / Items of Interest

There were no items of concern

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

No Method Blank detects were found.

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

All MS acceptance criteria were met. All SD acceptance criteria were met. All RPD acceptance criteria were met.

4. Laboratory Control Sample

All acceptance criteria were met.

5. Surrogates

No surrogates in this SDG.

6. Tuning and Mass Calibration

N/A

7. Internal Standard

N/A

8. Calibration Information

Initial Calibration

There were no ICB detections found except for those specified on the validated Form Is

Continuing Calibration

There were no CCB detections found except for those specified on the validated Form Is

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Surrogates: No surrogates in this SDG.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S020								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0008S023								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)
Field ID: EVBMP0009S021								
Mercury	0.000124	U	U	0.000124	0.0002		mg/L	
Mercury, Dissolved	0.000124	U	U H	0.000124	0.0002		mg/L	InvalidLabFlag (U)

Validated Form I

Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
InvalidLabFlag	Removed invalid laboratory flag	Miscellaneous

CJ042 Stormwater PO 148015891
Data Quality Evaluation

SDG:	**570-133109-1**	**Validator/Date:**	**mfesler**	**5/30/2023**
Method:	**8290**	**Reviewer/Date:**	**mfesler**	**5/31/2023**
Matrix:	**WATER**			

Field Samples

Field blank association lot values: LotNumber / FieldID / SDG

NativeID	QAQC Type	Dilution	EB Lot	TB Lot	AB Lot
WATER					
EVBMP0007S020	N	1			
EVBMP0008S023	N	1			
EVBMP0009S021	N	1			

1. Case Narrative / Items of Interest

The following items were noted: EMPC; LB<RL; LCSRPD

2. Blank Summary

Field Blanks

No Field Blanks were found.

Method Blanks

These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDF, 1,2,3,7,8-PeCDF, 2,3,4,6,7,8-HxCDF, OCDD, OCDF.

Blank Type	Blank ID	Analyte	Result	Report Limit	Lab Flag	Units	SDG
LB	MB 320-666163/1-A	1,2,3,4,6,7,8-HpCDD	2.336	50	J	pg/L	570-133109
LB	MB 320-666163/1-A	1,2,3,4,6,7,8-HpCDF	1.492	50	J	pg/L	570-133109
LB	MB 320-666163/1-A	1,2,3,4,7,8,9-HpCDF	1.519	50	J	pg/L	570-133109
LB	MB 320-666163/1-A	1,2,3,4,7,8-HxCDD	2.473	50	J	pg/L	570-133109
LB	MB 320-666163/1-A	1,2,3,4,7,8-HxCDF	0.486	50	J q	pg/L	570-133109
LB	MB 320-666163/1-A	1,2,3,6,7,8-HxCDF	0.5344	50	J	pg/L	570-133109
LB	MB 320-666163/1-A	1,2,3,7,8,9-HxCDF	0.6674	50	J q	pg/L	570-133109
LB	MB 320-666163/1-A	1,2,3,7,8-PeCDF	0.5192	50	J	pg/L	570-133109
LB	MB 320-666163/1-A	2,3,4,6,7,8-HxCDF	0.5037	50	J	pg/L	570-133109
LB	MB 320-666163/1-A	OCDD	11.43	100	J q	pg/L	570-133109
LB	MB 320-666163/1-A	OCDF	4.087	100	J	pg/L	570-133109

3. Spikes and Duplicates

Field Duplicate

No FD Associated.

Laboratory Duplicates

None in this SDG

Matrix Spike

No MS's for this SDG. No SD's for this SDG. MS RPD: None for this SDG. All reported EMPC values were qualified as estimated non-detects

Matrix / Analyte	*Sample ID*	*LR Type*	*Result*	*Qualifier*	*Reason*
WATER	1,2,3,4,6,7,8-HpCDF				
	EVBMP0008S023		1.6 pg/L	UJ	EMPC
WATER	1,2,3,6,7,8-HxCDD				
	EVBMP0007S020		0.81 pg/L	UJ	EMPC
WATER	1,2,3,7,8,9-HxCDD				
	EVBMP0007S020		1.1 pg/L	UJ	EMPC
WATER	1,2,3,7,8,9-HxCDF				
	EVBMP0007S020		1.1 pg/L	UJ	EMPC
WATER	2,3,7,8-TCDF				
	EVBMP0007S020		0.46 pg/L	UJ	EMPC
WATER	OCDD				
	EVBMP0007S020		24 pg/L	UJ	EMPC

4. Laboratory Control Sample

All recovery acceptance criteria were met. These LCS RPD analytes were out of control: 13C-OCDF (BS), OCDF (BS).

5. Surrogates

All acceptance criteria were met.

6. Tuning and Mass Calibration

Tuning and Mass Calibration were not examined by AutoDV.

7. Internal Standard

Internal Standard Area/Retention Time was not examined by AutoDV.

8. Calibration Information

Initial Calibration

Initial Calibration was not examined by AutoDV.

Continuing Calibration

Continuing Calibration was not examined by AutoDV.

9. Holding Time

All acceptance criteria were met.

10. Confirmation

None for this SDG.

11. Summary

General Comments

Field Duplicates: No FD Associated.
Form I Review: No samples were excluded for dilutions or re-extractions.
Method Blanks: These analytes had Method Blank detects: 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 1,2,3,4,7,8-HxCDD, 1,2,3,4,7,8-HxCDF, 1,2,3,6,7,8-HxCDF, 1,2,3,7,8,9-HxCDF, 1,2,3,7,8-PeCDF, 2,3,4,6,7,8-HxCDF, OCDD, OCDF.
Tuning and Mass Calibration: Tuning and Mass Calibration were not examined by AutoDV.
Internal Standard Area/Retention Time: Internal Standard Area/Retention Time was not examined by AutoDV.
Initial Calibration: Initial Calibration was not examined by AutoDV.
Continuing Calibration: Continuing Calibration was not examined by AutoDV.
VDMS4.62

Data Package Completeness

Package was complete for level V validation

Forms Review/ Items of Interest

No samples were excluded for dilutions or re-extractions.

COC Review

No discrepancies were noted

Final Data Flags*

***When the data evaluation process results in multiple flags, the most severe flag becomes the final data flag. All flags are from the site-specific QAPP, except the "exclude" flag that is used to designate results that are not for risk assessment (for example, a result from a dilution where the original undiluted result is appropriate).**

Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0007S020								
1,2,3,4,6,7,8-HpCDD	3.5	U	J B	0.4	58		pg/L	LB<RL (U)
	3.5	U	J B	0.4	58		pg/L	RemoveBLabFlag (J)
1,2,3,4,6,7,8-HpCDF	1.9	U	J B	0.52	58		pg/L	RemoveBLabFlag (J)
	1.9	U	J B	0.52	58		pg/L	LB<RL (U)
1,2,3,4,7,8,9-HpCDF	1.5	U	J B	0.61	58		pg/L	RemoveBLabFlag (J)
	1.5	U	J B	0.61	58		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDD	3.1	U	J B	0.47	58		pg/L	RemoveBLabFlag (J)
	3.1	U	J B	0.47	58		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.98	U	J B	0.42	58		pg/L	RemoveBLabFlag (J)
	0.98	U	J B	0.42	58		pg/L	LB<RL (U)
1,2,3,6,7,8-HxCDD	0.81	UJ	J q	0.48	58		pg/L	EMPC (UJ)
1,2,3,6,7,8-HxCDF	0.99	U	J B	0.41	58		pg/L	RemoveBLabFlag (J)
	0.99	U	J B	0.41	58		pg/L	LB<RL (U)
1,2,3,7,8,9-HxCDD	1.1	UJ	J q	0.42	58		pg/L	EMPC (UJ)
1,2,3,7,8,9-HxCDF	1.1	UJ	J q B	0.52	58		pg/L	LB<RL (U)
	1.1	UJ	J q B	0.52	58		pg/L	EMPC (UJ)
1,2,3,7,8-PeCDD	**0.62**	J	J	0.46	58		pg/L	
1,2,3,7,8-PeCDF	0.57	U	J B	0.32	58		pg/L	LB<RL (U)
	0.57	U	J B	0.32	58		pg/L	RemoveBLabFlag (J)
2,3,4,6,7,8-HxCDF	0.88	U	J B	0.4	58		pg/L	LB<RL (U)
	0.88	U	J B	0.4	58		pg/L	RemoveBLabFlag (J)
2,3,4,7,8-PeCDF	**0.65**	J	J	0.37	58		pg/L	
2,3,7,8-TCDD	0.76	U	U	0.76	12		pg/L	
2,3,7,8-TCDF	0.46	UJ	J q	0.33	12		pg/L	EMPC (UJ)
OCDD	24	UJ	J q B	0.57	120		pg/L	LB<RL (U)
	24	UJ	J q B	0.57	120		pg/L	EMPC (UJ)
OCDF	5	U	J B	0.78	120		pg/L	RemoveBLabFlag (J)
	5	U	J B	0.78	120		pg/L	LB<RL (U)
	5	U	J B	0.78	120		pg/L	LCSRPD (J)
Field ID: EVBMP0008S023								
1,2,3,4,6,7,8-HpCDD	5.7	U	J B	0.54	49		pg/L	LB<RL (U)
	5.7	U	J B	0.54	49		pg/L	RemoveBLabFlag (J)
1,2,3,4,6,7,8-HpCDF	1.6	UJ	J q B	0.39	49		pg/L	LB<RL (U)
	1.6	UJ	J q B	0.39	49		pg/L	EMPC (UJ)
1,2,3,4,7,8,9-HpCDF	0.47	U	U	0.47	49		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDD	2.2	U	J B	0.34	49		pg/L	RemoveBLabFlag (J)
	2.2	U	J B	0.34	49		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.24	U	U	0.24	49		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	**0.84**	J	J	0.35	49		pg/L	
1,2,3,6,7,8-HxCDF	0.23	U	U	0.23	49		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	**0.5**	J	J	0.3	49		pg/L	
1,2,3,7,8,9-HxCDF	0.62	U	J B	0.3	49		pg/L	RemoveBLabFlag (J)
	0.62	U	J B	0.3	49		pg/L	LB<RL (U)
1,2,3,7,8-PeCDD	0.37	U	U	0.37	49		pg/L	
1,2,3,7,8-PeCDF	0.23	U	U	0.23	49		pg/L	LB<RL (none)
2,3,4,6,7,8-HxCDF	0.24	U	U	0.24	49		pg/L	LB<RL (none)

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Analyte	Result	Final Flag	Lab Flag	MDL	RL	LOD	Units	Validation Reason (Flag)
Field ID: EVBMP0008S023								
2,3,4,7,8-PeCDF	0.26	U	U	0.26	49		pg/L	
2,3,7,8-TCDD	0.63	U	U	0.63	9.8		pg/L	
2,3,7,8-TCDF	0.24	U	U	0.24	9.8		pg/L	
OCDD	**76**	J	J B	0.59	98		pg/L	LB>MDL (None)
	76	J	J B	0.59	98		pg/L	RemoveBLabFlag (J)
OCDF	4.8	U	J B	0.44	98		pg/L	LCSRPD (J)
	4.8	U	J B	0.44	98		pg/L	RemoveBLabFlag (J)
	4.8	U	J B	0.44	98		pg/L	LB<RL (U)
Field ID: EVBMP0009S021								
1,2,3,4,6,7,8-HpCDD	6.4	U	J B	0.73	48		pg/L	RemoveBLabFlag (J)
	6.4	U	J B	0.73	48		pg/L	LB<RL (U)
1,2,3,4,6,7,8-HpCDF	1.7	U	J B	0.48	48		pg/L	LB<RL (U)
	1.7	U	J B	0.48	48		pg/L	RemoveBLabFlag (J)
1,2,3,4,7,8,9-HpCDF	0.58	U	U	0.58	48		pg/L	LB<RL (none)
1,2,3,4,7,8-HxCDD	2.5	U	J B	0.45	48		pg/L	RemoveBLabFlag (J)
	2.5	U	J B	0.45	48		pg/L	LB<RL (U)
1,2,3,4,7,8-HxCDF	0.31	U	U	0.31	48		pg/L	LB<RL (none)
1,2,3,6,7,8-HxCDD	0.44	U	U	0.44	48		pg/L	
1,2,3,6,7,8-HxCDF	0.29	U	U	0.29	48		pg/L	LB<RL (none)
1,2,3,7,8,9-HxCDD	0.39	U	U	0.39	48		pg/L	
1,2,3,7,8,9-HxCDF	0.52	U	J B	0.39	48		pg/L	RemoveBLabFlag (J)
	0.52	U	J B	0.39	48		pg/L	LB<RL (U)
1,2,3,7,8-PeCDD	0.39	U	U	0.39	48		pg/L	
1,2,3,7,8-PeCDF	0.26	U	U	0.26	48		pg/L	LB<RL (none)
2,3,4,6,7,8-HxCDF	0.29	U	U	0.29	48		pg/L	LB<RL (none)
2,3,4,7,8-PeCDF	0.31	U	U	0.31	48		pg/L	
2,3,7,8-TCDD	0.79	U	U	0.79	9.6		pg/L	
2,3,7,8-TCDF	0.3	U	U	0.3	9.6		pg/L	
OCDD	**87**	J	J B	0.81	96		pg/L	RemoveBLabFlag (J)
	87	J	J B	0.81	96		pg/L	LB>MDL (None)
OCDF	5.3	U	J B	0.85	96		pg/L	LB<RL (U)
	5.3	U	J B	0.85	96		pg/L	LCSRPD (J)
	5.3	U	J B	0.85	96		pg/L	RemoveBLabFlag (J)

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Validation Flag Abbreviations

Abbreviation	*Validation Reason*	*Category*
LB<RL	Laboratory blank contamination less than the reporting limit	Blank
LB>MDL	Laboratory blank contamination greater than the method detection limit	Blank
RemoveBLabFlag	Lab B flag removed - analyte not detected in sample	Blank
LCSRPD	LCS RPD criteria exceeded	LaboratoryControlSample
EMPC	Estimated Maximum Possible Concentration	Matrix